



# DC<sup>TO</sup> RICHMOND

*SOUTHEAST HIGH SPEED RAIL*

TIER II FINAL ENVIRONMENTAL IMPACT STATEMENT  
AND FINAL SECTION 4(f) EVALUATION

## EXECUTIVE SUMMARY

May 2019

Prepared by  
U.S. Department of Transportation  
Federal Railroad Administration  
*and*  
Virginia Department of Rail and  
Public Transportation

**FOR ADDITIONAL INFORMATION**

The Final EIS contains detailed information on the topics summarized in this Executive Summary, as shown in the below table.



TOPIC	FINAL EIS CONTENT
<b>A. INTRODUCTION &amp; PROJECT OVERVIEW</b>	Chapter 1 Introduction
	Chapter 2 Overview of Public Involvement & Agency Coordination
	Appendix A Errata to the Draft EIS
	Appendix B Agency and Organization Comments
<b>B. PREFERRED ALTERNATIVE</b>	Appendix C Detailed Responses to Public Comments
	Chapter 3 Additional Information
	Chapter 4 Selection of the Preferred Alternative
	Appendix F Refined Operations Analysis Modeling Technical Memos
	Appendix G Final Town of Ashland /Hanover County Community Advisory Committee Summary Report
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Appendix M Updated Environmental Resource Mapbooks	
<b>D. FUTURE STEPS</b>	Chapter 7 Overview of Future Steps

This Executive Summary provides a high-level, concise summary of the Preferred Alternative for the Washington, D.C. to Richmond, VA Southeast High Speed Rail (DC2RVA) Project, as evaluated in the Final Environmental Impact Statement (EIS). It is not intended to present all data and analyses, but rather to summarize key changes since the publication of the Draft EIS in September 2017 and to present the Preferred Alternative, which is new to the Final EIS.

Readers who are interested in the full detailed analyses should refer to the chapters and technical appendices of the Final EIS, as summarized on the inside cover of this Executive Summary.

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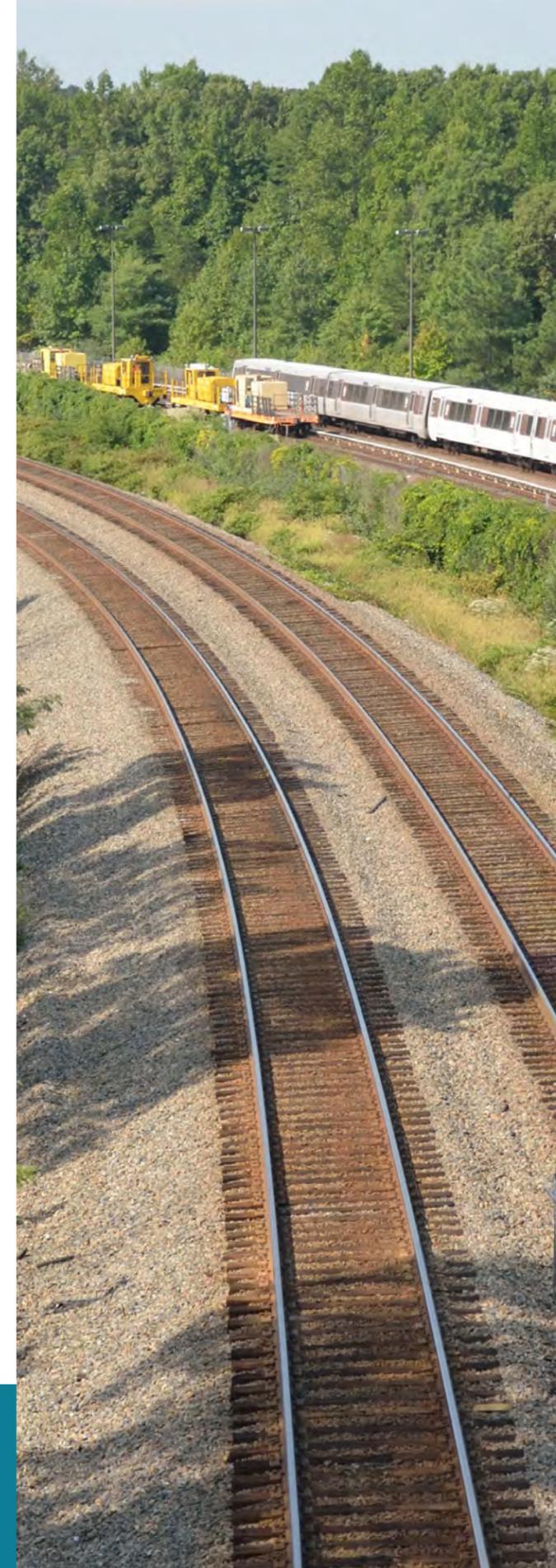
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Copies of the Draft and Final EIS documents and their technical appendices are available on the Project website: [www.DC2RVARail.com](http://www.DC2RVARail.com)



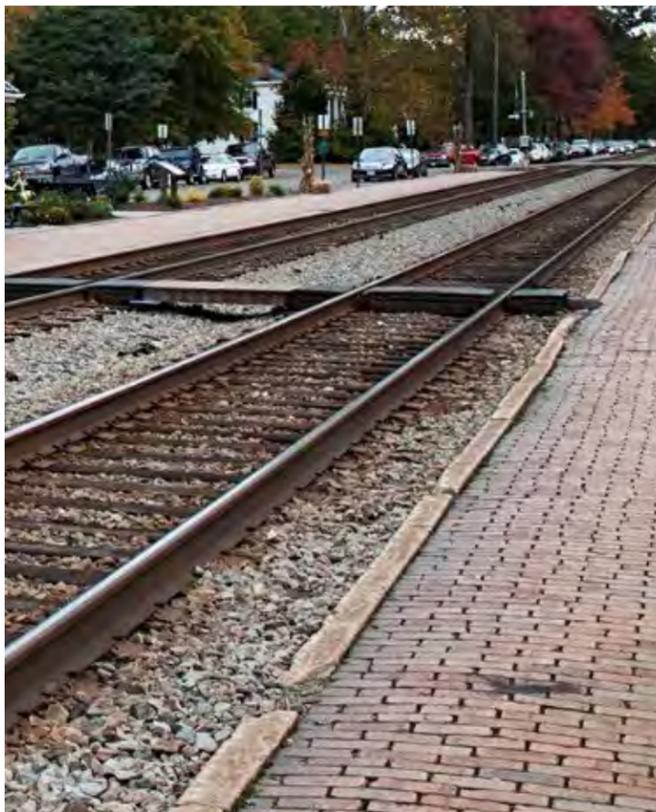
# A. INTRODUCTION & PROJECT OVERVIEW

The Federal Railroad Administration (FRA) and the Virginia Department of Rail and Public Transportation (DRPT) are proposing passenger rail service and rail infrastructure improvements in the 123-mile north-south corridor between Washington, D.C. and Richmond, VA—collectively known as the Washington, D.C. to Richmond, VA Southeast High Speed Rail (DC2RVA) Project.

## WHAT IS THE FINAL EIS FOR THE DC2RVA PROJECT?

The Project is being evaluated through the mechanism of an Environmental Impact Statement (EIS) to satisfy the requirements of the National Environmental Policy Act (NEPA). The Final EIS follows the Draft EIS for the Project, which was published for public review in September 2017.

The Final EIS focuses on information that is new, revised, or updated since the publication of the Draft EIS. It is presented in a “condensed” format, consistent with the Council of Environmental Quality (CEQ) recommendations, that allows the reader to easily identify the reasons for selecting the Preferred Alternative (which is new to the Final EIS) and the potential environmental impacts and avoidance/mitigation measures associated with the Preferred Alternative.



## HOW IS THE FINAL EIS DIFFERENT FROM THE DRAFT EIS FOR THIS PROJECT?

The main elements of the Draft EIS are provided below, with comparison to the Final EIS. The Final EIS format references and summarizes information presented in the Draft EIS, but to avoid duplication, does not republish the Draft EIS content to the same level of detail.

- Purpose and Need:** There are no changes (only clarifications) to the Purpose and Need between the Draft and Final EIS.
- Alternatives:** The Draft EIS summarized the alternatives development process and provided details on the six alternative areas of the corridor and the 23 Build Alternatives within those areas. The Final EIS evaluates the Preferred Alternative; it connects a Build Alternative from each of the six alternative areas evaluated in the Draft EIS to form the 123-mile route through the Project corridor that makes up the Preferred Alternative. Alternatives evaluations in both the Draft and Final EIS are based on conceptual engineering (approximately a 10 percent level of design). All design modifications that occurred after the Draft EIS are noted in the Final EIS.
- Affected Environment:** The Draft EIS presented a full description of existing conditions of the Project corridor, which have not significantly changed since that time.
- Environmental Consequences:** The Draft EIS presented the potential effects on the environment of all 23 Build Alternatives, while the Final EIS presents potential impacts of only the Preferred Alternative. Refinements to the conceptual engineering resulted in design changes – and therefore changes to anticipated environmental impacts – between the Draft and Final EIS.
- Section 4(f) Evaluation:** The Final EIS presents the Final Section 4(f) Evaluation in the same format as the Draft Section 4(f) Evaluation, with updates to ongoing coordination and findings, but no changes to the evaluation process.
- Public Involvement and Agency Coordination:** Both documents summarize the agency coordination and public outreach during the development of the Project to date.

# PROJECT RECAP

## PURPOSE AND NEED

- The DC2RVA Project’s stated purpose is to increase railroad capacity between Washington, D.C. and Richmond, VA to deliver higher speed passenger rail service, while also supporting the planned expansion of Virginia Railway Express (VRE) commuter rail service and accommodating the forecasted growth of freight rail service.
- The Project is a Tier II NEPA study that builds upon the previous Tier I documentation for the Southeast High Speed Rail (SEHSR) corridor between Washington, D.C. and Charlotte, NC that established:
  - The use of existing fossil fuel locomotive technology
  - The use of existing rail corridors (in preference to new alignments)
  - Building the corridor in incremental sections as funds become available

## THE SEHSR CORRIDOR



## DC2RVA PROJECT QUICK FACTS:

- 123-mile corridor, consisting primarily of two existing main tracks
- Northern Terminus: South of Long Bridge (across the Potomac River) in Arlington, VA
- Southern Terminus: Centralia in Chesterfield County, VA (south of Richmond)
- Shared rail corridor:
  - Amtrak provides intercity passenger rail service
  - VRE provides commuter rail service
  - CSX Transportation (CSXT) owns the tracks and provides freight rail service
- The Project will increase passenger trains speeds, where practicable, up to 80 to 90 mph
- The Project includes both passenger rail service and rail infrastructure improvements:
  - Increased intercity passenger train frequency (i.e., more trains)
  - Improved on-time performance of existing service
  - Increased rail capacity (i.e., an additional track)
  - Improved station areas and roadway crossings, as needed
- The Draft EIS for the Project:
  - Evaluated 23 Build Alternatives in six Alternative Areas
  - Was published in September 2017
  - Was followed by a 60-day review period with 5 public hearings



## HOW IS THE TIER II DC2RVA PROJECT DIFFERENT FROM PREVIOUS DOCUMENTATION?

The DC2RVA Project is the second part of a two-tiered environmental process. A first-level Tier I EIS and Record of Decision (ROD) were completed in 2002 for the 500-mile SEHSR corridor between Washington, D.C. and Charlotte, NC.

The 2002 Tier I EIS defined much of the framework upon which the DC2RVA Project is based, including: using existing fossil fuel locomotive technology, upgrading existing rail corridors in preference to new alignments, and building the corridor in incremental sections as funds become available.

The 2002 Tier I EIS also established the overall purpose for the SEHSR corridor: to provide a competitive transportation choice to travelers within the Washington, D.C. to Richmond, Raleigh, and Charlotte travel corridor.

This DC2RVA Tier II EIS carries forward the Purpose and Need of the 2002 Tier I EIS and further builds upon it by recognizing and incorporating several key corridor-specific items that are unique to the Project:

-  Recognition that the Project corridor is owned and operated by CSXT
-  Creation of a 90 mph maximum authorized speed for intercity passenger trains
-  Accommodation of VRE commuter trains, which operate within a portion of the corridor
-  Accommodation of CSXT's freight service

It is important to note that subsequent to the 2002 Tier I EIS, the SEHSR corridor was extended south and east to Hampton Roads, VA (to destinations in Norfolk and Newport News). In 2012, FRA and DRPT completed a Tier I EIS and ROD for the Richmond to Hampton Roads (R2HR) project to cover the SEHSR extension. The proposed service plan for the DC2RVA Project includes new train service from both the 2002 Tier I EIS and the 2012 R2HR project – see Section B of this Executive Summary for details.

## WHAT HAS HAPPENED BETWEEN THE DRAFT EIS AND THE FINAL EIS?

The selection of the Preferred Alternative, as presented in the Final EIS, included the following considerations that occurred after publication of the Draft EIS:

-  Public, agency, and organization comments on the Draft EIS during the 60-day comment period
-  Extensive outreach and communication with the public, stakeholders, and elected officials, including five public hearings for the Project
-  Additional rail operations simulation analysis to test the infrastructure proposed in the Draft EIS
-  Recommendation of the Town of Ashland/Hanover County Community Advisory Committee (CAC)
-  Commonwealth Transportation Board (CTB) Resolution for the Project
-  Refinement of feasible alternatives of the Long Bridge project, a separate project by the District Department of Transportation (DDOT) in Washington, D.C.
-  Refinement to the conceptual engineering, which resulted in both design changes to the proposed Project infrastructure as well as changes to anticipated environmental impacts of the Project, from:
  - Further minimization of potential impacts, based on comments from the public and review agencies
  - New data either provided or discovered during the Draft EIS review period



## HOW WERE COMMENTS ON THE DRAFT EIS INCORPORATED INTO THE FINAL EIS?

The 60-day comment period for the Draft EIS was from September 8, 2017 to November 7, 2017. During this time, DRPT received comments from 34 agencies and organizations, and more than 14,000 comments from 4,247 individual commenters, with most citizens commenting on several topics or issues. DRPT and FRA have reviewed and taken into consideration all comments received on the Draft EIS during the decision-making process, which led to the selection of the Preferred Alternative in the Final EIS.

DRPT and FRA do not view the public comment process as a “vote counting” exercise but rather one seeking substantive comments that benefit the FRA and DRPT in their final decision-making process. The public comment process is also an opportunity for the public to inform FRA or DRPT of potential concerns or conditions that were not identified during the preparation of the Draft EIS.

Responses to substantive comments – those that question, with reasonable basis, the accuracy of information and methodology in the Draft EIS or present new information not considered in the Draft EIS – are incorporated and addressed by way of providing additional or revised information and analyses, as needed, in the appropriate sections of the Final EIS.

The following types of comments were received:



Overall position/opinion for or against the Project



Preference for and/or opposition to a specific Build Alternative or infrastructure/service element that was evaluated in the Draft EIS, both in general as well as with specific concerns



Suggestion of additional alternatives to consider, many of which were considered but dismissed during the 2002 Tier I EIS, do not align with the implementing actions that were the outcome of the 2002 Tier I EIS, or do not align with the DC2RVA Purpose and Need



Request for detailed information or data that is beyond the scope of an environmental document and would be developed during future design phases of the Project

## FOR REFERENCE:

The chapters of the Final EIS are arranged in chronological order, representing the sequential order of events since the publication of the Draft EIS.

### FINAL EIS CHAPTER 1:

#### Introduction

This chapter guides the reader on how information is presented in the Final EIS. It provides the Project background, including how it relates to previous projects in the corridor, as well as the Project overview, which provides a concise synopsis of the Draft EIS documentation and the Project Purpose and Need.

### FINAL EIS CHAPTER 2:

#### Overview of Public Involvement and Agency Coordination

This chapter describes the public involvement and agency outreach that has occurred since the initiation of the Project. It includes a summary of comments received on the Draft EIS; a complete compilation of comments and responses are included as Appendix B and C to the Final EIS.

### FINAL EIS CHAPTER 3:

#### Additional Information

This chapter presents additional material that provides the reader with a better understanding of various Project elements, in response to comments received on the Draft EIS. FRA and DRPT developed this additional material to document ongoing activities and coordination efforts that extended beyond the Draft EIS that were relevant to the selection of the Preferred Alternative, including historical context within the corridor and additional rail operations modeling simulations.

### FINAL EIS CHAPTER 4:

#### Selection of the Preferred Alternative

This chapter presents the elements of the Preferred Alternative in each of the six alternative areas in the Project corridor, and the reason for the selection of each. It also describes any modifications to the Preferred Alternative since publication of the Draft EIS.

### FINAL EIS CHAPTER 5:

#### Environmental Consequences of the Preferred Alternative

This chapter documents the potential impacts of the Preferred Alternative to each of the environmental resources presented in the Draft EIS. The quantitative range of impacts of the other Build Alternatives from the Draft EIS are provided for comparison purposes only, and efforts to further minimize and mitigate impacts for the Preferred Alternative are described.

### FINAL EIS CHAPTER 6:

#### Final Section 4(f) Evaluation

This chapter presents the Final Section 4(f) Evaluation, which includes updates since the Draft evaluation, results of agency coordination, a summary of all Section 4(f) comments, a least harm analysis, and the basis for a finding that there are no feasible or prudent alternatives to the use of any Section 4(f) properties, when applicable.

### FINAL EIS CHAPTER 7:

#### Overview of Future Steps

This chapter describes the anticipated sequence of events following the publication of the Final EIS.

### FINAL EIS APPENDICES

The text and figures that comprise the Final EIS are supported by a series of detailed appendices, as summarized in the table on the inside cover of this Executive Summary. Two appendices provide updated mapping of the Preferred Alternative: Appendix L provides a detailed mapbook of the Preferred Alternative, including permanent and temporary limits of disturbance, and Appendix M provides updated environmental resource mapbooks, as required.

## FOR DETAILED RESPONSES TO COMMENTS, REFER TO:

- Appendix B for agency and organization responses
- Appendix C for general public responses

The responses include reference to information provided in both the Draft and Final EIS documents; some responses are the outcome of ongoing analyses and coordination that have occurred since the publication of the Draft EIS that are revised and/or updated in the Final EIS.



## B. PREFERRED ALTERNATIVE

### WHAT IS THE PREFERRED ALTERNATIVE FOR THE DC2RVA PROJECT?

The Preferred Alternative includes the following in the DC2RVA corridor:

An intercity passenger rail service plan with increased passenger train frequency (i.e. more trains) and improved on-time performance of existing intercity passenger rail service

A physical infrastructure modification plan to provide an additional track (to provide more capacity for more trains) as well as station area and roadway crossing improvements (to provide better train performance)

Descriptions for each of the six alternative areas provided on the following pages are based on conceptual engineering designs for the Preferred Alternative, which is approximately a 10 percent design level and appropriate for decisions to be made during the NEPA process. FRA and DRPT have assumed the Preferred Alternative would be in place by 2025 for purposes of the NEPA evaluations and planning. The conceptual engineering will be further refined during future design phases of the Project. Additionally, the actual size, design, configuration, and service amenities (such as baggage service or number of parking spaces) of each intercity passenger rail station will be determined by DRPT, Amtrak, and/or the station owners when the proposed service is initiated.

### WHAT NEW TRAINS ARE PART OF THE PREFERRED ALTERNATIVE?

The Project proposes to add 9 new daily intercity passenger round trips (18 total trains per day), which will be incorporated into Amtrak's existing intercity passenger network, subject to available capacity and future operating schedule:

- **Interstate Corridor (Carolinian)** service operates between New York and North Carolina through Virginia. The Project will accommodate 4 new daily Interstate Corridor (SEHSR) round trips (8 total trains per day) to/from North Carolina, with station stops in the DC2RVA corridor in: Alexandria, Fredericksburg, and Richmond (both Staples Mill Road and Main Street Station). The new service aligns with the proposed intercity passenger train service between Washington, D.C. and Charlotte, NC from the 2002 Tier I EIS, and will extend from North Carolina north into Amtrak's Northeast Corridor.
  - **Northeast Regional (Virginia)** service provides regional passenger rail service from Boston and New York to serve routes in Virginia. Trains make all local station stops. The Project will add 5 new daily Northeast Regional (SEHSR) round trips (10 total trains per day) to/from Virginia, with station stops in the DC2RVA corridor in: Alexandria, Woodbridge, Quantico, Fredericksburg, Ashland, and Richmond (both Staples Mill Road and Main Street Station). Of the new service, 3 new daily round trips start/end in Norfolk, 1 new daily round trip starts/ends in Newport News, and 1 new daily round trip starts/ends in Richmond. The new service completes the service plan defined in the 2012 R2HR EIS, and adds 1 daily round trip to/from Main Street Station in Richmond, which was added to the Project to provide early morning/late evening service from/to Richmond connecting to Washington D.C. and Amtrak's Northeast Corridor.
  - **Long Distance** service operates from New York and continues through Washington, D.C. and Virginia to other out-of-state locations, with limited station stops within the Project corridor. The Project will not affect the frequency (i.e., number) of Long Distance trains in service, but will modify routing/scheduling of those trains within the corridor and improve their operating reliability within the corridor to meet Project goals. The Project will add one additional stop for these trains at Main Street Station in Richmond.
  - **Auto Train** service operates as a daily nonstop, overnight train between dedicated station facilities in Lorton, VA and Sanford, FL, and carries passengers and their automobiles. The Project will not affect the frequency, routing, or scheduling of the Auto Train within the corridor, but will improve operating reliability within the corridor to meet Project goals.
- Under the proposed service plan, intercity passenger trains will operate between Washington, D.C. and Richmond every 1 to 2 hours in each direction during the day and early evening.
- Independent of the Project, intercity passenger, VRE, and freight trains will continue to operate in the Project corridor. The Project does not add VRE or freight train frequencies, but does accommodate their planned future growth, as described in Chapter 4 of the Final EIS.

**ALTERNATIVE AREA 1: ARLINGTON (LONG BRIDGE APPROACH)**  
**Alternative 1B**  
**Add Two Main Tracks on the West**  
 Location: CFP 110 – CFP 109.3  
 Approximate Length: 1 Mile

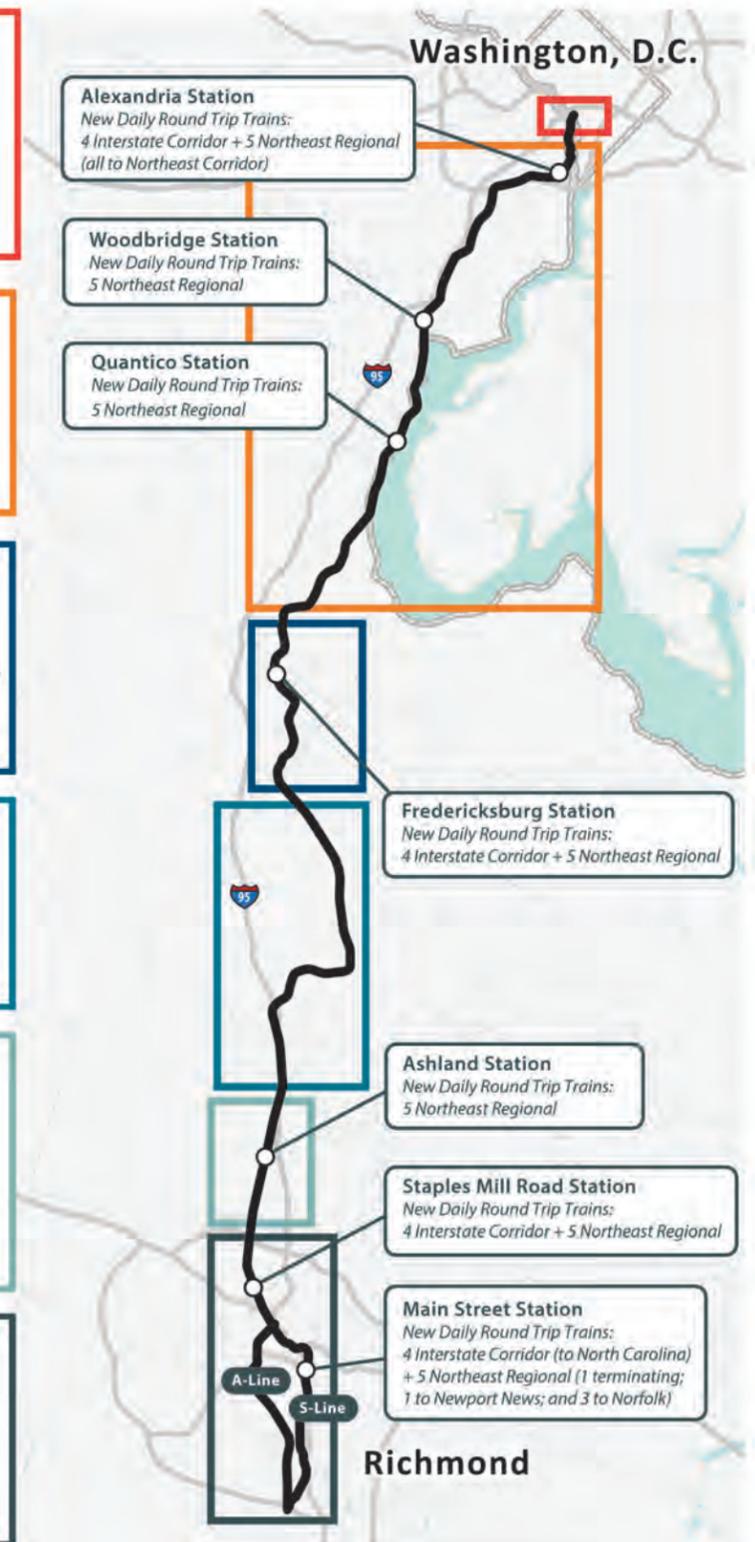
**ALTERNATIVE AREA 2: NORTHERN VIRGINIA**  
**Alternative 2A**  
**Add a Third or Fourth Main Track**  
 Location: CFP 109.3 – CFP 62  
 Approximate Length: 47 Miles

**ALTERNATIVE AREA 3: FREDERICKSBURG**  
**Alternative 3B**  
**Add a Third Main Track Through the City, Add a Third Main Track North and South of the City**  
 Location: CFP 62 - CFP 48  
 Approximate Length: 14 Miles

**ALTERNATIVE AREA 4: CENTRAL VIRGINIA**  
**Alternative 4A**  
**Add a Third Main Track**  
 Location: CFP 48 - CFP 19  
 Approximate Length: 29 Miles

**ALTERNATIVE AREA 5: ASHLAND**  
**Alternative 5A**  
**Maintain Two Tracks Through Town (No Station Improvements), Add a Third Main Track North and South of Town**  
 Location: CFP 19 - CFP 9  
 Approximate Length: 10 Miles

**ALTERNATIVE AREA 6: RICHMOND**  
**Alternative 6F**  
**Staples Mill Road Station and Main Street Station Full Service with S-Line Improvements**  
 Location: CFP 9 - A 11 Centraillia  
 Approximate Length: 23 Miles



Note for figure/text descriptions in this section: CSXT uses prefixes to denote track mileposts within subdivisions: "CFP" is the milepost prefix designating the RF&P subdivision of CSXT, and "A" is the milepost prefix designating the North End (A-Line) subdivision of CSXT

# ALTERNATIVE AREAS RECAP

The Draft EIS for the DC2RVA Project identified potential Build Alternatives in six alternative areas along the corridor.

## ALTERNATIVE AREA 1: ARLINGTON



An approximately 1-mile section in Arlington from the south side of the Potomac River to Crystal City that includes the approach to the existing two-track Long Bridge, which crosses the Potomac River between Washington, D.C. and Arlington, VA. The Long Bridge is the subject of a separate environmental study being led by DDOT to expand capacity of the crossing to four-tracks. There are no intercity passenger rail stations located in Area 1.

## ALTERNATIVE AREA 2: NORTHERN VIRGINIA



A 47-mile section from Crystal City in Arlington to the Dahlgren Spur just north of the Rappahannock River at Fredericksburg, which passes through developed urban areas and crosses several major waterways, including the Occoquan River, Neabsco Creek, Powells Creek, and Aquia Creek. It is the most congested area in the Project rail corridor, with intercity passenger trains, VRE commuter trains, and CSXT freight trains utilizing capacity on the existing tracks. Three intercity passenger rail stations are in Area 2 at Alexandria, Woodbridge, and Quantico. VRE provides commuter service to the three intercity passenger rail stations in Area 2 as well as at six other stations in Crystal City, Franconia/Springfield, Lorton, Rippon, Brooke, and Leeland Road. A new VRE station at Potomac Shores is scheduled to open in 2020.

## ALTERNATIVE AREA 3: FREDERICKSBURG



A 14-mile section through Fredericksburg, from the Dahlgren Spur just north of the Rappahannock River to Crossroads, VA (the southern terminus of VRE's service). The corridor in this area crosses the Rappahannock River, passes through the City of Fredericksburg, and traverses several historic and cultural resources including the Fredericksburg National Military Park. The Fredericksburg Station in the City of Fredericksburg is served by both Amtrak and VRE. Additionally, VRE serves Spotsylvania Station at Crossroads in the southern end of Area 3.

The Preferred Alternative connects a Build Alternative from each of the six alternative areas evaluated in the Draft EIS to form the 123-mile route through the Project corridor.

## ALTERNATIVE AREA 4: CENTRAL VIRGINIA



A 29-mile section from Crossroads to Doswell, through a largely rural area with multiple small waterway crossings and extensive wetlands. This portion of the corridor represents the best opportunity for passenger trains to achieve and maintain the 90 mph maximum authorized speed identified for the Project. There are no intercity passenger rail stations located in Area 4.

## ALTERNATIVE AREA 5: ASHLAND



A 10-mile section including the Town of Ashland and rural portions of Hanover County, extending from Doswell to I-295. There is one intercity passenger rail station in Area 5 at Ashland. Near the center of the area, the existing two-track main line runs at-grade for approximately two miles on narrow right-of-way through the center of Railroad Avenue/Center Street in the Town of Ashland.

## ALTERNATIVE AREA 6: RICHMOND



A 23-mile section from I-295 to Centralia, VA, that includes Henrico County, the City of Richmond, and Chesterfield County. There are two intercity passenger rail stations in Area 6 at Staples Mill Road Station (in Henrico County) and Main Street Station (in downtown Richmond). Two rail routes diverge at Acca Yard, north of Richmond, and reconnect at Centralia (the southern terminus of the Project):

- The A-Line is the western rail line around Richmond, currently used by the majority of north-south passenger and freight trains. It is CSXT's principal freight route to points north and south and is approximately 14.3 miles from the south end of Acca Yard to Centralia.
- The S-Line runs through the downtown center of Richmond and is currently used primarily by local freight to serve industry and passenger rail service to Newport News. It is approximately 15.6 miles from the south end of Acca Yard to Centralia.

## PREFERRED ALTERNATIVE 1B

ADD TWO MAIN TRACKS ON THE WEST (CFP 110.0 TO CFP 109.3)

### DESCRIPTION

Beginning south of the George Washington Memorial Parkway, Alternative 1B will add two additional main line tracks west of the existing tracks in Arlington to Crystal City, generally staying within the existing right-of-way. Alternative 1B consists of:

- Constructing two main tracks on the west side of existing tracks, with minor track shifts to improve speed through some curves
- Alignment of the alternatives that are part of the separate Long Bridge project by DDOT, which proposes to increase railroad capacity across the Potomac River by adding two tracks upstream (west) of existing rail bridge
- Track improvements generally within existing right-of-way
- No intercity passenger stations in the area
- No changes to existing public roadway crossings



### BASIS FOR SELECTING 1B

DRPT identified the approximately 1-mile Alternative Area 1, located immediately south of the Long Bridge across the Potomac River, to evaluate potential connections between the DC2RVA Project and a future recommendation from the separate Long Bridge project by DDOT. In the Draft EIS, DRPT assumed that an additional two tracks would be added across the Potomac River as part of the Long Bridge project and identified three DC2RVA Project Build Alternatives in Area 1 that added two tracks in various configurations to connect to potential future Long Bridge recommendation options.

Subsequent to the Draft EIS on June 19, 2018, DDOT released the Alternatives Development Report for the Long Bridge project that advanced two alternatives, both of which add two tracks upstream (west) of the existing two-track bridge. Both Long Bridge alternatives align with DC2RVA Alternative 1B, and do not align with DC2RVA Alternatives 1A or 1C. Therefore, Alternative 1B is the Preferred Alternative for the DC2RVA Project.

### CHANGES SUBSEQUENT TO THE DRAFT EIS

In addition to the Long Bridge alternative selection, comments from the public and review agencies (such as from Arlington County regarding the Long Bridge Park project), combined with new data either provided or discovered during the Draft EIS review period, resulted in modifications to the conceptual engineering for Alternative 1B:

- Minimizations to impacts by adding or extending retaining walls
- Adjustments to track curves for train operations or impact mitigations
- Track improvements, such as crossovers, proposed between the existing tracks or between the existing and proposed track(s) for train operations

## PREFERRED ALTERNATIVE 2A

ADD A THIRD OR FOURTH MAIN TRACK (CFP 109.3 TO CFP 62)

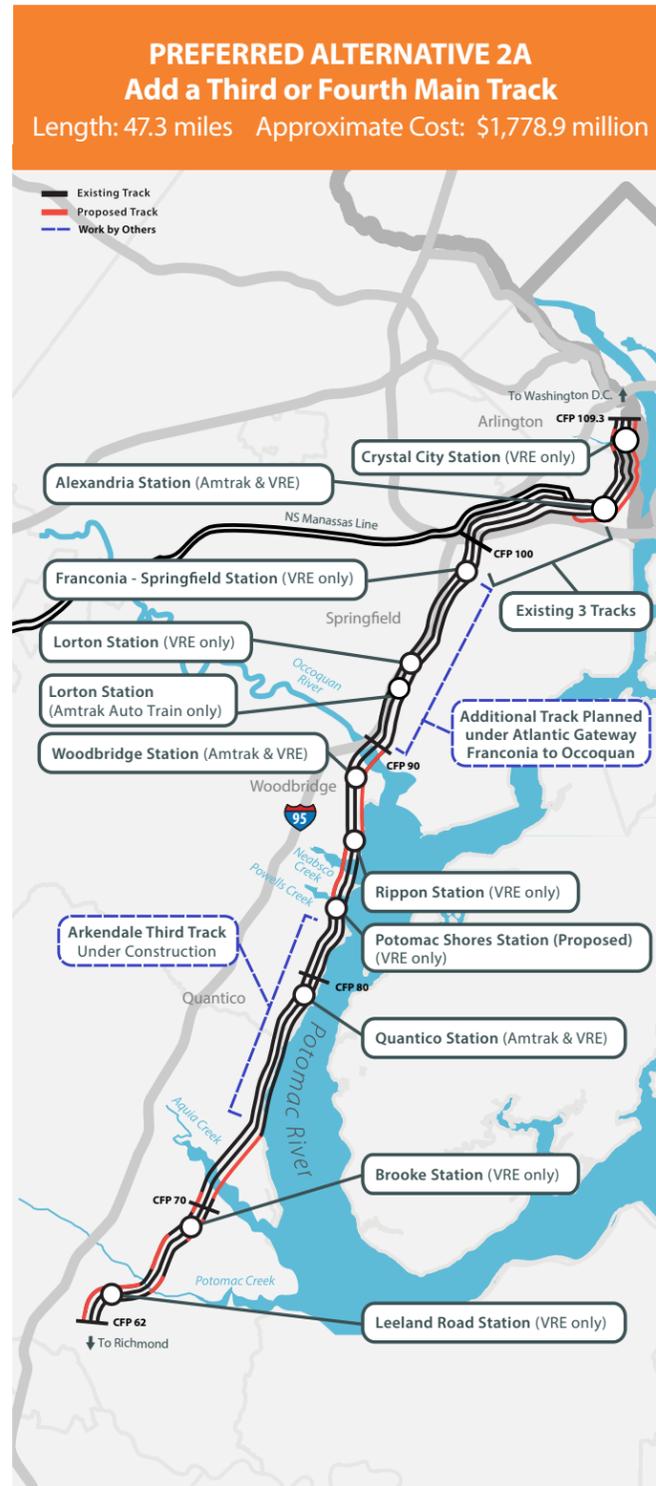
### DESCRIPTION

Alternative 2A will add one additional main line track and realign existing tracks in some curves to improve speed. The additional track will be located on either the east or west side of the existing tracks, based on rail operations, site constraints, and potential impacts. Alternative 2A will consist of:

- Constructing one main track\*, with realignment of some curves to improve speed, to create:
  - A fourth track from Crystal City in Arlington to Alexandria
  - A third track from Alexandria to north of Fredericksburg

\*Work completed by others in this area includes the installation of a third track in the following sections: Alexandria to Franconia; Franconia to Occoquan; and Powells Creek to Arkendale (the portion of this project from North Possum Point to Arkendale is currently under construction, and construction of the remainder is postponed until additional construction funding is available).

- Track improvements generally within existing right-of-way
- Intercity Passenger Stations:
  - Station improvements at Alexandria (parking improvements) and Woodbridge (platform improvements)
  - Proposed new DC2RVA service at Alexandria, Woodbridge, and Quantico (as shown on map)
  - Track alignments to accommodate platform and other improvements planned by VRE at Alexandria, Woodbridge, and VRE-only stations
- Public At-Grade Crossings:
  - Close one existing crossing in Stafford, VA (Mount Hope Church Road), with alternate access provided
  - No new grade separations proposed
  - All other crossings remain with safety improvements
- Reconstructing some existing grade separations to allow for the addition of a third main line track under bridges with limited horizontal or vertical clearance
- Major water crossings at Occoquan River, Neabsco Creek, Powells Creek, and Aquia Creek



### BASIS FOR SELECTING 2A

In the Draft EIS, DRPT considered and dismissed alternative alignments that increased speed and/or capacity but extended outside the CSXT right-of-way in Area 2 in order to reduce impacts to property, wetlands, and existing infrastructure in this congested area. By adding a fourth track to the existing triple-track section from Crystal City in Arlington to Alexandria and adding a third track in locations that currently only have two tracks from Alexandria to Fredericksburg, where required, Alternative 2A will support expanded intercity passenger service, VRE commuter service, and CSXT freight service, improve reliability, add capacity, and increase passenger train speeds where practicable. New structures will carry the additional track across the river crossings adjacent to the existing rail bridges. Preferred Alternative 2A will also remain primarily within the existing CSXT right-of-way.

### CHANGES SUBSEQUENT TO THE DRAFT EIS

Comments from the public and review agencies, combined with new data either provided or discovered during the Draft EIS review period, resulted in modifications to the conceptual engineering for Alternative 2A:

- Coordinating with adjacent active projects - Atlantic Gateway; Powells Creek to Arkendale Third Track project; and, VRE Station expansions/improvements
- Addressing access impacts to driveways and properties along the corridor, including access at Railroad Avenue in Woodbridge, VA
- Incorporating crossing improvements (e.g. additional paving widths for crossing and pedestrian safety, potential locations of gates and equipment sheds)
- Adjustments to track curves for train operations or impact mitigations, and adding crash walls to protect highway bridge piers

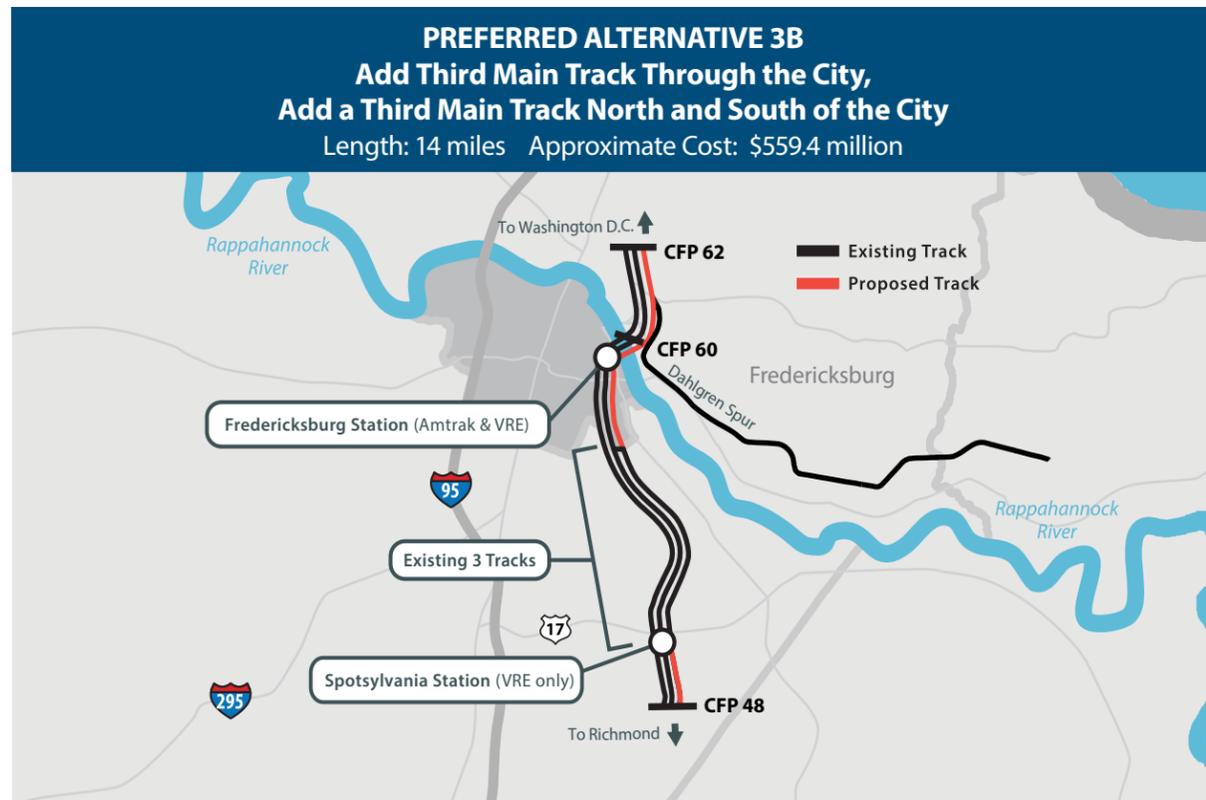
### PREFERRED ALTERNATIVE 3B

ADD THIRD MAIN TRACK THROUGH THE CITY, ADD A THIRD MAIN TRACK NORTH AND SOUTH OF THE CITY (CFP 62 TO CFP 48)

#### DESCRIPTION

Alternative 3B will add one additional main line track in areas with only two existing tracks and realign existing tracks to improve speed, while remaining largely within the existing CSXT right-of-way. The additional track will be located on either the east or west side of existing tracks, based on rail operations, site constraints, and potential impacts. Alternative 3B consists of:

- Constructing one main track, with realignment of some curves to improve speed
  - Within the city, the additional track will be added to the east of existing tracks with a new elevated railway at the station
- Track improvements generally within existing right-of-way
- Intercity Passenger Stations:
  - Station improvements at Fredericksburg (including building, platform, and parking improvements)
  - Proposed new DC2RVA service at Fredericksburg
  - No changes to VRE's Spotsylvania Station
- Public At-Grade Crossings:
  - No closures proposed
  - Grade separate one crossing (Lansdowne Road)
  - All other crossings remain with safety improvements
- Reconstructing some existing grade separations to allow for the addition of a third main line track under bridges with limited horizontal or vertical clearance
- Major water crossing at Rappahannock River: new bridge structure added east (downstream) of existing rail bridge



#### BASIS FOR SELECTING 3B

In the Draft EIS, DRPT screened multiple alignments and evaluated three Build Alternatives in detail. Maintaining two tracks through the City of Fredericksburg (i.e., Build Alternative 3A as evaluated in the Draft EIS) does not provide sufficient capacity to support the Project Purpose and Need. Adding a two-track bypass to the east of the city (i.e., Build Alternative 3C as evaluated in the Draft EIS) provides sufficient capacity, but would incur substantial impacts to wetlands, historic and cultural resources, property, and infrastructure. In addition, there was strong local opposition to a new greenfield bypass. Therefore, Alternative 3B, which adds a third main track to link existing sections of three or more tracks and provides a continuous three track corridor through the city, was selected as the Preferred Alternative.

#### CHANGES SUBSEQUENT TO THE DRAFT EIS

Comments from the public and review agencies, combined with new data either provided or discovered during the Draft EIS review period, resulted in modifications to the conceptual engineering for Alternative 3B:

- Addressing train operations improvements within the existing/proposed track limits
- Addressing local planning comments to eliminate a highway bridge replacement at White Oak Road, and to plan for a pedestrian culvert at Naomi Road
- Addressing access impacts to driveways and properties along the corridor
- Including crossing improvements, e.g. additional paving widths for crossing and pedestrian safety, potential locations of gates and equipment sheds
- Adding a fourth track/siding to allow trains to pass a stopped or slow-moving train south of Fredericksburg
- Extending the west side platform at the Fredericksburg station to the maximum allowable by site constraints while avoiding/minimizing impacts

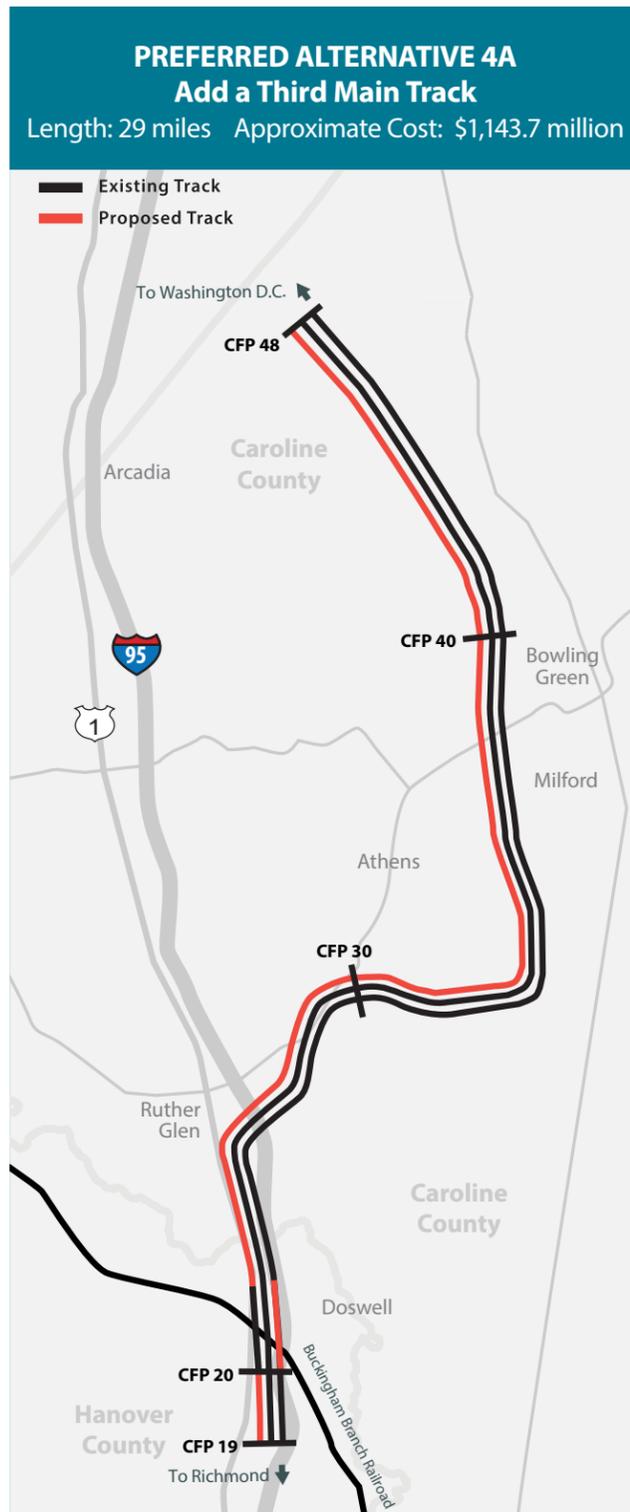
## PREFERRED ALTERNATIVE 4A

ADD A THIRD MAIN TRACK (CFP 48 TO CFP 19)

### DESCRIPTION

Alternative 4A will add one additional main line track and realign existing tracks in some curves to improve speed. The additional track will be located on either the east or west side of the existing tracks based on rail operation considerations, site constraints, and potential impacts. Alternative 4A consists of:

- Constructing one main track with realignment of some curves to improve speed
- Track improvements generally within existing right-of-way
- No intercity passenger stations in the area
- Public At-Grade Crossings:
  - Close one existing crossing (Colemans Mill Road)
  - No new grade separations proposed
  - All other crossings remain with safety improvements
- Reconstructing some existing grade separations to allow for the addition of a third main line track under bridges with limited horizontal or vertical clearance
- Multiple crossings of small waterways and wetlands



### BASIS FOR SELECTING 4A

In the Draft EIS, DRPT screened multiple alignments to improve capacity and reach the 90 mph speed, while minimizing impacts to wetlands, waterways, and other resources, and carried one alternative forward for further evaluation in the Draft EIS—Alternative 4A, which adds a third main track to the west of the existing two tracks through most of Area 4. Alternative 4A was selected as the Preferred Alternative as it increases passenger train speed and will add Project improvements largely within the existing CSXT-owned right-of-way. It will support expanded intercity passenger service and CSXT freight service, while minimizing impacts to wetlands and property.

### CHANGES SUBSEQUENT TO THE DRAFT EIS

Comments from the public and review agencies, combined with new data either provided or discovered during the Draft EIS review period, resulted in modifications to the conceptual engineering for Alternative 4A:

- Addressing train operations improvements, including crossovers, within the existing or proposed track limits
- Addressing access impacts to driveways and properties along the corridor
- Incorporating crossing improvements (e.g. additional paving widths for crossing and pedestrian safety, potential locations of gates and equipment sheds)

### PREFERRED ALTERNATIVE 5A

MAINTAIN TWO TRACKS THROUGH TOWN (NO STATION IMPROVEMENTS)  
ADD A THIRD MAIN TRACK NORTH AND SOUTH OF TOWN (CFP 19 TO CFP 9)

#### DESCRIPTION

Through the Town of Ashland, Alternative 5A will maintain the existing two tracks, which will be used by freight and passenger trains similar to current conditions, and does not include any station improvements at the existing Ashland Station. One new track will be constructed north and south of town, where there will be some shifts to improve speed throughout the area. Alternative 5A consists of:

- Constructing one main track north and south of town, with track shifts to improve speed through some curves
- Maintaining two existing tracks (no construction of new track/no additional capacity) through town
- Track improvements generally within the existing right-of-way
- No station improvements at existing Ashland Station
- Public At-Grade Crossings:
  - No closures proposed
  - Two grade separations proposed (Vaughan Road/ Archie Cannon Drive and Ashcake Road)
  - No improvements to at-grade road or pedestrian crossings within town
  - Crossings north and south of town remain with safety improvements
- Reconstructing some existing grade separations to allow for the addition of a third main line track under bridges with limited horizontal or vertical clearance



Ashland Station improvements, including new low-level side platforms, are part of a separate plan by Amtrak for improvements to comply with the Americans with Disabilities Act (ADA). Construction is scheduled to begin in 2019.

In accordance with the December 2017 Commonwealth Transportation Board resolutions, DRPT commits to working with the Town government, Randolph-Macon College, CSXT, FRA, and other stakeholders to develop safety improvements for public road and pedestrian/bicycle crossings in Ashland, separate from the DC2RVA Project.

#### BASIS FOR SELECTING 5A

FRA and DRPT deferred the recommendation of a preferred alternative for Area 5 to the Final EIS, and DRPT established the Ashland/Hanover Area Community Advisory Committee (CAC) to advise and inform DRPT on DC2RVA alternatives and issues in the Ashland/Hanover County area. The CAC was tasked with reassessing all previous options considered for greater rail capacity in the area and identifying potential options that could meet the Purpose and Need of the DC2RVA Project, while also minimizing or avoiding potential impacts to the community.

Based on the information and analyses of the seven Build Alternatives presented for Area 5 in the Draft EIS, public comments on the Draft EIS, information and comments developed through the CAC process, and subsequent refined rail operations analyses, DRPT selected Alternative 5A as the Preferred Alternative. It provides sufficient railroad capacity to support the Purpose and Need while having the least impact on property, wetlands and other natural resources, historic and cultural resources, and the built environment. Alternative 5A also best addresses the community's concerns, including strong opposition to a bypass from Hanover County residents, and strong opposition to adding a track through Ashland from Town residents and Randolph-Macon College.

#### CHANGES SUBSEQUENT TO THE DRAFT EIS

Comments from the public and review agencies, combined with new data either provided or discovered during the Draft EIS review period, resulted in modifications to the conceptual engineering for Alternative 5A:

- Addressing agency comments and the CTB resolution to reduce impacts to the Town of Ashland between Vaughan Road/Archie Cannon Drive and Ashcake Road that include:
  - Eliminating Project-related station improvements
  - Reducing/minimizing Project footprint outside of existing CSXT right-of-way
  - Reassigning crossing safety improvements in the Town of Ashland to a future study by the town and DRPT (separate from this DC2RVA Project)
- Addressing access impacts to driveways and properties along the corridor
- Addressing train operations improvements, including crossovers, within the existing or proposed track limits
- Addressing effects of additional information at Washington Highway (Route 1), requiring replacement of the existing overpass due to insufficient horizontal clearance for an additional track and crash wall

**PREFERRED ALTERNATIVE 6F**

STAPLES MILL ROAD STATION AND MAIN STREET STATION  
FULL SERVICE WITH S-LINE IMPROVEMENTS (CFP 9 TO A 11)

**DESCRIPTION**

Alternative 6F includes one additional main track through the area via the S-Line to provide improved service at Staples Mill Road Station and Main Street Station (Full Service), where both stations remain operational. The additional track will be located on either the east or west side of the existing tracks based on rail operation considerations, site constraints, and potential impacts. Alternative 6F consists of:

- Constructing one main track along portions of existing RF&P (north of Richmond) and S-Line (through Richmond), with track shifts to improve speed, generally within existing right-of-way
- Intercity Passenger Stations: Staples Mill Road Station and Main Street Station
  - All passenger trains that stop in Richmond will serve both stations (as shown on map)
  - Improve both stations to include new/modified station buildings and platforms
- Public At-Grade Crossings:
  - Close five crossings (St James Street, N 2nd Street/Valley Road, Dale/Trenton Avenue, Brinkley Road, and Old Lane)
  - Grade separate four crossings (Hungary Road, Hermitage Road (RF&P), Hospital Street/N 7th Street, and E Commerce Road)
- All other public roadway crossings remain with safety improvements (note this differs from R2R's proposal to grade separate all crossings between the James River and Centralia, VA)
- Reconstructing some existing grade separations to allow for the addition of a third main line track under bridges with limited horizontal or vertical clearance
- Major water crossing at the James River
- Constructing a new passenger train service facility at the Bellwood wye track
- No changes to CSXT freight service routes through Richmond. Moving all passenger train service (except Auto Train, which does not stop in Richmond) to the S-Line, separate from CSXT's principal freight corridor through Richmond (i.e., the A-Line), will reduce rail congestion/delay



**BASIS FOR SELECTING 6F**

In the Draft EIS, DRPT identified eight alternatives in the Richmond area as summarized on pages 23-24. The five Build Alternatives that would rely on the A-Line to carry additional passenger service (Alternatives 6A, 6B-A-Line, 6C, 6E, and 6G from the Draft EIS) were eliminated from further consideration as being unable to meet the Project's Purpose and Need. Three Build Alternatives rely on the S-Line: Alternatives 6B-S-Line, 6D, and 6F from the Draft EIS. Alternative 6B-S-Line is feasible and could meet the Project service performance goals, but the Boulevard Station location would not be consistent with prior FRA and Commonwealth decisions and does not meet FRA and Amtrak guidance for intercity passenger trains to serve the city center. Alternative 6D: Main Street Station Only (S-Line) would not meet the Project's Purpose and Need due to insufficient track and platform capacity at Main Street Station.

Alternative 6F is feasible and supports passenger service and freight service to meet the Purpose and Need. Alternative 6F is also consistent with prior FRA and Commonwealth decisions regarding the SEHSR program and Main Street Station as Richmond's downtown intercity passenger station, including decisions documented in the 2002 Tier I ROD, Richmond to Hampton Roads Tier I ROD (2012), and Richmond to Raleigh Tier II ROD (2016).

**CHANGES SUBSEQUENT TO THE DRAFT EIS**

Comments from the public and review agencies, combined with new data either provided or discovered during the Draft EIS review period, resulted in modifications to the conceptual engineering for Alternative 6F:

- Addressing comments to minimize right-of-way impacts by adding or extending retaining walls
- Addressing access impacts to driveways and properties along the corridor
- Incorporating crossing improvements (e.g. additional paving widths for crossing and pedestrian safety, potential locations of gates and equipment sheds)
- Addressing train operations improvements within the track limits, including extending the west platforms at Main Street Station and adding crew walkways at both ends of these platforms to reduce the footprint of these improvements
- Addressing effects of extending the tracks across Hermitage Road (RF&P Line), which requires the replacement of the at-grade crossing with a proposed overpass to avoid blockage of the crossing during train operations at Acca Yard
- Addressing the expansion of the existing parking lot at Staples Mill Road Station by DRPT, Amtrak, and the Virginia Department of Transportation (VDOT) in June 2018, which meets the projected parking demand for DC2RVA, and no further parking improvements are recommended
- Limiting impacts in Richmond's Shockoe Valley in response to public and agency comments, specifically:
  - Relocating the proposed turning wye and service yard to Bellwood, which reduces the Project footprint at Brown St. Yard and reduces private property impacts
  - Removing the proposed parking deck on the east side of Main Street Station, thereby reducing adverse effects on cultural resources and private property; DRPT will coordinate with the city as they develop a parking plan for Main Street Station when service is instituted

When future stages of the DC2RVA Project are funded, improvements would advance under the DC2RVA Project design in the area between Main Street Station and Centralia, VA where DC2RVA and R2R overlap.

# DRAFT EIS BUILD ALTERNATIVES RECAP

DRAFT EIS BUILD ALTERNATIVE		DESCRIPTION
<b>AREA 1: ARLINGTON</b>		Three Build Alternatives were evaluated in Area 1, the major difference being which side of the existing track the new track would be added (as indicated in the Build Alternative names). There are no intercity passenger rail stations in this area.
<b>1A</b>	Add Two Tracks on the East	Within the Arlington Bridge approach, two tracks would be added to the east side of the existing tracks.
<b>1B</b>	Add Two Tracks on the West	<b>SELECTED AS THE PREFERRED ALTERNATIVE</b> This alternative aligns with both alternatives identified in the Alternatives Development Report for the separate Long Bridge Study.
<b>1C</b>	Add One Track East and One Track West	Within the Arlington Bridge approach, one track would be added to the east side of the existing tracks and one track would be added to the west side of the existing tracks.
<b>AREA 2: NORTHERN VIRGINIA:</b>		The sole Build Alternative evaluated in Area 2 adds one main track within the existing railroad right-of-way. There are three intercity passenger rail station in the area: Alexandria, Woodbridge, and Quantico.
<b>2A</b>	Add One Track / Improve Existing Track	<b>SELECTED AS THE PREFERRED ALTERNATIVE</b> This alternative adds a third or fourth main track, mostly within existing right-of-way, through the area.
<b>AREA 3: FREDERICKSBURG:</b>		Three Build Alternatives were evaluated in Area 3, including both two- and three-track options on the existing alignment through the city and a two-track bypass alignment around the city. The Fredericksburg Station is within this area.
<b>3A</b>	Maintain Two Tracks Through City	Within Fredericksburg, there would be no construction of new track/no additional rail capacity, and train operations would continue through the city similar to existing conditions, with station improvements. North and south of the city, there would be construction of one additional track within the existing railroad right-of-way.
<b>3B</b>	Add One Track Through City East of Existing	<b>SELECTED AS THE PREFERRED ALTERNATIVE</b> This alternative adds a third main track through the city, and adds a third or fourth main track north and south of the city, mostly within existing right-of-way.
<b>3C</b>	Add Two-Track Bypass East of City	A new two-track bypass east of Fredericksburg would be constructed to serve freight and passenger trains that do not stop in the city, which would require additional right-of-way. The existing rail corridor would be maintained in the city and the station would be improved. North and south of the city, there would be construction of one additional track within the existing railroad right-of-way.
<b>AREA 4: CENTRAL VIRGINIA</b>		The sole Build Alternative evaluated in Area 4 adds one main track within existing railroad right-of-way. There are no intercity passenger rail stations in this area.
<b>4A</b>	Add One Track/ Improve Existing Track	<b>SELECTED AS THE PREFERRED ALTERNATIVE</b> This alternative adds a third main track, mostly within existing right-of-way.
<b>AREA 5: ASHLAND</b>		Seven Build Alternatives were evaluated in Area 5, varying from track alignment options through town to a new bypass. The alternatives include two different location options for the Ashland Station: a Downtown Station (which would maintain the existing station location with improvements) and an Ashcake Station location (which would close the existing station location and relocate service to a new station south of Ashcake Road). North and south of town, all Build Alternatives would include construction of one additional track within the existing railroad right-of-way.
<b>5A</b>	Maintain Two Tracks Through Town	<b>SELECTED AS THE PREFERRED ALTERNATIVE</b> This alternative maintains the existing two-track corridor through downtown, with no improvements to the existing station location, and adds a third main track north and south of town, mostly within existing right-of-way.
<b>5A-Ashcake</b>	Maintain Two Tracks Through Town (Relocate Station to Ashcake)	This alternative is the same as 5A (the Preferred Alternative), but would relocate the station to Ashcake Road.
<b>5B</b>	Add One Track Through Town East of Existing	Within town, one track would be added adjacent to the east side of the existing tracks, which would require additional right-of-way and closure of an existing at-grade crossing within town. The existing station would be improved.

DRAFT EIS BUILD ALTERNATIVE		DESCRIPTION
<b>5B-Ashcake</b>	Add One Track Through Town East of Existing (Relocate Station to Ashcake)	This alternative is the same as 5B (as summarized on the previous page) but would relocate the station to Ashcake Road.
<b>5C</b>	Add Two-Track Western Bypass	A new two-track bypass west of Ashland would be constructed to serve freight and passenger trains that do not stop in town, which would require additional right-of-way. The existing rail corridor would be maintained in the city and the station would be improved.
<b>5C-Ashcake</b>	Add Two-Track Western Bypass (Relocate Station to Ashcake)	This alternative is the same as 5C (as summarized above), but would relocate the station to Ashcake Road.
<b>5D-Ashcake</b>	Three Tracks Centered Through Town (Add One Track, Relocate Station to Ashcake)	Within town, one track would be added with centering of all three tracks on the existing alignment. This would require additional right-of-way and preclude use of the existing station in town. The station would be relocated to Ashcake Road.
<b>AREA 6: RICHMOND:</b>		Eight Build Alternatives were evaluated in Area 6: five single-station options (which would consolidate all service to a single station location) and three two-station options (which would divide service between two stations). Use of the A-Line or S-Line varied by alternative, based primarily on the ability to serve station locations and optimize passenger and freight routes.
<b>6A</b>	Staples Mill Road Station Only	The existing Staples Mill Road Station would be improved to become the single passenger station to serve Richmond, and existing Main Street Station would be closed to service. One main track would be added along the RF&P Line (north of the city) and the A-Line (through the city).
<b>6B-A-Line</b>	Boulevard Station Only, A-Line	A new Boulevard Station would be constructed to become the single passenger station to serve Richmond, and existing Staples Mill Road and Main Street Stations would be closed to service. One main track would be added along the RF&P Line (north of the city) and the A-Line (through the city).
<b>6B-S-Line</b>	Boulevard Station Only, S-Line	This alternative is similar to 6B-A-Line (as summarized above), but would add one main track on the S-Line (through the city).
<b>6C</b>	Broad Street Station Only	A new Broad Street Station would be constructed to become the single passenger station to serve Richmond, and existing Staples Mill Road and Main Street Stations would be closed to service. One main track would be added along the RF&P Line (north of the city) and the A-Line (through the city).
<b>6D</b>	Main Street Station Only	The existing Main Street Station would be improved to become the single passenger station to serve Richmond, and existing Staples Mill Road Station would be closed to service. One main track would be added along the RF&P Line (north of the city) and the S-Line (through the city).
<b>6E</b>	Split Service, Staples Mill Road/ Main Street Stations	Both existing Staples Mill Road and Main Street Stations would be improved and remain operational, with the majority of intercity passenger trains stopping only at Staples Mill Road. One main track would be added along the RF&P Line (north of the city) and the A-Line (through the city).
<b>6F</b>	Full Service, Staples Mill Road/ Main Street Stations	<b>SELECTED AS THE PREFERRED ALTERNATIVE</b> This alternative improves the S-Line through Richmond and allows for all intercity passenger trains that stop in Richmond to serve both stations.
<b>6G</b>	Shared Service, Staples Mill Road/ Main Street Stations	Both existing Staples Mill Road and Main Street Stations would be improved and remain operational, with the majority of intercity passenger trains stopping at both stations, but some trains following the A-Line to bypass downtown and only serve Staples Mill Road Station. One main track would be added along the RF&P Line (north of the city) and the S-Line (through the city).

## HOW MUCH DOES THE PREFERRED ALTERNATIVE INFRASTRUCTURE COST?

Capital infrastructure costs represent the total cost associated with the design, management, land acquisition and construction of the infrastructure improvements, including communications and signaling systems associated with track and crossing improvements, of the DC2RVA Project. These costs include a 30 percent contingency for unknown conditions or unidentified infrastructure. Estimated costs are based on a conceptual (10 percent) level of design for the proposed improvements as described at the beginning of this section, and are based on projected unit costs for the year 2025 (i.e., the year that FRA and DRPT have assumed the Preferred Alternative would be in place for the purposes of the NEPA evaluation and planning). The total capital infrastructure cost for the Preferred Alternative is shown in the table below.



### CAPITAL INFRASTRUCTURE COSTS FOR THE PREFERRED ALTERNATIVE

Alternative Area	Preferred Alternative	Capital Cost (2025 \$millions)
<b>Area 1: Arlington</b> (Long Bridge Approach)	1B: Add Two Main Tracks on the West	\$42.4
<b>Area 2: Northern Virginia</b> (Long Bridge to Dahlgren Spur)	2A: Add Third or Fourth Main Track	\$1,778.9
<b>Area 3: Fredericksburg</b> (Dahlgren Spur to Crossroads)	3B: Add a Third Main Track Through the City	\$559.4
<b>Area 4: Central Virginia</b> (Crossroads to Doswell)	4A: Add a Third Main Track	\$1,143.7
<b>Area 5: Ashland</b> (Doswell to I-295)	5A: Maintain Two Tracks Through Town (No Station Improvements)	\$431.8
<b>Area 6: Richmond</b> (I-295 to Centralia)	6F: Staples Mill Road/Main Street Stations Full Service with S-Line Improvements	\$1,667.0
Total Capital Infrastructure Cost for the Preferred Alternative		\$5,623.2

## WHAT OTHER COSTS ARE ASSOCIATED WITH IMPLEMENTING THE PROJECT?

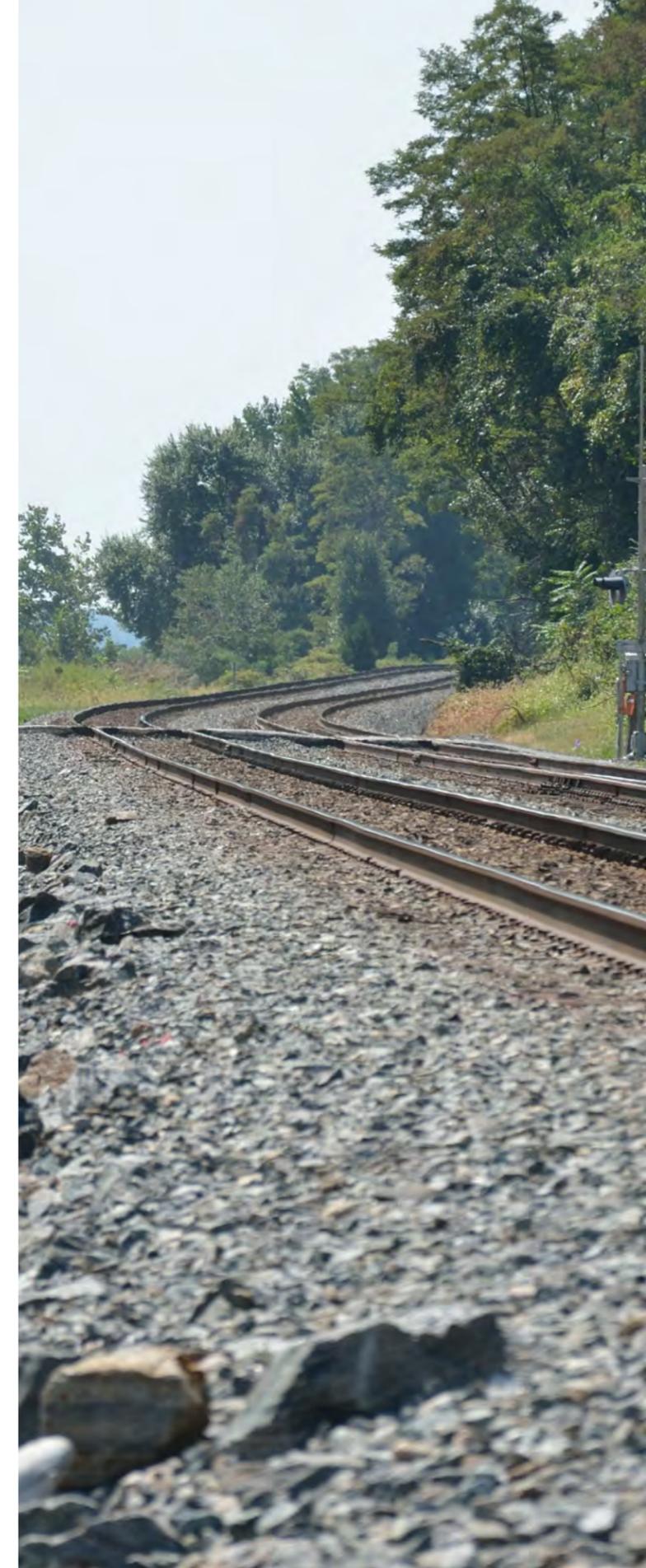
### OPERATIONS AND MAINTENANCE COSTS

The estimate of long-term operations and maintenance (O&M) costs include both train operations and infrastructure maintenance. Operations consists of labor costs, fuel and other supplies, and other factors required to keep the DC2RVA Project in service, whereas maintenance includes routine servicing of vehicles, maintenance of the tracks, signals, communications, and other systems needed to keep the system safe and reliable.

DRPT estimates that O&M costs for the Preferred Alternative in the Year 2045 would be \$100.3 million (in 2015 dollars). The 2045 Preferred Alternative conditions represent approximately a doubling of today's intercity passenger service and ridership. Accordingly, the O&M costs for the Preferred Alternative are also approximately double the costs of today's service (2015), recognizing that frequency and level of service are the key drivers of operating and maintenance costs.

### COSTS OF ROLLING STOCK

Rolling stock consists of the locomotives, passenger cars, and baggage cars that may be necessary to implement the new service as proposed by the Project. DRPT anticipates the cost for rolling stock to support this additional service would be shared by Amtrak and those states that share in the cost of the service; the cost would be apportioned through negotiated agreements at the time of service implementation and is not available at this time.





## C. ENVIRONMENTAL EFFECTS & MITIGATION

### WHAT IS INCLUDED IN THE ENVIRONMENTAL EVALUATION

The Environmental Consequences section of the Final EIS (Chapter 5) documents the potential effects on the human, physical, and natural environments that may result from construction and operation of the Preferred Alternative and indicates any changes in impacts since the Draft EIS evaluation. Impacts of the DC2RVA Project are associated with the addition of 9 new daily intercity passenger round trips (18 total trains per day) and the construction of new or modification to existing infrastructure. While the Project accommodates future planned growth in freight and VRE train frequencies, the Final EIS does not attempt to quantify additional impacts from potential future changes in their service; the actual growth of these services during the NEPA period of analysis may increase or decrease beyond planned levels due to external demands separate from the DC2RVA Project.

### HOW ARE IMPACTS ESTIMATED?

The environmental impacts for the Project are estimated directly from the design of the Preferred Alternative. Physical impacts to environmental resources are estimated within the Preferred Alternative's Limits of Disturbance (LOD), which are defined as the boundary within which all construction, materials storage, grading, landscaping, and related activities will occur.

- **Permanent effects** (as presented in the table on pages 33 to 35) include all areas where Project infrastructure will physically replace existing conditions and will not be restored after completion of construction.
- **Temporary effects** are areas required for construction of the Preferred Alternative, such as for construction access or staging and storage of equipment, that will temporarily modify the existing conditions, but will be restored after completion of construction.

In general, permanent LOD are 0 to 40 feet outside of existing CSXT railroad right-of-way, but extend to a maximum offset of 650 feet for proposed station improvements. Temporary LOD are generally 10 to 15 feet outside of the permanent LOD, but extend to a maximum offset of 50 feet.

While natural resources are generally affected by direct encroachments or physical effects of the Preferred Alternative permanent and temporary LOD above, the area of potential impact for the human environment, including viewsheds, noise, and air quality are typically larger to account for factors such as community sizes, geographical and political boundaries, and census boundaries, which have not changed since the Draft EIS evaluations.



### THE FOLLOWING PAGES PRESENT:

- A recap of the 23 environmental resources that are included in the evaluation
- A quantitative summary of permanent impacts for the Preferred Alternative for all environmental resources

Refer to Chapter 5 of the Final EIS for details of this summary, including temporary impacts as well as comparison to the environmental impacts that were reported in the Draft EIS.

# ENVIRONMENTAL RESOURCES RECAP

## NATURAL RESOURCES

Natural resources include water and biologic resources, such as rivers, streams, wetlands, floodplains, wildlife (including threatened and endangered species) and their habitats. The existing rail corridor is rich in natural resources, spanning more than 350 rivers and streams and over 50 major floodplains; nearly one-third of the lands within 500 feet of the rail bed are forested and contain nearly 500 acres of wetlands as well as potential habitat for more than a dozen species of threatened and endangered plants and animals.

## GEOLOGIC RESOURCES

Geologic resources include: topography, geology, and soils; mineral resources; and agricultural lands, which includes agricultural/ forestal districts and prime, unique, and state-wide important farmland soils. The landscape of the existing rail corridor is dominated by low rolling hills with sharper topography along streams and rivers. Approximately one-quarter of the acreage within 500 feet of the existing rail line consists of prime and unique farmland soils, and nearly 100 acres are located within designated agricultural/forestal districts. Additionally, well over half of the soils are identified as unsuitable for transportation-related construction.

## SOLID WASTES & HAZARDOUS MATERIALS

Hazardous materials include substances with the potential to cause harm to humans, animals, or the environment. Solid wastes and hazardous materials must be disposed of per regulations specific to those substances. Documented reports show that there are just over 1,000 hazardous material sites and facilities within 500 feet of the existing rail bed, the majority of which are petroleum facilities or locations of past spills.

## AIR QUALITY

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to establish air quality standards for pollutants considered harmful to public health and the environment. As part of the NEPA process, transportation projects are evaluated to determine their potential effect on air quality relative to the EPA standards. All cities and counties along the corridor are in compliance with applicable national air quality standards, except for the Northern Virginia area. A DC2RVA Project Purpose is to improve air quality by diverting automobile and other trips to rail, as well as increasing the reliability and efficiency of freight to divert movement of goods to rail.



## NOISE & VIBRATION

Noise is defined as sound that is undesirable because it interferes with communication and sleep, or is otherwise disturbing. Vibration is an oscillatory motion, and it can annoy humans, interfere with sensitive equipment and under severe conditions cause structural damage. Existing train noise and vibration measurements were taken at various residential and industrial sites along the corridor. Noise - and vibration-sensitive land uses and receptors were identified in accordance with the FRA and the Federal Transit Administration (FTA) land use categories.

## ENERGY

Intercity travel consumes energy regardless of the mode of travel: rail, air, automobile, or bus. Passenger rail is considered the most energy efficient of these modes on a Passenger Miles of Travel (PMT) basis. Additionally, rail is the most efficient ground transportation mode on a mile-per-ton basis.

## AESTHETIC & VISUAL ENVIRONMENT

The Project corridor exhibits a wide variety of visual elements ranging from undisturbed natural lands to densely developed urban areas. The rail line has long been a part of the corridor's landscape and includes many unique visual elements, such as bridges over major waterways, stations, and other railroad structures.

## COMMUNITY RESOURCES & ENVIRONMENTAL JUSTICE

This category includes land uses, public facilities, populations, neighborhoods, and community cohesion, as well as consideration of employment trends and effects. The Project corridor includes parts of 150 census tracts. While much of the land use surrounding the rail corridor is agricultural and forest, there are approximately 100 community facilities, including 35 religious facilities and 22 schools, within 1,000 feet of the edge of the rail line. Special attention is paid to Title VI of the Civil Rights Act of 1964, which prohibits discrimination in federal programs and funding. Executive Order 12898 on Environmental Justice directs federal agencies to identify and address disproportionately high and adverse human health and environmental effects on minority and low-income populations.



# ENVIRONMENTAL RESOURCES RECAP

## PARK RESOURCES

Park resources include federal, state, and locally owned parks, outdoor recreational areas, wildlife refuges, and recreational trails. Resources along the existing rail corridor include federal, state, regional, and local parks and recreational areas; trails; and wildlife refuges.

## CULTURAL RESOURCES

Traversing some of the most historic landscapes in the nation, the rail corridor includes a wide range of cultural resources such as historic battlefields, homes, cemeteries, industrial sites and districts, as well as archaeological remains. In all, 120 resources that are eligible for, or listed on, the National Register of Historic Places (NRHP) have been identified within the Preferred Alternative's Area of Potential Effect (APE) as defined by the National Historic Preservation Act (NHPA).

In accordance with Section 106 of the NHPA and the Advisory Council on Historic Preservation regulations, effects to cultural resources resulting in one of the following recommendations for each resource of:

- **No Effect:** There would be no effect, neither adverse nor beneficial, on historic properties.
- **No Adverse Effect:** There would be an effect, but it is determined that the effect would not compromise those characteristics that qualify the property for listing on the NRHP.
- **Adverse Effect:** There would be an effect that would compromise the physical and/or historic integrity of the resource. Archaeological sites may be "adversely affected" when they are threatened with unavoidable physical destruction or damage.

## SECTION 4(f) RESOURCES

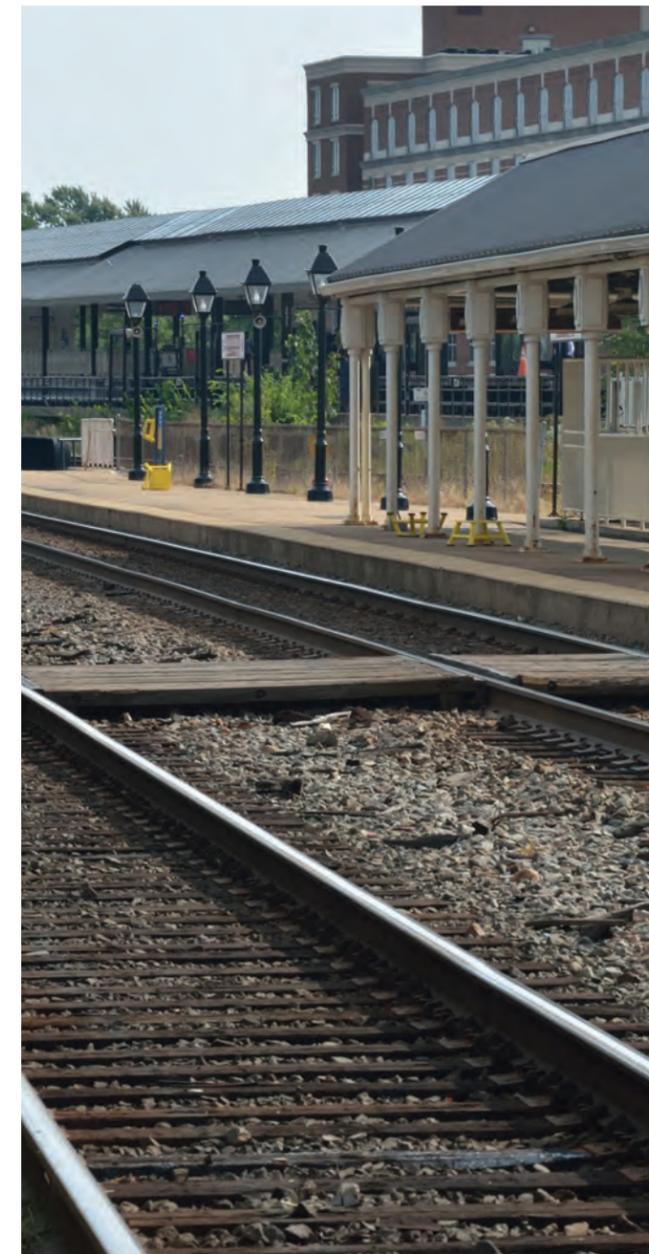
Section 4(f) of the U.S. Department of Transportation Act of 1966 (23 USC 138) applies to the use for transportation purposes of publicly-owned parks, recreation areas, and wildlife and waterfowl refuges; historic sites listed on or eligible for listing on the NRHP regardless of whether the site is in public or private ownership; and all archaeological sites listed on or eligible for inclusion on the NRHP, excluding those for which there is minimal value to preservation in place as determined by the FRA in consultation with the Virginia Department of Historic Resources (DHR). Section 4(f) applies to these protected resources when a "use" occurs as a result of the proposed action: permanent incorporation; temporary occupancy; or constructive use. Further, a de minimis use may be determined if use of a Section 4(f) resource is generally minor in nature as to not elevate to one of the three primary uses.



## TRANSPORTATION FACILITIES

Transportation facilities include the roadway and rail networks between Washington, D.C. and Richmond, VA, as well as where the two modes overlap, such as highway-rail crossings and access to train stations.

The existing rail corridor serves eight intercity passenger rail stations and crosses more than 200 public and private roadways, the majority of which are grade-separated; 55 are public at-grade crossings.



The following resources are addressed in qualitative discussions in the Draft and Final EIS:



**Safety & Security:** Safety considerations along the corridor include the operations of the freight, commuter and intercity passenger services operating on the corridor today, as well as the projected future increases. Safety is also a major consideration for vehicular operations at public and private at-grade crossings. Security considerations include existing stations and rail yards, as well as along the railroad right-of-way.



**Public Health & Safety:** FRA is the primary authorized agency for railway safety. FRA administers safety regulations over all aspects of rail operations along the existing corridor.



**Construction Impacts:** Construction impacts associated with the proposed action are by definition those effects that are temporary or short-term in nature and that occur only during the period of construction.



**Indirect & Cumulative Effects:** The corridor connects several of the most rapidly developing regions in Virginia – where residential, commercial, industrial, and other transportation projects are constantly emerging. Indirect effects are those effects, positive or negative, that are caused by an action and occur later in time or are farther removed in distance, but are still reasonably foreseeable, such as those related to induced changes in the pattern of land use, population density or growth rate, and related effects on natural resources. Cumulative effects are defined as the effects, positive or negative, on the environment which result from the incremental effect of the action when added to other past, present, and reasonable foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time.



# ENVIRONMENTAL IMPACTS SUMMARY

See end of table for notes

Environmental Resource	Preferred Alternative						Total for the Preferred Alternative		
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6			
	1A	2A	3B	4A	5A	6F			
	Arlington (Long Bridge Approach) CFP 110 - 109.3	Northern Virginia CFP 109.3 - 62	Fredericksburg (Dahlgren Spur to Crossroads) CFP 62 - 48	Central Virginia (Crossroads to Doswell) CFP 48 - 19	Ashland (Doswell to I-295) CFP 19 - 9	Richmond (I-295 to Centralia) CFP 9 - A 011			
Additional ROW (Acres)	0.03	53.77	14.02	1.27	23.45	56.58	149.12		
Natural Resources	Wetlands (Acres)	0	5.94	4.2	8.8	0.98	4.27	24.19	
	100-Year Floodplains (Acres)	0.1	16.1	9.9	17.2	6.6	44.1	94.0	
	Streams & River Crossings (Linear Feet)	0	8,031	1,271	3,616	6,978	10,061	29,957	
	Threatened & Endangered Species & Habitat	No	Yes	Yes	Yes	Yes	Yes	-	
Geologic Resources	Construction-Limiting Soils	Unknown / Not Rated	Yes	Yes	Yes	Yes	Yes	-	
	Prime Farmland	Prime Soils (Acres)	0	27.65	24.62	56.93	15.8	25.4	150.4
		NRCS Form 106 Score (Points) <sup>1</sup>	0	66	80	93	51	19	-
	Agricultural & Forestal Districts (Acres)	0	0	0	0	0	0	0	
Hazardous Materials	Superfund / CERCLA Sites	0	0	0	0	0	0	0	
	Recorded Release & Potential Contamination Sites	0	5	3	0	2	25	35	
	HAZMAT Facilities	0	5	4	0	0	6	15	
	Petroleum Storage Tanks	0	1	3	0	3	7	14	
Air Quality <sup>2</sup>	CO2 Emissions (Tons per Year) Change Compared to No Build						-6,518	-6,518	
Noise <sup>3</sup>	Impacted Noise Receptors	Category 1 Moderate	0	0	0	0	1	1	
		Category 1 Severe	0	0	0	0	0	0	
		Category 2 Moderate	0	548	67	51	135	416	1,217
		Category 2 Severe	0	99	8	18	14	15	154
		Category 3 Moderate	0	6	1	1	1	7	16
		Category 3 Severe	0	0	0	0	4	0	4
		Total	0	653	76	70	154	439	1,392
Vibration <sup>3</sup>	Impacted Vibration Receptors	Category 1	0	0	0	0	0	0	
		Category 2	0	15	0	2	25	8	50
		Category 3	0	0	0	0	1	0	1
		Total	0	15	0	2	26	8	51

Environmental Resource	Preferred Alternative						Total for the Preferred Alternative		
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6			
	1A	2A	3B	4A	5A	6F			
	Arlington (Long Bridge Approach) CFP 110 - 109.3	Northern Virginia CFP 109.3 - 62	Fredericksburg (Dahlgren Spur to Crossroads) CFP 62 - 48	Central Virginia (Crossroads to Doswell) CFP 48 - 19	Ashland (Doswell to I-295) CFP 19 - 9	Richmond (I-295 to Centralia) CFP 9 - A 011			
Energy <sup>4</sup>	Energy Consumption (Billions of BTUs) Change Compared to No Build						-293		
Aesthetics & Visual Environment	Visual Impact Rating (Low, Moderate, or High)						-		
Community & Environmental Justice	Commercial Relocations	0	0	1	0	2	11	14	
	Residential Relocations	0	2	0	0	0	3	5	
	Compatible with Comprehensive Land Use Plans (Yes / No)	Yes	Yes	Yes	Yes	Yes	Yes	-	
	Environmental Justice Census Tracts with Residential Relocations	0	0	0	0	0	0	0	
Park Resources	Number / Acres						1 / 0.21		
Cultural Resources	Effects on Archaeological Sites	Adverse Effect	0	1	4	0	0	3	8
		No Adverse Effect	0	0	2	0	0	3	5 <sup>4</sup>
		No Effect	0	0	0	0	0	0	0
	Effects on Buildings, Districts, Structures, &	Adverse Effect	0	2	2	2	3	3	13 <sup>5</sup>
		No Adverse Effect	2	5	8	8	2	29	54 <sup>4</sup>
		No Effect	0	3	4	3	11	9	30
Effects on Battlefields	Adverse Effect	0	0	0	0	0	0	0	
	No Adverse Effect	0	0	4	1	0	5	10	
	No Effect	0	0	0	0	0	0	0	
Transportation	Proposed Public At-Grade Crossing Improvements	Grade Separate <sup>6</sup>	0	0	1	0	2	4	7
		Closure	0	1	0	1	0	5	7
		Four-Quad Gates	0	1	2	4	3	3	13
		Median Treatment	0	0	1	2	1	4	8
	No Action	0	2	0	0	5	1	8	
New Public Crossings	0	0	0	0	0	0	0		

# ENVIRONMENTAL IMPACTS SUMMARY

See end of table for notes

Environmental Resource		Preferred Alternative						Total for the Preferred Alternative	
		Area 1	Area 2	Area 3	Area 4	Area 5	Area 6		
		<b>1A</b> Arlington (Long Bridge Approach) CFP 110 - 109.3	<b>2A</b> Northern Virginia CFP 109.3 - 62	<b>3B</b> Fredericksburg (Dahlgren Spur to Crossroads) CFP 62 - 48	<b>4A</b> Central Virginia (Crossroads to Doswell) CFP 48 - 19	<b>5A</b> Ashland (Doswell to I-295) CFP 19 - 9	<b>6F</b> Richmond (I-295 to Centralia) CFP 9 - A 011		
Transportation	Proposed Private At-Grade Crossing Improvements	Closure	0	0	0	0	0	0	
		Four-Quad Gates	0	0	0	0	0	2	
		Locking Gate	0	0	0	10	0	2	12
		No Action	0	5	0	0	0	0	5
	New Private Crossings	0	0	0	0	0	0	0	
	Roadway Travel Patterns: % Change in Daily Traffic, Adjacent Roadways at Stations <sup>7</sup>	-	<1%	7-8%	-	<1%	1-2%	-	
	Total Daily Delay (hours) / % Intercity Passenger Trains of Total	-	23.01 / 13%	6.59 / 13%	3.35 / 13%	56.33 / 11%	64.22 / 10%	153.50 / 11%	

Notes: Permanent effects include all areas where Project infrastructure will physically replace existing conditions. Temporary effects are areas required for construction of the Preferred Alternative, such as for staging or storage of equipment. Only permanent effects are summarized in this table. Refer to the detailed mapbook of the Preferred Alternative, which show the permanent and temporary LOD throughout the 123-mile Project corridor.

- Natural Resources Conservation Service (NRCS) treated each alternative area separately; therefore, there is no "cumulative" score for the Project corridor.
- "Change" shown compares 2045 Preferred Alternative to 2045 No Build conditions. Air Quality and Energy are analyzed corridor-wide based on the station alternative as selected in Richmond (6F), so only a single value is shown in this table.
- Noise and Vibration categories defined in Section 5.7 of the Final EIS.
- Fredericksburg & Spotsylvania County Battlefields National Military Park & Cemetery, Lee Drive (111-0147) is both an above and below ground resource, and it is counted in the table twice in the "No Adverse Effect" column, as both an Archaeological Resource and a Historic Resource.
- The historic RF&P Railroad (500-0001) traverses the Project corridor from the Potomac River on the north to Main Street Station in Richmond on the south; therefore, one resource has been added to the "Adverse Effect" column for "Effects on Buildings, Districts, Structures, & Objects" since it does not fall in a single Alternative Area.
- Some existing grade-separated crossings will be widened/replaced as part of the Project; these crossings are separate from the proposed new grade separations of existing at-grade crossings that are quantified in this table.
- "Change" shown compares 2025 Preferred Alternative to 2025 No Build conditions.



## HOW HAVE THE ENVIRONMENTAL IMPACTS CHANGED SINCE THE DRAFT EIS?

Between the Draft and Final EIS, there have been design refinements to the conceptual engineering of the Preferred Alternative – and therefore changes to the LOD and associated environmental impacts. The design changes are documented in Chapter 4 of the Final EIS and are a result of either responses to public and/or agency comments or from new/changed data since the publication of the Draft EIS.

For many resources, the changes in LOD resulted in a reduction from what DRPT initially estimated in the Draft EIS for potential impacts. Additionally, for many resources, there are no noteworthy changes to the conceptual engineering that modified impacts; rather, narrow linear increases and decreases in the permanent and temporary LOD resulted in incremental changes in impacts over the length of the 123-mile corridor compared to those reported in the Draft EIS.

## WHAT ARE THE DETERMINATIONS OF THE SECTION 106 PROCESS FOR HISTORIC PROPERTIES?

DRPT identified 120 historic properties within the APE, defined as any resource that is eligible for, assumed eligible for, or listed on the NRHP: 13 archaeological sites, 96 above ground resources, one resource with an above ground and below ground component, and 10 battlefields. DHR has reviewed and commented on the technical reports, and they have concurred with resource eligibility and effect determinations.

FRA determined that the Preferred Alternative for the DC2RVA Project will have:

- **No adverse effect** on 69 historic properties
- **No effect** on 30 historic properties
- **Adverse effect** on 21 historic properties
  - Direct impact on 8 resources (all archaeological resources)
  - Both a direct and indirect impact on 12 historic properties (all architectural resources)
  - Indirect/cumulative impact on 1 resource (an architectural resource)

## WHAT IS THE FINAL SECTION 4(f) EVALUATION? (PARKS, RECREATIONAL AREAS, WILDLIFE/WATERFOWL REFUGES, AND HISTORIC PROPERTIES)

There are 12 public parks/recreation areas and 1 wildlife refuge located within the LOD of the Preferred Alternative. Of those, all 12 are located within the temporary LOD and 1 is also located in the permanent LOD (Walker's Creek Retention Basin Park in Richmond, south of the James River). FRA has determined that all permanent impacts to parks and recreation areas will be *de minimis* and all temporary impacts to parks and recreation areas will not result in a Section 4(f) use.

Of the 21 historic properties determined to be adversely affected by the Project, FRA anticipates that the Preferred Alternative will result in a Section 4(f) use of 17 resources (permanent incorporation) and a *de minimis* use or no use of 4 resources. Of the remaining Section 106 resources in the Project APE, FRA determined that the Project will have no use or a *de minimis* use.



## HOW ARE THE EFFECTS TO THE ENVIRONMENT REDUCED OR MITIGATED?

Effects to the natural and built environments were avoided or minimized where feasible as part of the conceptual engineering for the Preferred Alternative. Where negative effects cannot be avoided or minimized, or when no other reasonable or feasible alternative is available, the effects are mitigated where required. Mitigation can be accomplished through repairing, rehabilitating, or restoring the affected environment. Sometimes effects are compensated for by replacing or providing substitute resources, such as purchasing wetland credits in an approved wetland bank.

DRPT has identified specific commitments beyond the level of best management practices to be implemented during future phases of design and construction. These commitments are the result of agency consultations, comments on the Draft EIS, and regulatory requirements for the Project and are provided in the Project Commitments section of this Final EIS. The list to the right is intended as a high-level summary.



### CONTINUED COORDINATION

DRPT will continue to coordinate with:

- Federal and state agencies, affected localities, the general public, and other stakeholders during the future phases of design in accordance with all applicable federal and state laws and regulations.
- Federal and state agencies to ensure impacts to habitat, wildlife, surface waters, wetlands, and parks are avoided to the extent practicable during design and construction.
- Appropriate regulatory agencies for all applications, permits, and approvals required for the design and construction of the Project.
- Railroad operators to maintain existing and proposed rail and station operations in the Project corridor.
- Local governments for proposed non-rail infrastructure improvements along the Project corridor.

### ENVIRONMENTAL PROTECTION

DRPT will continue to avoid and minimize impacts to environmental resources during design and construction, and will follow all applicable recommendations and requirements of federal and/or state agencies with jurisdiction over environmental resources, including: wetlands; floodplains and stormwater management; wildlife, habitat, and trees; hazardous materials; air quality; noise and vibration; parks, recreation areas, and wildlife refuges; and visual and aesthetics. DRPT will develop detailed mitigations of unavoidable environmental impacts, such as noise and vibration impacts, in coordination with public and agency stakeholders during future design phases of the Project.

### CULTURAL RESOURCES / SECTION 106

DRPT will execute a Memorandum of Agreement as part of the Section 106 process for historic properties to provide specific mitigations to adversely affected resources, in coordination with the appropriate Section 106 Consulting Parties. In addition, mitigations associated with one resource (the Grave Yard for Free People of Color and Slaves, site 44HE1203) made outside of the Section 106 process but as part of the NEPA process are included as Project commitments.

### DESIGN REQUIREMENTS

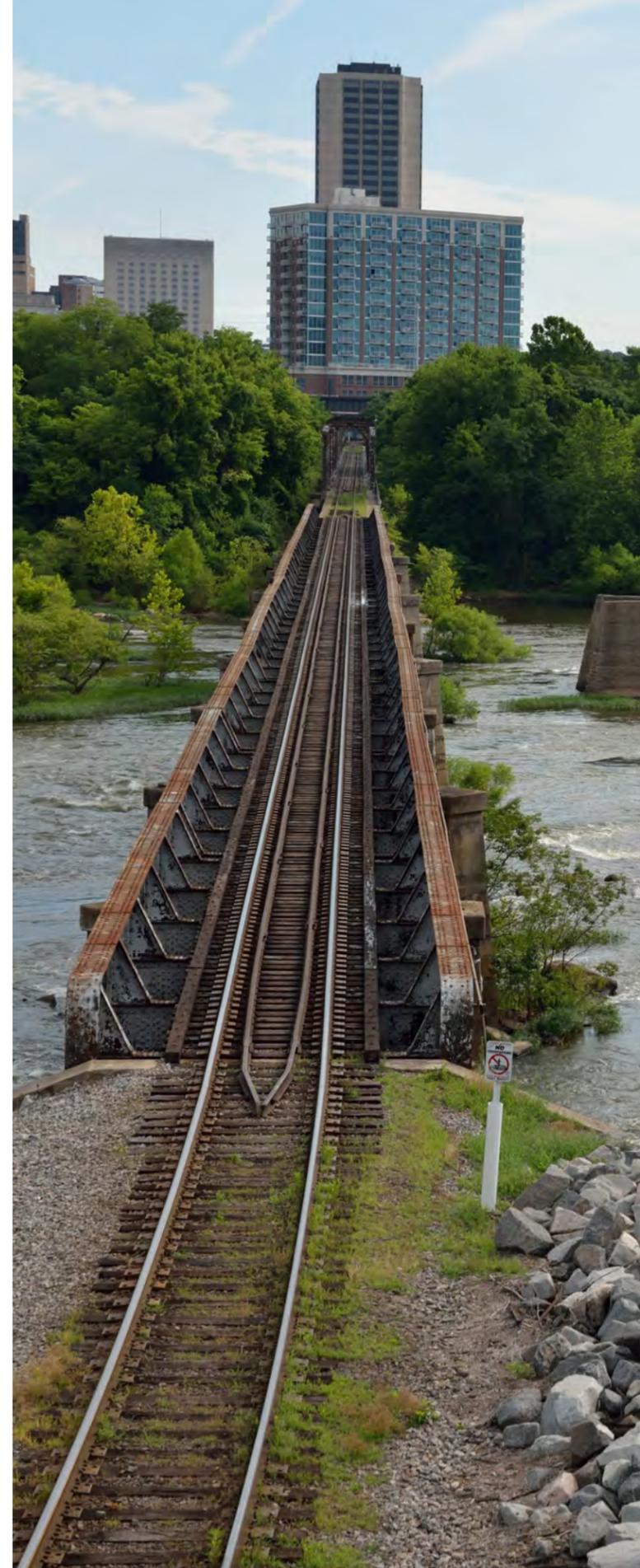
DRPT will develop plans to minimize construction impacts as part of future design phases of the Project; access to properties will be maintained during construction and DRPT will coordinate with CSXT and property owners to review or confirm means of access. DRPT will address and improve, as necessary, bike/pedestrian safety warning devices at all public crossings along the DC2RVA rail corridor, in keeping with the Project's Basis of Design, ADA requirements, and applicable FRA, Amtrak, CSXT, and VDOT safety standards. The final design of major water crossings will at a minimum, match the existing horizontal and vertical openings of the existing crossings. DRPT will coordinate with local utilities and utility owners to identify and mitigate potential impacts.

### RIGHT-OF-WAY ACQUISITION

Details of the construction easements and restoration plans will be developed in coordination with public and private landowners during future phases of design. The acquisition of right-of-way and the relocation of displaced persons and businesses will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601), and 24 Virginia Administrative Code (VAC) 30-41.

### SUPPLEMENTAL ENVIRONMENTAL CONSIDERATIONS

If the Project's final design or impacts exceed the NEPA commitments established in this Final EIS and ROD, then DRPT will re-evaluate the design and/or the NEPA documentation. Potential impacts to environmental resources as identified in this Final EIS will be reconfirmed as part of future phases of design and permitting.



# D. FUTURE STEPS

## WHAT ARE THE NEXT STEPS IN THE NEPA PROCESS?

The Record of Decision (ROD) is the final step in the EIS process and signifies approval of the proposed action. The FRA will issue the ROD, which documents the Selected Alternative: that it best satisfies the Purpose and Need; poses the least environmental impacts to the natural and human environments to the extent practicable; is in compliance with NEPA and other applicable requirements; and may be advanced for final design and construction. The ROD also commits to the measures to mitigate unavoidable environmental impacts. Issuance of the ROD allows the DC2RVA Project to proceed to the next steps, as outlined below.



## WHAT HAPPENS AFTER THE NEPA PROCESS?

The anticipated dates provided on the right are intended for planning purposes and reflect what was assumed for the purposes of this environmental evaluation. Actual dates for future Project development are dependent on obtaining a ROD, identifying and securing construction funding, completing Project design, and finalizing all necessary approvals and permits, including agreements with Amtrak and CSXT. Further, FRA and DRPT understand that funding for construction—as well as the timelines of separate but related projects—may require that the DC2RVA Project be constructed incrementally over the 20-year planning horizon from 2025 to 2045.

Project Development Event	Anticipated Date
Record of Decision	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) <sup>1</sup>	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)

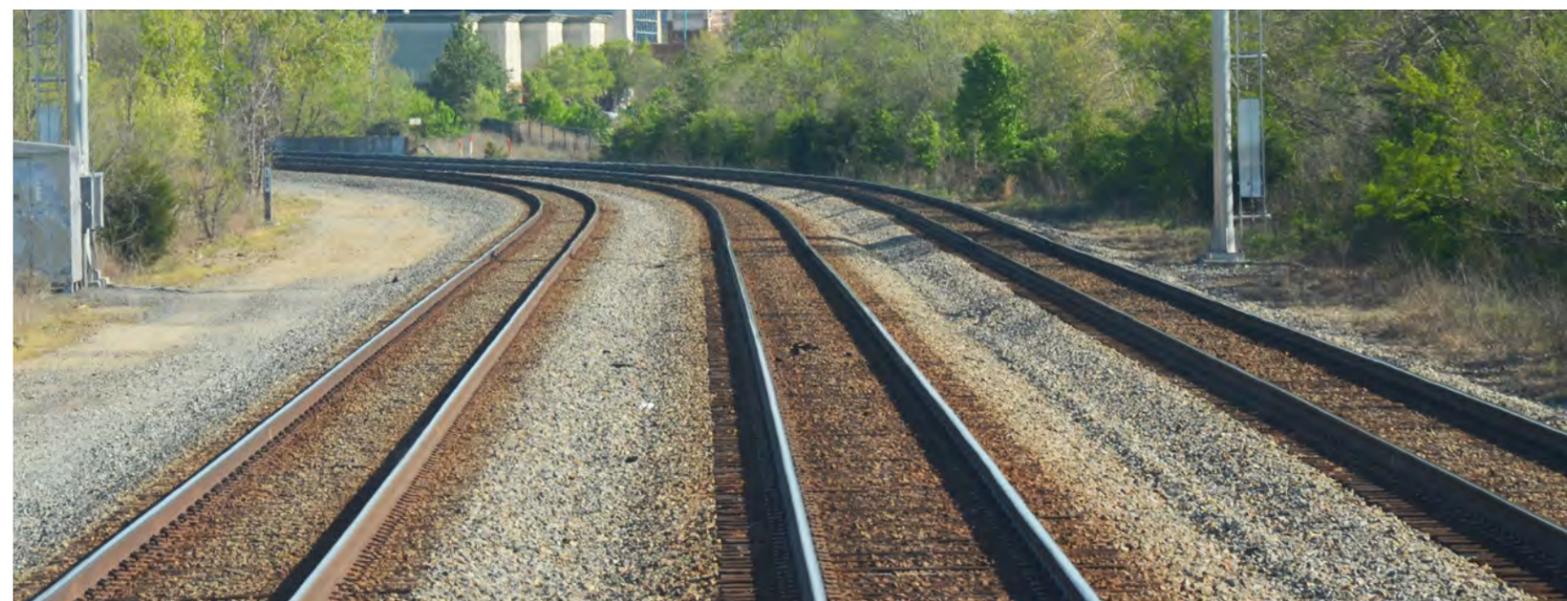
Note: 1. The Commonwealth of Virginia received a \$165 million FASTLANE grant award in 2016, leveraging additional public and private funding to implement a \$1.4 billion program of highway and rail projects along the I-95 corridor (the Atlantic Gateway program). As part of this program, DRPT proposes expediting design, funding, and construction of approximately six 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 of the Final EIS for more details on the project, which includes two new crossovers in Caroline County as well.

## WHICH PART OF THE PROJECT WILL BE BUILT FIRST?

Construction of the infrastructure improvements that are part of the DC2RVA Preferred Alternative is not currently funded (other than the AF – RO Fourth Track project noted previously), 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 Project, Long Bridge project, 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 build-out. Concurrent with the Final EIS, DRPT is providing the Corridor Service Development Plan for the Project which details DRPT’s approach to delivering the Project infrastructure and service improvements and is a key step toward meeting federal funding eligibility.



## WHAT OTHER RAIL PROJECTS ARE LINKED TO THE DC2RVA PROJECT?

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 R2R project included improvements/service between Raleigh, NC and Richmond, VA, and overlaps the DC2RVA Project between Main Street Station and Centralia, VA. The SEHSR 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 R2HR project included improvements/service between Norfolk/Newport News, VA and Richmond, VA, and overlaps the DC2RVA Project between Main Street Station and Centralia, VA. The SEHSR R2R 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.

## WHAT PERMITS AND REGULATORY APPROVALS ARE REQUIRED?

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.

The following is a list of permits that may be required for this DC2RVA Project. Final determination of permit applicability lies with the regulatory agencies.



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 Alteration to Civil Works Permit	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 (NPDES) Permit	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



### HOW CAN I LEARN MORE?

For additional information, please visit the Project website [www.DC2RVARail.com](http://www.DC2RVARail.com)

### CONTACT INFORMATION

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U.S. Department of Transportation  
**Federal Railroad Administration**

**DRPT**

Virginia Department of Rail and Public Transportation