

July 2022

# Development Strategy for High-Performance Rail in the Southeast

*Technical Report*



 **SOUTHEAST**  
CORRIDOR

# Table of Contents

Table of Contents.....	i
List of Figures.....	ii
List of Tables.....	iii
Acronyms .....	iv
Executive Summary.....	1
1.0 Background.....	7
1.1 Description of the Southeast Corridor .....	7
1.2 Prior Regional Summaries .....	9
1.3 Defining the High-Performance Rail Network.....	25
2.0 Status of the Corridor.....	27
2.1 Current Plans on the High-Performance Rail Network .....	29
2.2 Regional and Emerging Corridor Development Plans .....	34
3.0 Future Service and Infrastructure .....	39
3.1 Lessons Learned from the Transforming Rail in Virginia Initiative.....	39
3.2 SEC Existing and Future Service .....	42
3.3 Required Infrastructure Improvements.....	47
4.0 Right-of-Way Acquisition.....	50
4.1 SEC ROW Acquisition Needs .....	50
4.2 Rail Versus Highway ROW Capacity .....	56
5.0 Delivering the Network.....	57
5.1 Corridor Phasing.....	57
5.2 Available Funding.....	60
6.0 Conclusion .....	70

## List of Figures

Figure 1: Existing Population Within 10 Miles of Existing and Proposed Station Locations (2020) .....	8
Figure 2: Existing Jobs within 10 Miles of Existing and Proposed Station Locations (2020) .....	9
Figure 3: Southeast Regional Network Vision from Southeast Regional Rail Plan .....	10
Figure 4: High Performance Rail Network Scenarios from SEC Economic Benefits Study .....	12
Figure 5: Economic Benefits Study Annual Ridership Estimates 2030 to 2055 (thousands) .....	13
Figure 6: Economic Benefits of High-Performance Rail in the Southeast .....	15
Figure 7: Amtrak's Southeastern Corridor Plan (2021) .....	17
Figure 8: Transforming Rail in Virginia Improvements (2021) .....	19
Figure 9: Existing Virginia Rail Services (2018) .....	20
Figure 10: Existing and Potential Virginia Passenger Routes (2018) .....	21
Figure 11: North Carolina Existing Passenger Train Service (2015) .....	22
Figure 12: Amtrak Routes and Stations within 30 Miles of Georgia (2021) .....	24
Figure 13: SEC High-Performance Rail Network .....	26
Figure 14: High-Performance Network Current Status .....	27
Figure 15: Max Speeds of High-Performance Network .....	28
Figure 16: Greenfield Corridor Alternative (2021) .....	31
Figure 17: Atlanta to Chattanooga Preferred Alternative (2017) .....	32
Figure 18: Atlanta to Jacksonville Potential Alignments (2012) .....	33
Figure 19: Max Speeds of Additional Regional Segments .....	34
Figure 20: Max Speeds on Emerging Segments .....	35
Figure 21: Richmond-Hampton Roads Corridor (2012) .....	37
Figure 22: All Aboard Florida Intercity Passenger Rail Project (2015) .....	38
Figure 23: Existing Service on the Southeast Corridor .....	45
Figure 24: Future Service on the Southeast Corridor .....	46
Figure 25: Projects Along the High-Performance Network with Defined Alignment .....	47
Figure 26: Amtrak Crewing Locations .....	49
Figure 27: SEC Corridor Regionwide ROW Map .....	51
Figure 28: Virginia ROW Ownership Map .....	53
Figure 29: North Carolina ROW Ownership Map .....	54
Figure 30: South Carolina, Georgia, Tennessee ROW Ownership Map .....	55
Figure 31: Corridor Phasing for High-Performance Network .....	58

## List of Tables

Table 1-1: SE Study Corridor Segment Types .....	11
Table 1-2: Economic Benefits Study Assumed Operational Years by Segment.....	14
Table 5-1: High-Performance Network Groupings.....	57

## Acronyms

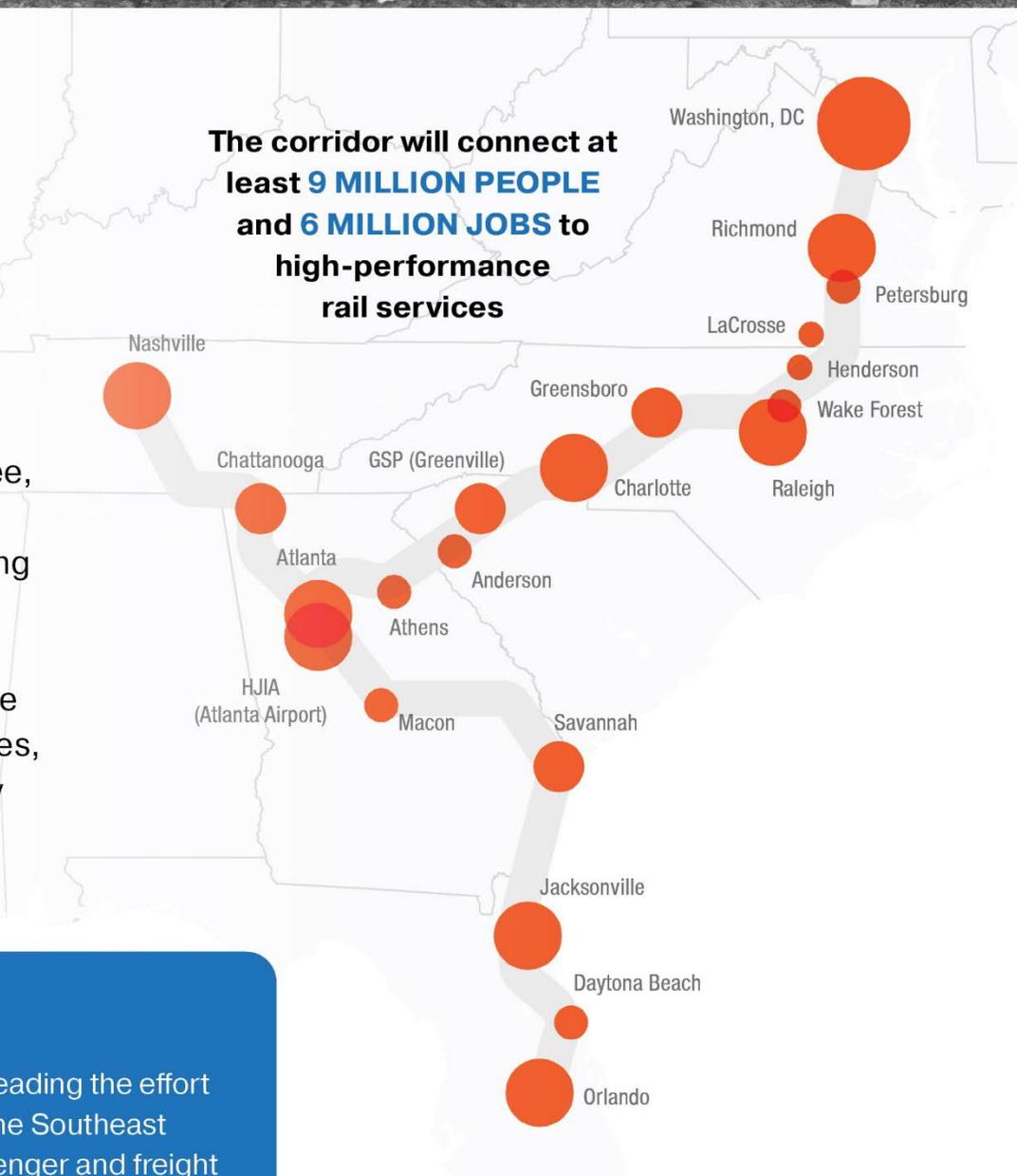
BUILD	Better Utilizing Investments to Leverage Development	NCRR	North Carolina Railroad
CIG	Capital Investment Grants	NEC	Northeast Corridor
CRISI	Consolidated Rail Infrastructure and Safety Improvement Program	NEPA	National Environmental Policy Act
CSRP	California State Rail Plan 2040	NS	Norfolk Southern
CSXT	CSX Transportation Railroad	PIP	Piedmont Improvement Program
DC2RVA	Washington DC to Richmond High-Speed Rail	PRCIP	Passenger Rail Corridor Investment Plan
DRPT	Virginia Department of Rail and Public Transportation	R2R	Raleigh to Richmond High-Speed Rail
EIS	Environmental Impact Statement	RAISE	Rebuilding American Infrastructure with Sustainability and Equity
FAST	Fixing America's Surface Transportation	ROD	Record of Decision
FEIS	Final Environmental Impact Statement	ROW	Right-of-way
FDOT	Florida Department of Transportation	SDP	Service Development Plan
FRA	Federal Railroad Administration	SEC	Southeast Corridor
FY	Fiscal year	SEHSR	Southeast High-Speed Rail
GDOT	Georgia Department of Transportation	SRP	State Rail Plan
HSGT	Atlanta to Chattanooga High-Speed Ground Transportation	TDOT	Tennessee Department of Transportation
HSR	High-speed rail	TIGER	Transportation Investment Generating Economic Recovery
HPR	High-performance rail	UPRR	Union Pacific Railroad
IJA	Infrastructure Investment and Jobs Act	USDOT	United States Department of Transportation
MPH	Miles per hour	VPRA	Virginia Passenger Rail Authority
NCDOT	North Carolina Department of Transportation	VRE	Virginia Railway Express

# SEC Development Strategy: EXECUTIVE SUMMARY

## What is the Southeast Corridor?

The Southeast Corridor (SEC) extends from Washington, DC, through Virginia, North Carolina, South Carolina, Tennessee, and Georgia, to Florida. Current plans for improving passenger rail along this corridor will connect the major urban centers of the southeastern United States, providing greater mobility across the region and improved access to jobs.

The corridor will connect at least **9 MILLION PEOPLE** and **6 MILLION JOBS** to high-performance rail services



## Who is the SEC?

The **SEC Commission** is leading the effort to connect states across the Southeast megaregion through passenger and freight rail. Working closely with the Federal Railroad Administration (FRA), the Commission has brought together all of the SEC states and the District of Columbia to develop a common vision for high-performance rail throughout the corridor.



# Why is it critical to the region?

Improving passenger rail services along the SEC will have profound benefits to the entire region, connecting millions of people to new destinations and job opportunities. A recent study of economic benefits and impacts showed that over 30 years of construction and operations, ***the benefits of SEC high-performance rail are more than double the investment costs.***



## Generate Economic Opportunities

**\$35.9 billion in increased production and spending, including more than 94,000 construction-related jobs and 45,000 new regional jobs**



## Provide Safe Travel Options

**\$1.3 billion in avoided accidents, including 8 fatal accidents avoided per year**



## Enhance Mobility

**\$1.1 billion in passenger time saved**



## Promote Desirable Communities

**\$3.3 billion increase in property values**



## Reduce Emissions

**\$47 million saved emissions, including 15 million metric tons of carbon dioxide**



## Improve Freight Resiliency

**\$153 million saved from reduced freight rail delays**

# How will the SEC deliver high-performance rail?

The SEC Development Strategy provides a long-term path forward for growth and improvement of intercity passenger rail service in the Southeast, covering the next 30 to 40 years of development. This strategy concentrates on connecting the core of the network to provide high-performance rail services between major metropolitan areas and connections to state-supported services throughout the Southeast.

Nearly 1,300 miles of rail right-of-way improvements are needed to connect these major urban centers. Therefore, the SEC will be phasing in segments of the corridor based on the readiness of current segments and the priority of providing interstate connections.

The specific infrastructure needs of each future segment will be determined through a “service first” approach to planning, where the intercity and interstate markets determine what rail infrastructure is appropriate to build.



# How fast will high-performance rail services go?

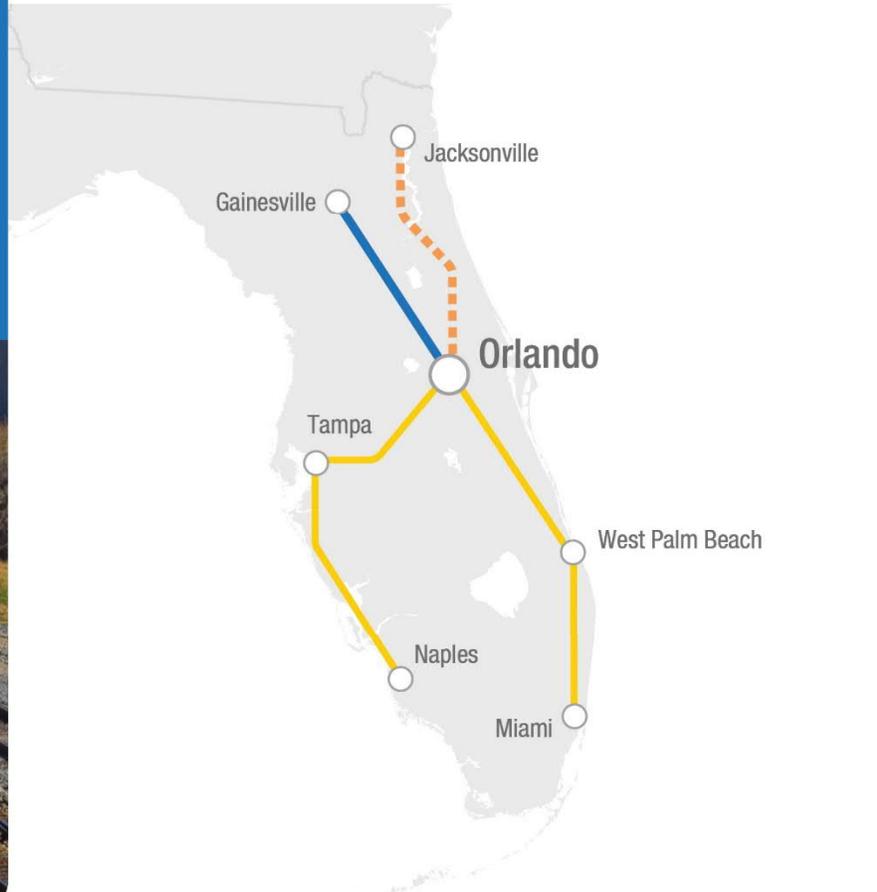
Initial speeds of service will vary based on the infrastructure and alignments planned in each segment of the SEC.



# State-level Initiatives

While the SEC Commission is focused on progressing interstate connections along the core of the network, individual states are also advancing new intrastate passenger rail corridors to serve their growing passenger rail markets.

Through the Transforming Rail in Virginia program, the Virginia Passenger Rail Authority is increasing service and progressing plans for improved intercity connections between Washington DC and the New River Valley, and Washington DC and the Hampton Roads region. North Carolina also has several passenger rail studies underway to evaluate services connecting Asheville and Salisbury to the SEC and Wilmington to Raleigh. At the same time, Florida is considering further development of services between Orlando and Tampa, and Orlando and Miami.



## Where are high-performance rail services planned?

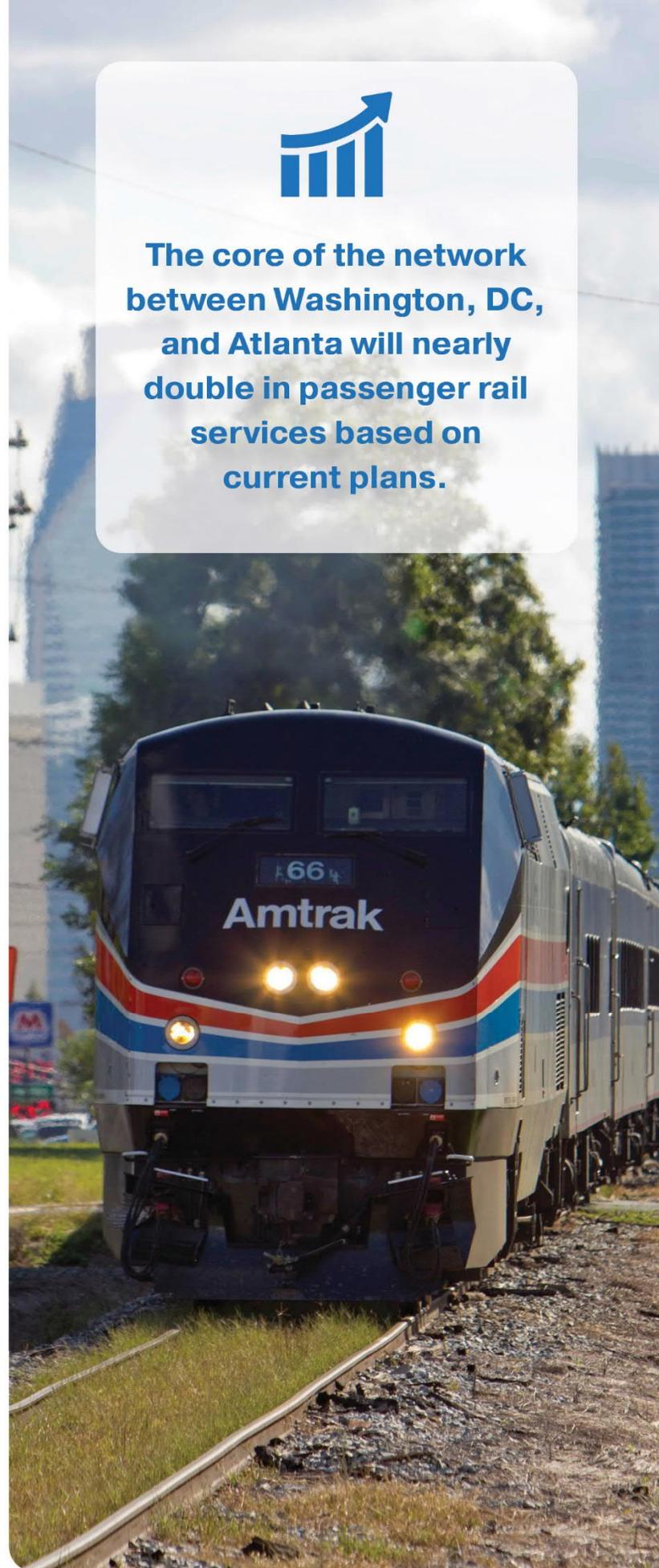
The SEC Development Strategy envisions an exponential increase in passenger rail services in the region from 2022 to 2045. These services will increase connections both within states, based on the increases planned in Virginia, North Carolina, and Florida, and across the region.

Some intercity connections will more than double. For example, Charlotte to Atlanta will go from one train per day to nearly one train per hour under the current plans. The next step for the corridor is detailed service planning to determine timing of new trains to meet market demand and continued efforts to progress the readiness of segments beyond the initial phases.

*Through collaboration and coordination with industry partners, the SEC Commission has come together to provide a common vision of high-performance passenger rail development in the Southeast. This vision aligns with the goals and delivers on the promise of the Bipartisan Infrastructure Law by improving mobility and safety for over 9 million Americans while creating jobs and improving environmental outcomes.*



**The core of the network between Washington, DC, and Atlanta will nearly double in passenger rail services based on current plans.**



## 1.0 Background

The Southeast Corridor (SEC) Commission is leading the effort to connect states across the Southeast megaregion through passenger and freight rail. This Development Strategy serves as a high-level roadmap to achieving improved passenger rail service in the region, based on the status of current plans and programs. It also details some key challenges to delivering and integrating future services and provides recommendations for methods to successfully progress the vision of the SEC. The purpose of this roadmap is to provide a long-term path forward for the growth and improvement of intercity passenger rail service in the Southeast, covering the next 30 to 40 years of development. Therefore, the Development Strategy does not directly address short-term issues facing state agencies today such as the ridership impacts of the COVID-19 pandemic.

### 1.1 Description of the Southeast Corridor

The SEC extends from Washington, DC, through Virginia, North Carolina, South Carolina, Tennessee, and Georgia, to Florida. Current plans for improving passenger rail along this corridor will connect the major urban centers of the southeastern United States, providing greater mobility across the region and improved access to jobs. The following maps include the cities that fall along the core of the SEC passenger rail network.<sup>1</sup>

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<sup>1</sup> The La Crosse station location is proposed in the Raleigh to Richmond High-Speed Rail Study; the final location of this station is yet to be determined through further study.

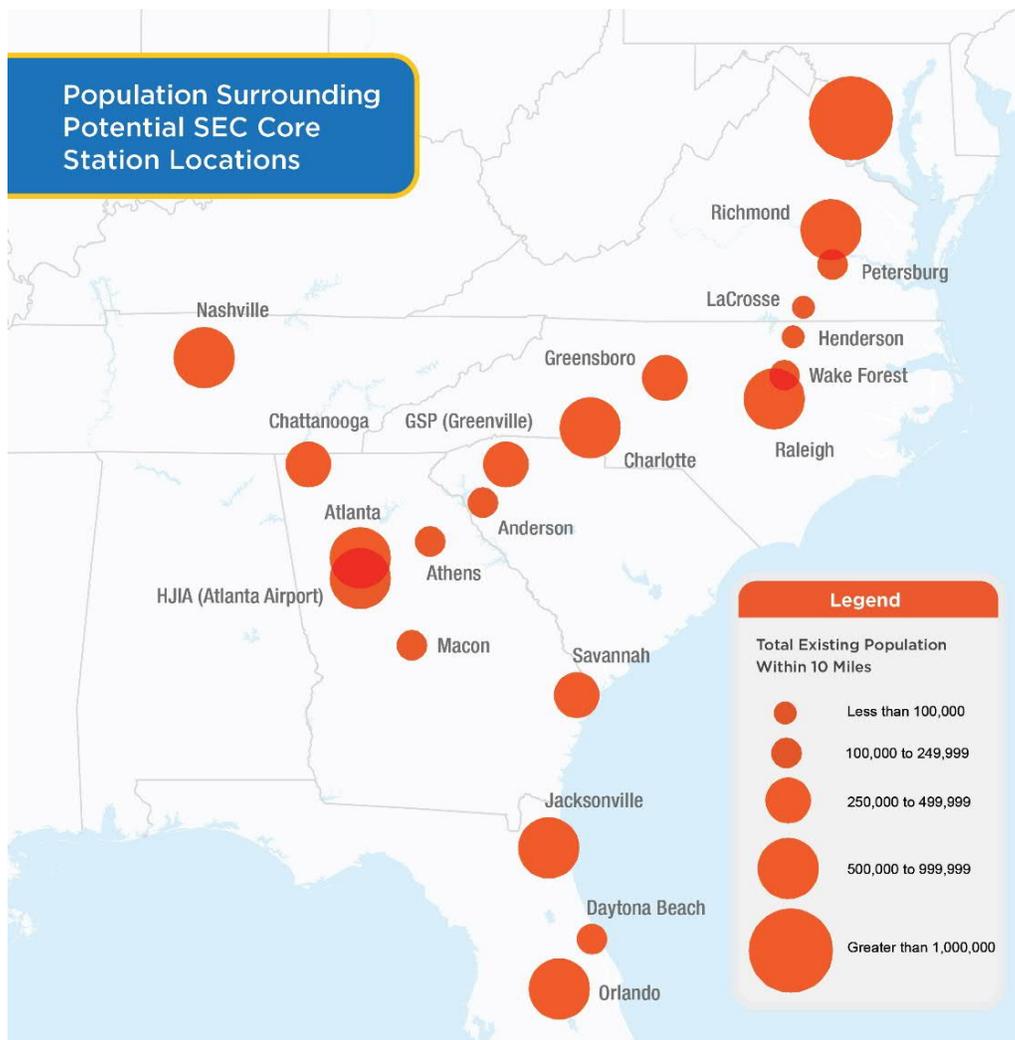


Figure 1: Existing Population Within 10 Miles of Existing and Proposed Station Locations (2020)<sup>2</sup>

<sup>2</sup> Urban Footprint; US Census American Community Survey 5-Year Estimates, Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES).

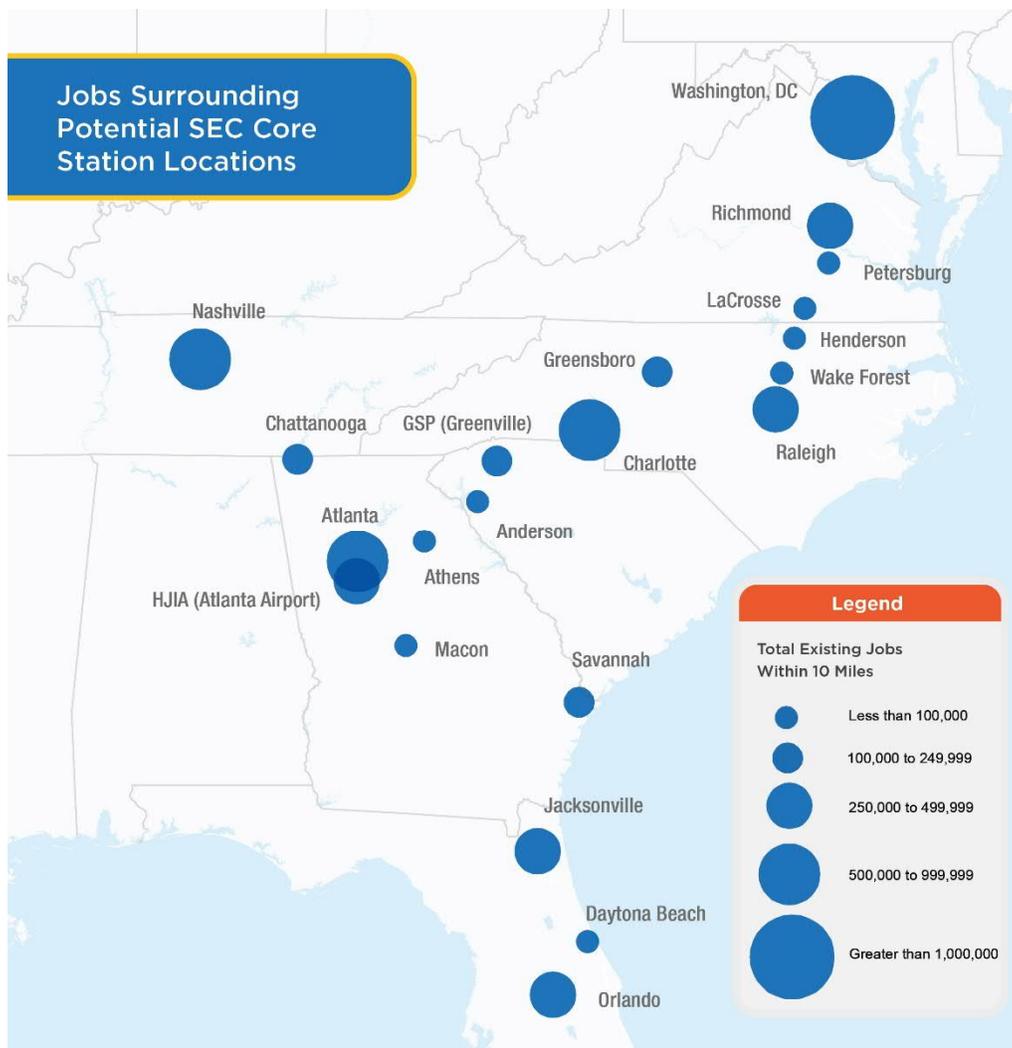


Figure 2: Existing Jobs within 10 Miles of Existing and Proposed Station Locations (2020)<sup>3</sup>

## 1.2 Prior Regional Summaries

The SEC Commission has already developed and published the Southeast Regional Rail Plan and reported on the economic benefits of improved passenger rail along the corridor. A summary of these previous studies is provided here, and full documents are available on the [SEC website](#).

### 1.2.1 Previous SEC Commission Plans

#### *Southeast Regional Rail Plan*

Published: 2021

The Southeast Regional Rail Planning Study<sup>4</sup> (SE Study) is a multistate network planning study for high-performance rail (HPR) in the Southeast United States. Led by the Federal Railroad Administration (FRA) in partnership with stakeholders from across the Southeast, the SE Study

<sup>3</sup> Urban Footprint; US Census American Community Survey 5-Year Estimates, Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES).

<sup>4</sup> [https://www.southeastcorridor-commission.org/files/ugd/f32a1d\\_6e2bd26333cc4562b9edd8cf6e42e7ac.pdf](https://www.southeastcorridor-commission.org/files/ugd/f32a1d_6e2bd26333cc4562b9edd8cf6e42e7ac.pdf)

presents a long-term vision for intercity passenger rail in the Southeast. The SE Study area is defined as the states of Florida, Georgia, North Carolina, South Carolina, Tennessee, Virginia, and Washington, DC. The states of West Virginia and Alabama are participatory states, meaning they were informed of the study, but are not included in the analysis of the SE Study area. In some instances, connections to markets outside the SE Study area were included in the analysis to represent the impact connecting services would have on the performance of the network.

The SE Study is intended to complement individual state rail plans (SRP) and long-range transportation planning documents by prioritizing additional studies and the implementation of passenger and freight rail improvements. The Southeast Regional Network Vision, shown below, includes existing and programmed intercity passenger rail services, including a Core Express Southeast Corridor, a Regional Brightline service from Orlando to Miami, connectivity to the existing Northeast Corridor (NEC), potential connection via Nashville to the Midwest passenger rail market, and several connecting corridors to expand the reach of the network (**Figure 3**).

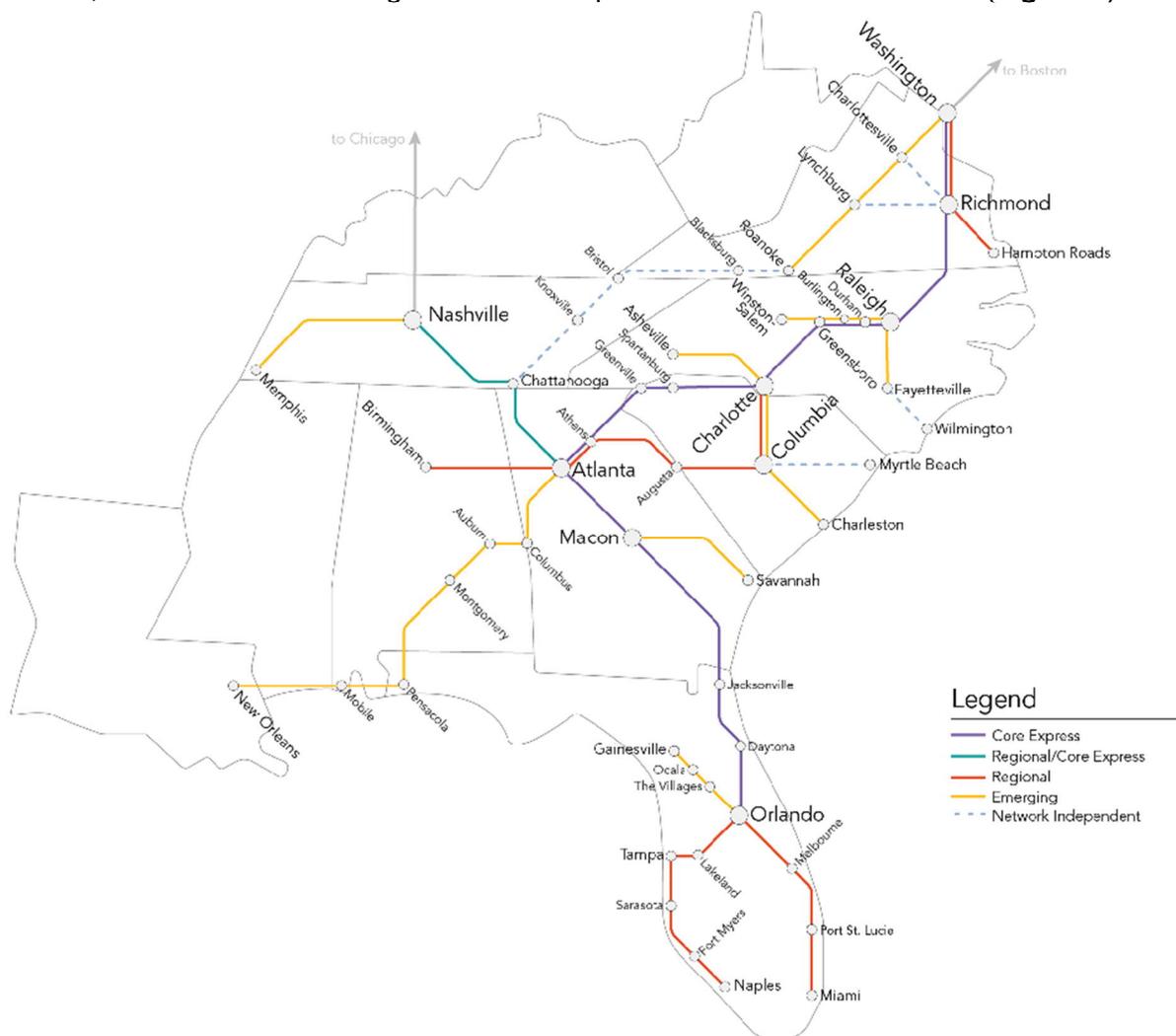


Figure 3: Southeast Regional Network Vision from Southeast Regional Rail Plan

\*Note: Regional/Core Express represents a combination of these characteristics.

Table 1-1 provides details on the characteristics of each segment type shown in Figure 3.

<b>Segment Type</b>	<b>Top Speeds (mph)</b>	<b>Other Commons Characteristics</b>	<b>Primary Markets Served</b>
<i>Core Express*</i>	Over 125	Frequent service; dedicated tracks, except in terminal areas; electric-powered	Serving major metropolitan centers
<i>Regional*</i>	90–125	Frequent service; dedicated and shared tracks, electric- and diesel-powered	Connecting mid-sized urban areas with each other or with larger metropolitan areas
<i>Emerging</i>	Up to 90	Tracks shared by passenger and freight trains	Connecting mid-sized and smaller urban areas with each other or with larger metropolitan areas

\*Note: Regional/Core Express represents a combination of these characteristics.

Table 1-1: SE Study Corridor Segment Types

The identification of corridors in the SE Study occurred before the creation and passage of the Investment in Infrastructure and Jobs Act (IIJA), and therefore these segments are not related to the newly created FRA program for Corridor Identification (CID). The segments categorized in this study, and in this SEC Development Strategy, are independent of CID but may serve as a basis for proposals under that new program.

### *Economic Benefits of High-Performance Rail in the Southeast*

Published: 2021

The Economic Benefits of High-Performance Rail in the Southeast study<sup>5</sup> documents the key economic benefits of developing HPR service in the SEC. New and improved rail infrastructure will help transport goods, reduce highway congestion, improve safety, reduce emissions, and expand connectivity for passengers and freight throughout the Southeast. Improvements in rail capacity through Washington, DC, also will enhance connectivity between the Southeast and major urban centers along the NEC, specifically addressing the bottleneck across the Potomac River with a new Long Bridge.

The economic benefits considered in this study include the number of direct and indirect jobs supported, job market accessibility, increased mobility, improved safety, change in real estate values, and reduced vehicle emissions.

Development scenarios in the study focused on the “backbone” of the Southeast Corridor and the opportunities for HPR connections to major metropolitan areas. The backbone of the Southeast network runs from Washington, DC, to Atlanta and south to Orlando. In addition to the backbone of the network, the economic impacts of the Nashville to Atlanta corridor also are

<sup>5</sup> [https://www.southeastcorridor-commission.org/files/ugd/f32a1d\\_a9323c245d214cc7a671eb31a99565e1.pdf](https://www.southeastcorridor-commission.org/files/ugd/f32a1d_a9323c245d214cc7a671eb31a99565e1.pdf)

considered in the second scenario because the robust service definition of this corridor presents the potential for strong economic benefits. This geography is jointly called the High-Performance Rail Network for the purposes of economic analysis, as shown in **Figure 4**.

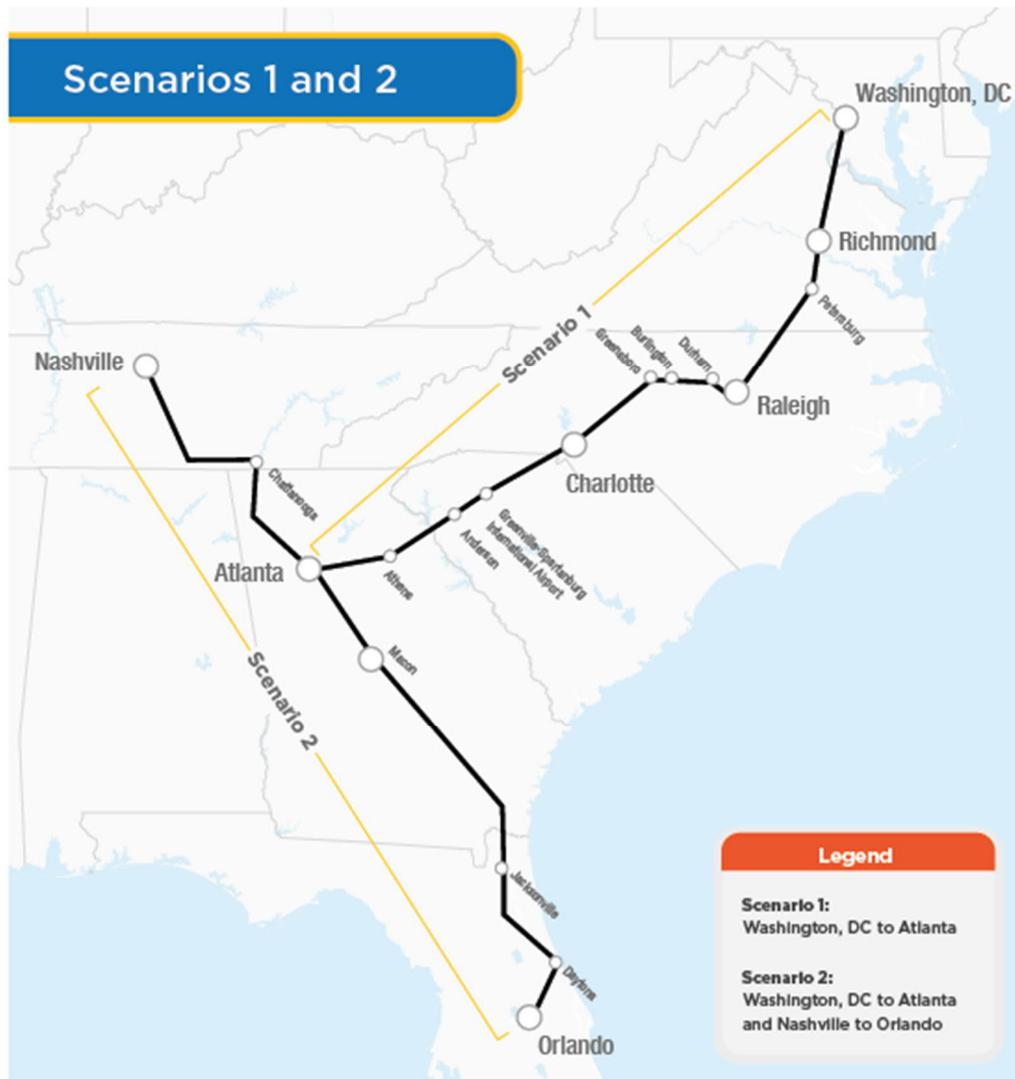


Figure 4: High-Performance Rail Network Scenarios from SEC Economic Benefits Study

In areas of the corridor that have not selected a preferred operating speed through the federal environmental review process, anticipated benefits were estimated for a lower 79 mph maximum speed and a higher 125 mph maximum speed for each scenario. These variations in speed are designated as Scenarios 1A and 2A for the lower speed and Scenarios 1B and 2B for the higher speed.

Based on input from the freight railroads in the Southeast, expected benefits of improved freight movement were limited to only those corridors that are adding enough capacity as part of HPR development, either through new track or passenger rail right-of-way (ROW), to significantly reduce the conflict between passenger and freight trains.

Benefits were considered from 2025 through 2055 to allow time for HPR operations to be implemented in all geographies covered by the scenarios (**Figure 5**).

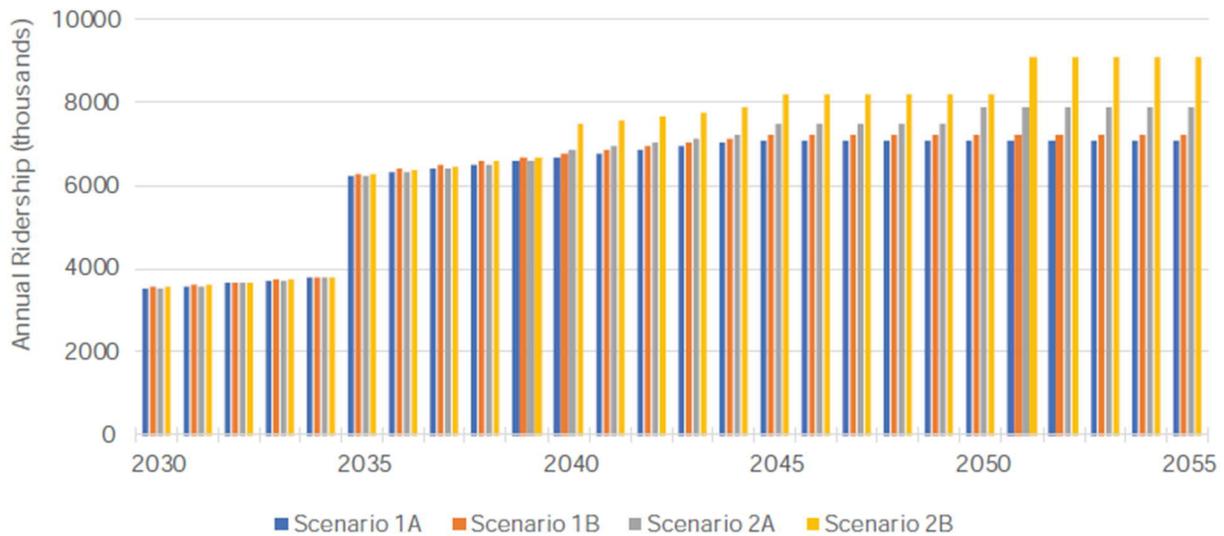


Figure 5: Economic Benefits Study Annual Ridership Estimates 2030 to 2055 (thousands)

To be conservative, the benefits calculated in the study are phased over time as each segment of the system is at a different stage of development (

Segment	Assumed Operational Year	Scenario 1A/1B	Scenario 2A/2B
Washington DC to Richmond	2030	☑	☑
Richmond to Raleigh	2030	☑	☑
Raleigh to Charlotte	2030	☑	☑
Charlotte to Atlanta	2035	☑	☑
Atlanta to Jacksonville	2040		☑
Jacksonville to Orlando	2045		☑
Atlanta to Chattanooga	2045		☑
Chattanooga to Nashville	2050		☑

**Table 1-2).** This limits the time for accrual of benefits for the segments that are built further into the future; however, determining benefits beyond 2055 was deemed to be too uncertain for inclusion in this study. In addition, some economic benefits were not monetized as part of the Economic Benefits Study, including agglomeration benefits and productivity benefits provided by improved rail connections.

Segment	Assumed Operational Year	Scenario 1A/1B	Scenario 2A/2B
Washington DC to Richmond	2030	☑	☑
Richmond to Raleigh	2030	☑	☑
Raleigh to Charlotte	2030	☑	☑
Charlotte to Atlanta	2035	☑	☑
Atlanta to Jacksonville	2040		☑
Jacksonville to Orlando	2045		☑
Atlanta to Chattanooga	2045		☑
Chattanooga to Nashville	2050		☑

Table 1-2: Economic Benefits Study Assumed Operational Years by Segment

The present value of economic impacts and benefits for each scenario are provided below in millions of 2020 dollars (**Figure 6**). When compared to the present value of capital costs, these economic impacts and benefits are more than double the upfront investment costs. While additional operating costs and environmental impacts would need to be considered to develop a benefit-cost analysis that meets United States Department of Transportation (USDOT) requirements, this comparison does indicate that further planning and development in the corridor is warranted.

The phases utilized in the Economic Benefits Study were determined based on existing plans and the status of infrastructure improvements. Prioritization of projects along the corridor was not considered at the time. Phasing has been further refined in this Development Strategy to reflect both status and priorities.

## Economic Benefits of High-Performance Rail in the Southeast

Over 30 years of construction and operations, high-performance rail benefits are **more than double** the investment costs.

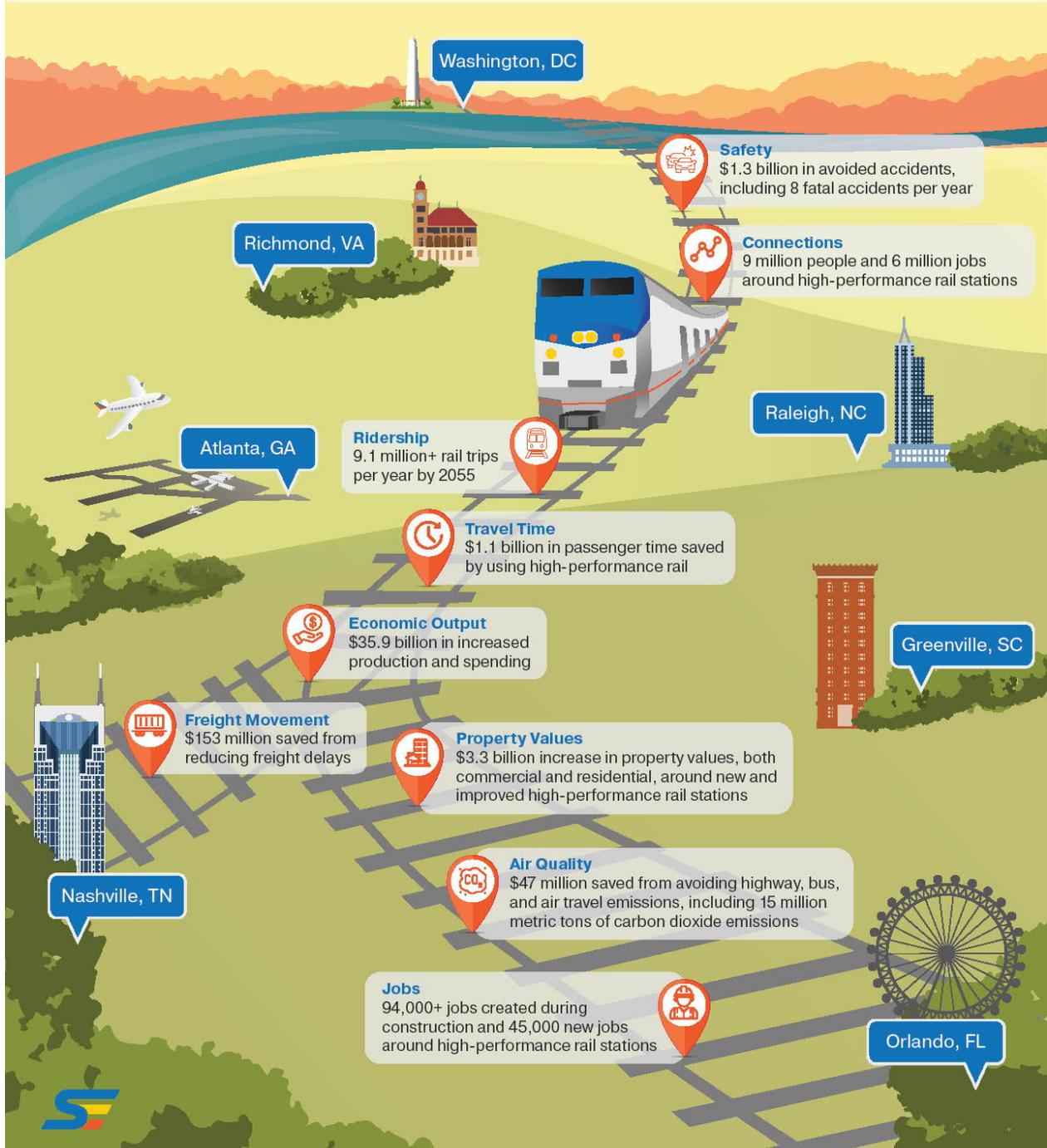


Figure 6: Economic Benefits of High-Performance Rail in the Southeast

### 1.2.2 State and Network Rail Plans

Along with the plans developed by the SEC Commission, state and federal partners have been advancing planning efforts for rail in the region, providing additional detail for the service needs and priorities throughout the corridor. This section describes elements of these planning efforts that addressed the growth and improvements in the SEC, which are critical to the development of this regional strategy.

#### *Amtrak Connects US Plan*

Published: 2021

Under the Amtrak Connects US Plan,<sup>6</sup> Amtrak would partner with states to add 39 new routes and enhancements to 25 routes, bringing service to 160 new communities. It would provide intercity passenger rail service to the 50 most populous metropolitan areas and expand or improve rail service for 20 million more riders annually. The plan includes speed increases in certain corridors up to 110 or 125 mph. Planned improvements and additions to the SEC are shown in **Figure 7** and include the following:

- Expand from one to two round trips between New York City and Roanoke, VA
- Extend two New York City-to-Roanoke round trips to the New River Valley, VA
- Expand from one to five round trips between New York City and Richmond Main Street Station
- Expand from two to three round trips between New York City and Norfolk, VA
- Expand from two to three round trips between New York City/Boston, MA, and Newport News, VA
- New NEC–Washington–Richmond–Raleigh/Charlotte, NC, service overlays six Washington-to-Richmond round trips
- Expand the number of daily round trips between Charlotte–Raleigh–Richmond–New York City from one Carolinian trip daily to multiple frequencies throughout the day
- Expand the number of Piedmont daily round trips between Charlotte and Raleigh
- New service between Asheville, NC, to Salisbury, NC, (connection to SEC service and Charlotte-to-Raleigh services)
- New service between Wilmington, NC, and Raleigh (connection to SEC service and Charlotte-to-Raleigh services)
- Three round trips between Atlanta, GA, and Charlotte
- Extend two Atlanta-to-Charlotte round trips to Raleigh as part of Piedmont service
- Two round trips between Atlanta and Nashville, TN
- Three round trips between Atlanta and Montgomery, AL
- One round trip between Atlanta and Birmingham, AL
- Three round trips between Atlanta, Macon, GA, and Savannah, GA
- Two round trips between Mobile, AL, and New Orleans, LA
- Two round trips between Jacksonville, FL, Orlando, FL, and Tampa, FL
- Three round trips between Tampa and Miami, FL
- Two round trips between Orlando and Miami

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<sup>6</sup> <https://www.amtrakconnectsus.com/>

In several portions of the corridor, services described in the Amtrak Connects US Plan are less intensive than what has been evaluated through the federal environmental review process for individual routes or segments. This is not a final proposal and does not lay out a specific order or prioritization for the development. Amtrak requires \$75 billion for implementation of this plan.



Figure 7: Amtrak's Southeastern Corridor Plan (2021)

## *DC State Rail Plan*

Published: 2017

The DC State Rail Plan<sup>7</sup> summarizes projects that are relevant to the corridor. The Washington, DC, to Richmond Southeast High-Speed Rail project (DC2RVA) is a segment of the Southeast Corridor High-Speed Rail Project linking it to the NEC. This segment is part of a larger, federally recognized high-speed rail (HSR) corridor stretching from the District to Atlanta. The objective of the project is to increase freight and passenger rail capacity and speed; it utilizes an incremental development approach.

Currently, some rail segments between Richmond and Washington, DC, are nearing shared capacity of freight, commuter, and passenger trains. Without improvements, congestion is likely to increase, and the quality of service will decrease. Improvements from DC2RVA will enable rail travel to meet growing demands for passenger and freight travel in the region. New service is anticipated to begin by 2026. Currently, Virginia is considering adding nine daily round-trip passenger trains. Investment in the Long Bridge will be necessary to meet the needs identified as part of the DC2RVA project.

## *Transforming Rail in Virginia*

Transforming Rail in Virginia<sup>8</sup> is a phased program of capital improvements that are paired with the delivery of additional passenger service in Virginia. The capital and operational improvements are aimed at increasing passenger and freight rail capacity, reliability, and frequency. The expanded passenger rail services that will result from this program include more frequent state-supported Amtrak services between Washington, DC, from Richmond, Newport News, Norfolk, Roanoke, and for the first time since the 1970s, passenger rail service to the New River Valley. All state-supported trains will connect to Amtrak's NEC. Regional commuter rail service, operated by the Virginia Railway Express (VRE), also will increase frequencies on VRE's corridors between Washington, DC, and its existing service area in Virginia.

Through Transforming Rail in Virginia, Virginia has worked with CSX Transportation (CSXT) and Norfolk Southern Railway (NS) to identify opportunities to resolve conflicts between freight and passenger rail services. Partnerships with these private operators have allowed Virginia to expand capacity and improve reliability for passenger rail service while reducing interference and congestion on tracks serving freight rail.

In the Richmond to Washington, DC, corridor, Transforming Rail in Virginia includes 37 miles of new track and a series of infrastructure improvements including the construction of the new Long Bridge, which doubles the existing tracks for rail services crossing the Potomac River. The additional capacity will accommodate the planned increased service in the corridor, with Amtrak service in the Commonwealth of Virginia doubling over the course of the program. As a result of these investments, Amtrak will eventually be able to provide nearly hourly service between Richmond and Washington, DC.

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<sup>7</sup> <https://ddot.dc.gov/page/district-columbia-state-rail-plan>

<sup>8</sup> <https://transformingrailva.com/>



Figure 8: Transforming Rail in Virginia Improvements (2021)

### Virginia Rail Plan

Published: 2018

The Virginia Rail Plan<sup>9</sup> includes the following new potential passenger rail improvements:

**Washington to North Carolina Corridor:** This corridor is the primary north-south route for Amtrak long-distance service and is served by CSXT’s I-95 Corridor between New York and Jacksonville, and CSXT’s National Gateway Corridor linking Mid-Atlantic ports with the Midwest.

- Priority projects include adding capacity to the Long Bridge—a major chokepoint affecting CSXT, Amtrak, and VRE commuter service—and implementing additional capacity improvements to the corridor in Northern Virginia via the Transforming Rail in Virginia program.
- Longer term, additional improvements will be necessary to support improved passenger service. These improvements are outlined in the Raleigh to Richmond (R2R) study, and in the DC2RVA Tier II Environmental Impact Statement (EIS). The long-term phasing and timing of these improvements will be based on funding availability, congestion levels, and passenger service benefits.

**Crescent Corridor:** This corridor spans from New York to Louisiana and Tennessee. The corridor connects Roanoke, Lynchburg, and Charlottesville to Washington, DC, and to the NEC.

- Priority projects include expanded passenger service to Lynchburg and Roanoke and improving capacity and connectivity with short-line railroads and the Virginia Inland Port

<sup>9</sup> <https://www.drpt.virginia.gov/rail/reference-materials/virginia-state-rail-plan/>

in Front Royal. Longer-term considerations for this corridor include adding passenger service to southwestern Virginia.

**East-West Corridor:** This corridor parallels I-64 from Hampton Roads through Richmond to Clifton Forge and handles Virginia regional passenger service from Newport News.

- Priority projects include maintaining a state of good repair, particularly on the Buckingham Branch Railroad, and supporting existing passenger services. This includes investments to add a new maintenance facility and improvements to reduce conflicts between passenger trains and freight trains on the corridor between Richmond and Newport News. Longer-term considerations include expansion of east-west passenger connections.

**Heartland Corridor:** Passenger service on the Heartland Corridor runs between Norfolk and Petersburg, and between Roanoke and Lynchburg.

- Priority improvements include adding two additional round-trip passenger trains to Norfolk by extending two existing trains from Richmond. Longer-term initiatives include the study of additional and/or higher-speed passenger services to Hampton Roads and making critical east-west multimodal connections.

**Figure 9** shows the existing VRE and Amtrak routes through Virginia. It also shows the host railways for these passenger routes. **Figure 10** shows the freight and passenger corridors as well as future passenger rail corridors outlined in the Virginia Rail Plan.

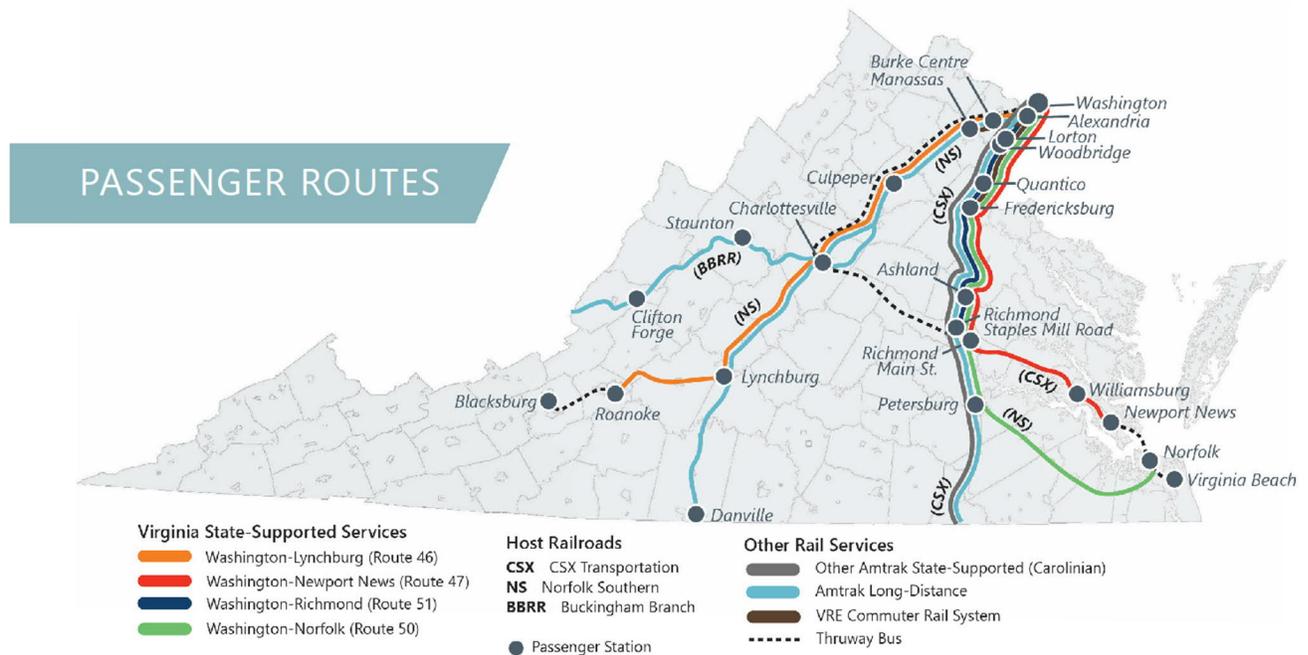


Figure 9: Existing Virginia Rail Services (2018)

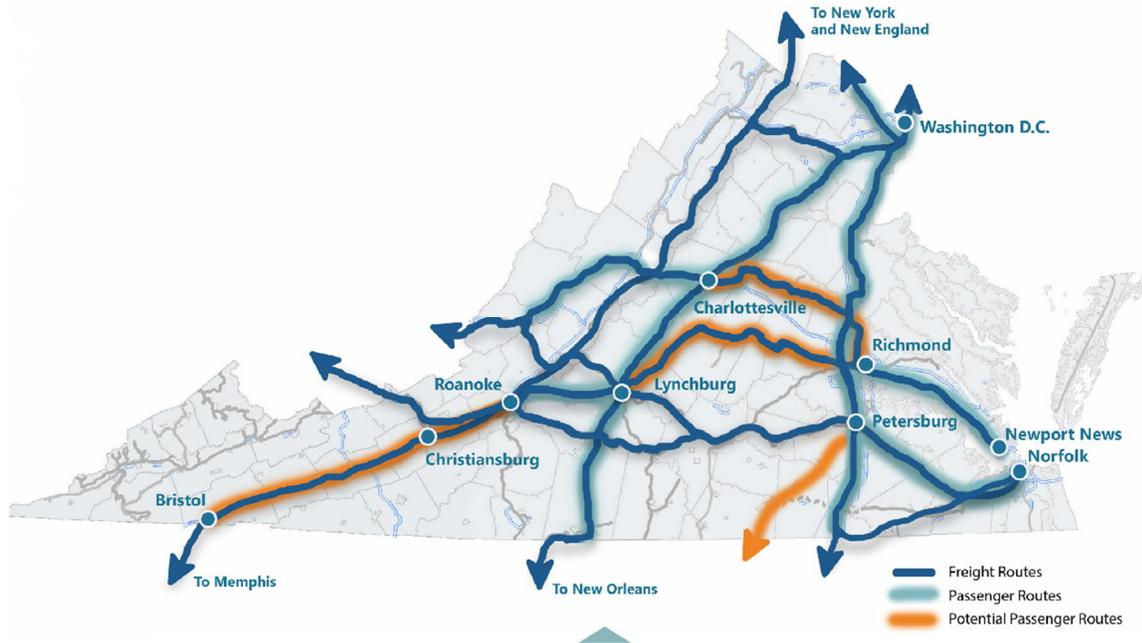


Figure 10: Existing and Potential Virginia Passenger Routes (2018)

*North Carolina Department of Transportation (NCDOT) Comprehensive State Rail Plan*

Published: 2015

NCDOT<sup>10</sup> has undertaken planning initiatives for implementing the SEC, including a final EIS (FEIS) and record of decision (ROD) for alternatives from R2R. Other planning initiatives have included study of extending passenger rail services to western North Carolina (Asheville) and eastern North Carolina (Wilmington). NCDOT planning staff also have completed several other environmental studies for track improvement projects and applications for federal grants.

NCDOT has plans to introduce additional frequencies along the Charlotte to Raleigh, or Piedmont, corridor within the next five years, as well as long-term plans for upgrading the corridor to accommodate additional service frequencies. NCDOT also has been studying options for extending services to the western and eastern parts of the state without passenger rail service. Existing passenger rail service is shown in **Figure 11**.

To meet the growing demand in this corridor, NCDOT and FRA funded the Piedmont Improvement Program (PIP) to improve safety, capacity, and speed in the Piedmont corridor. The PIP began in 2009 and includes station enhancements, infrastructure improvements, and new passenger rail equipment to support additional passenger rail services in the Piedmont corridor. As part of the PIP, NCDOT has entered an agreement with FRA, NS, the North Carolina Railroad (NCR) Company, and Amtrak to add a fourth and fifth daily round trip between Charlotte and Raleigh. Completed in 2018, the PIP allowed NCDOT to increase the daily

<sup>10</sup> <https://www.ncdot.gov/divisions/rail/Pages/rail-plan.aspx>

passenger rail frequencies in the corridor from three to five, with maximum allowable speeds at 79 mph for much of this corridor.

NCDOT also has been evaluating expanding the following connecting passenger rail services:

- Western NC passenger service (Salisbury to Asheville, potential connection to Andrews to Murphy)
- Southeastern NC passenger service (Raleigh to Wilmington)
- Additional frequencies and service improvements between Charlotte and Raleigh
- Acquisition of the S-Line corridor between Raleigh and north of Henderson, NC, and phased development of the Raleigh-to-Richmond portion of the SEC

### North Carolina Passenger Train Service

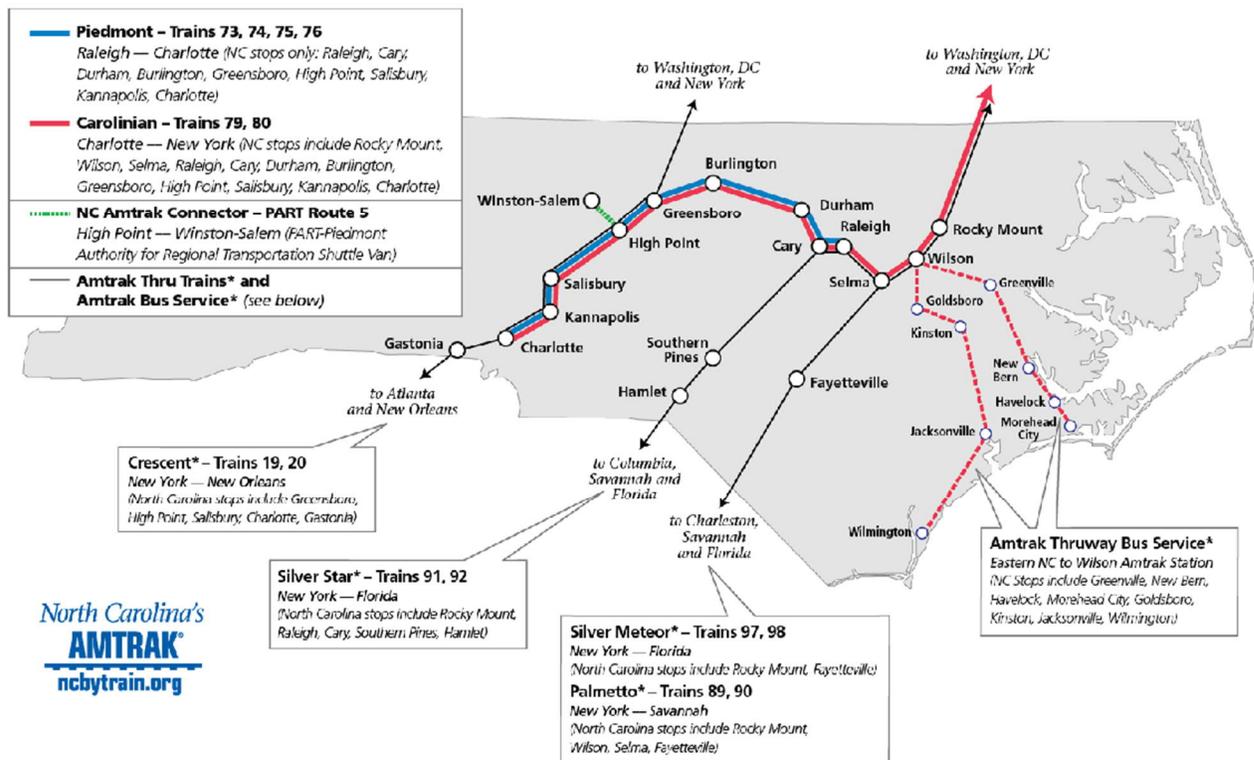


Figure 11: North Carolina Existing Passenger Train Service (2015)

### South Carolina Statewide Rail Plan

Published: 2020

The South Carolina SRP<sup>11</sup> includes proposed high-speed passenger rail services. The federally designated Southeast High-Speed Rail Corridor passes through South Carolina. Georgia DOT (GDOT), South Carolina DOT (SCDOT), and NCDOT, have partnered in the development of a Tier I EIS for an HSR corridor between Charlotte and Atlanta that passes through the state’s

<sup>11</sup> [https://www.scdot.org/multimodal/pdf/SC\\_MTP\\_Rail\\_Plan\\_FINAL.pdf](https://www.scdot.org/multimodal/pdf/SC_MTP_Rail_Plan_FINAL.pdf)

Upstate region roughly parallel to I-85. This Passenger Rail Corridor Investment Plan (PRCIP) is part of a larger HSR initiative on the behalf of FRA that extends north to Washington, DC, and is commonly referred to as the Southeast High-Speed Rail (SEHSR) Corridor. The SRP also includes the Atlanta-Charlotte Corridor Plan.

### *2019 Tennessee Department of Transportation (TDOT) Statewide Rail Plan*

Published: 2019

Tennessee's rail plan<sup>12</sup> includes long-term plans for HSR in several corridors, including the Jacksonville-Atlanta-Chattanooga-Nashville corridor. The plan identifies the Atlanta-Chattanooga Tier I EIS as the primary vehicle for continued study of the Atlanta-Chattanooga High-Speed Ground Transportation Project. No additional details on selected corridor alignments, speeds, or train technologies in the SEC are provided in this plan, so any specifics of rail in Tennessee have been limited to information available under existing plans in the Atlanta-Chattanooga corridor.

### *Georgia State Rail Plan*

Published: 2021

The Georgia SRP<sup>13</sup> discusses four passenger rail service routes currently operated by Amtrak. Three serve coastal Georgia—the Palmetto operates between New York and Savannah, and the Silver Star and Silver Meteor operate between New York and Miami (see **Figure 12**). All three routes operate over CSXT rail lines. The Crescent serves Atlanta and the northern part of the state with service between New Orleans and New York City.

The preferred corridor alternative for the Atlanta-Chattanooga High-Speed Ground Transportation Project is along the I-75 ROW for much of the distance between Atlanta and Chattanooga and then follows along the NS-owned railroad ROW and I-75/I-85 into downtown Atlanta. The corridor would diverge from I-75 outside of Chattanooga and enter Chattanooga along an existing CSXT ROW.

An extension of the SEHSR corridor from Charlotte to Atlanta is under environmental review. A Draft Alternatives Development Report was completed in late October 2015. Three alternatives are considered in the report—one that would follow an existing freight ROW, another that would follow the I-85 ROW, and a third that would be mainly on a new dedicated rail ROW. On July 9, 2021, the Tier I FEIS and ROD for the Tier I Atlanta to Charlotte Passenger Rail Corridor Investment Plan (PRCIP) was published in the Environmental Protection Agency (EPA) Federal Register. FRA and GDOT worked together with stakeholders in North Carolina and South Carolina to reach this important milestone in the Tier I EIS process. In this Tier I FEIS/ROD, FRA has identified and selected the Greenfield Corridor Alternative as the Preferred Corridor Alternative based on analysis presented in the Tier I DEIS, and input received from the public, stakeholders, and agencies during the public meetings and comment period.

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<sup>12</sup> [https://www.tn.gov/content/dam/tn/tdot/freight-and-logistics/TDOT\\_RailPlan\\_updated\\_2019.pdf](https://www.tn.gov/content/dam/tn/tdot/freight-and-logistics/TDOT_RailPlan_updated_2019.pdf)

<sup>13</sup> <http://www.dot.ga.gov/IS/Rail/StateRailPlan>

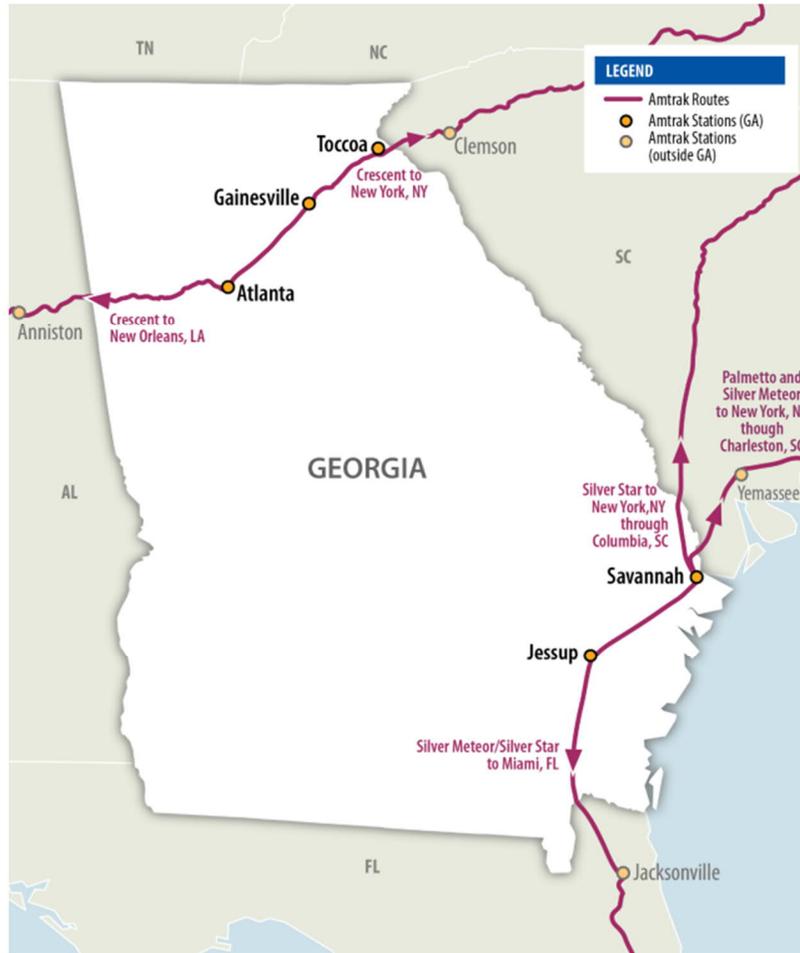


Figure 12: Amtrak Routes and Stations within 30 Miles of Georgia (2021)

*2015 Florida Department of Transportation (FDOT) Rail System Plan*

Published: 2018

This plan<sup>14</sup> was updated in 2018 and includes development plans for the rail network south of Jacksonville. The development of the major Florida corridors is currently being carried out by Brightline in partnership with FDOT. In 2014, passenger rail easement rights were acquired for an extension north to Jacksonville for services from Orlando, which would provide a connection to tourist destinations in Daytona Beach and St. Augustine; however, the partnership does not currently have plans to develop the corridor between Jacksonville and Orlando. Brightline’s current efforts in Florida are focused on operations in corridors linking Orlando to Miami and Tampa.

<sup>14</sup> <https://www.fdot.gov/rail/plans/railplan>

### *Connect NEC 2035*

Published: 2021

The growth of the NEC is being guided by this reinvestment program, primarily focused on state of good repair for the existing corridor. It stretches from Boston to Washington, DC, where it connects with the SEC. Thus, improvements to the NEC will benefit the SEC and vice versa.

The report<sup>15</sup> outlines a program of improvements that aim to improve mobility and connections throughout the region, create economic opportunity, combat climate change, and support desirable cities and communities. In total, Connect NEC 2035 identifies 59 new project groups and 119 capital renewal programs at a total cost of \$117 billion.

These improvements were identified by first developing corridor-wide frequency and travel time goals. Using these goals allowed for projects to be bundled to ensure that improvements only take place when their benefits can be fully realized. This allowed projects to be prioritized and grouped into phases matching infrastructure improvements to incremental service improvement.

Some of the major projects identified eliminate major bottlenecks along the corridor such as the Baltimore & Potomac Tunnel replacement or the East River Tunnel rehabilitation. Station expansions at Boston South, New York Penn Station, Newark Penn Station, Philadelphia 30<sup>th</sup> Street Station, Baltimore Penn Station, and Washington Union Station are all programmed, with the goal of improving service quality and capacity.

## 1.3 Defining the High-Performance Rail Network

For the purposes of the SEC Development Strategy, the High-Performance Rail Network is defined to include the Core Express and Regional/Core Express segments from the Southeast Regional Network Vision in the SE Study. The High-Performance Rail Network runs from Washington, DC, to Atlanta, and from Atlanta to Nashville and Orlando (see **Figure 13**).

This network is very similar to the scenarios presented in the Economic Benefits Study (see **Section 1.2.1**), with one change in alignment—the Georgia SRP shows development of passenger rail from Atlanta to Savannah via Macon, and then south to Jacksonville. The development of an Atlanta-to-Savannah EIS was recently earmarked in the 2022 omnibus spending bill. Therefore, the connection through Savannah is included in the High-Performance Rail Network, whereas alignments in the prior studies connected Macon to Jacksonville directly for the sake of a faster travel time.

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<sup>15</sup> <https://nec-commission.com/connect-nec-2035/>

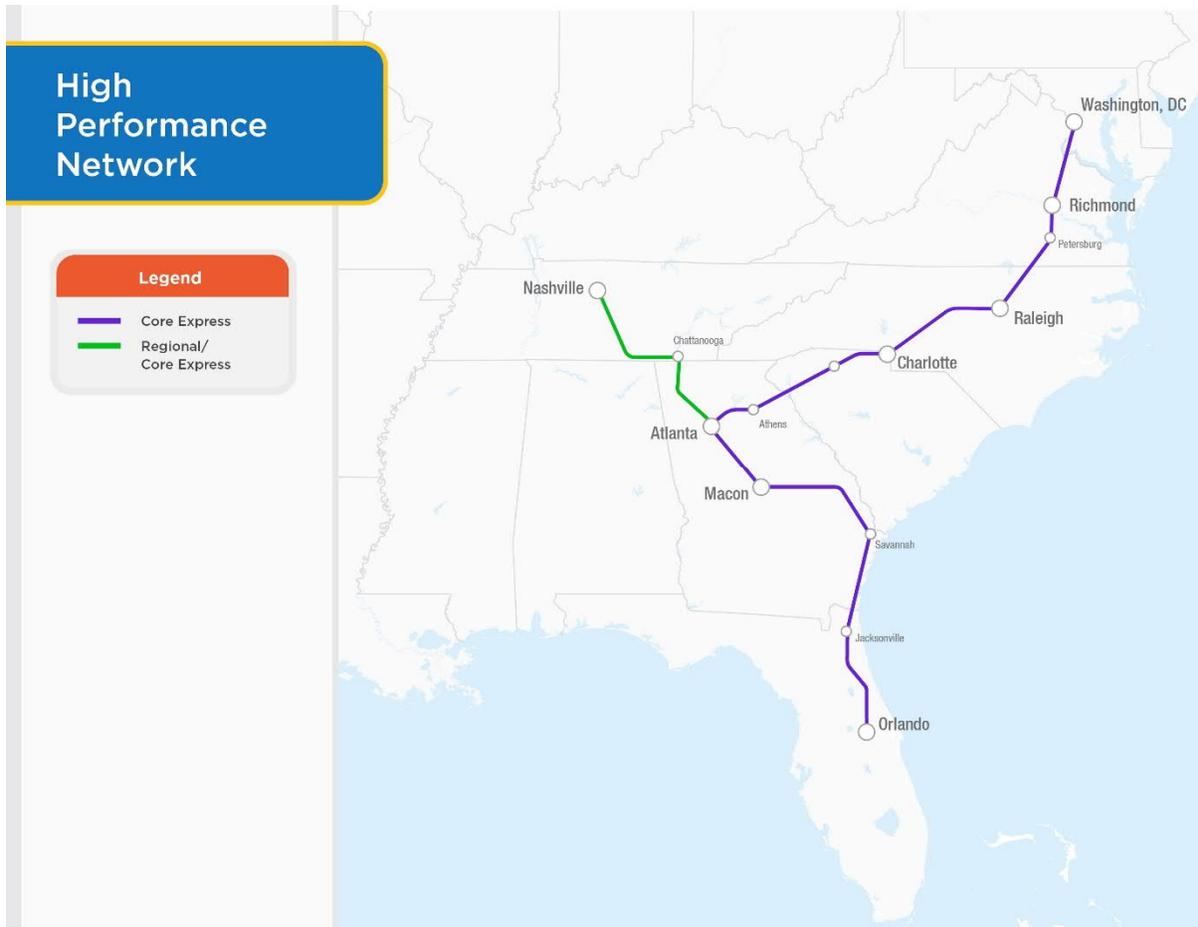


Figure 13: SEC High-Performance Rail Network

The SEC Development Strategy focuses on the status and phasing of the High-Performance Rail Network to provide a spine that connects major urban centers between states and can be leveraged as Regional and Emerging segments are developed. Many states are already developing Regional and Emerging segments in parallel with the High-Performance Rail Network areas, including Virginia—with plans to expand services to Roanoke, the New River Valley, and Hampton Roads—and Florida, with plans to extend service to Tampa and Miami.

## 2.0 Status of the Corridor

Segments of the High-Performance Rail Network are at different stages of planning and development. As shown in **Figure 14**, two segments—from Washington, DC, to Richmond and Richmond to Raleigh—have progressed beyond environmental clearance and moved into ROW acquisition and construction phases. This phase will include engineering and final design of infrastructure improvements. The three segments from Raleigh to Charlotte, Charlotte to Atlanta, and Atlanta to Chattanooga have programmatic (Tier I) environmental clearance and require project-level (Tier II) clearance to proceed to construction. The other segments are either in the feasibility planning or conceptual planning stage.

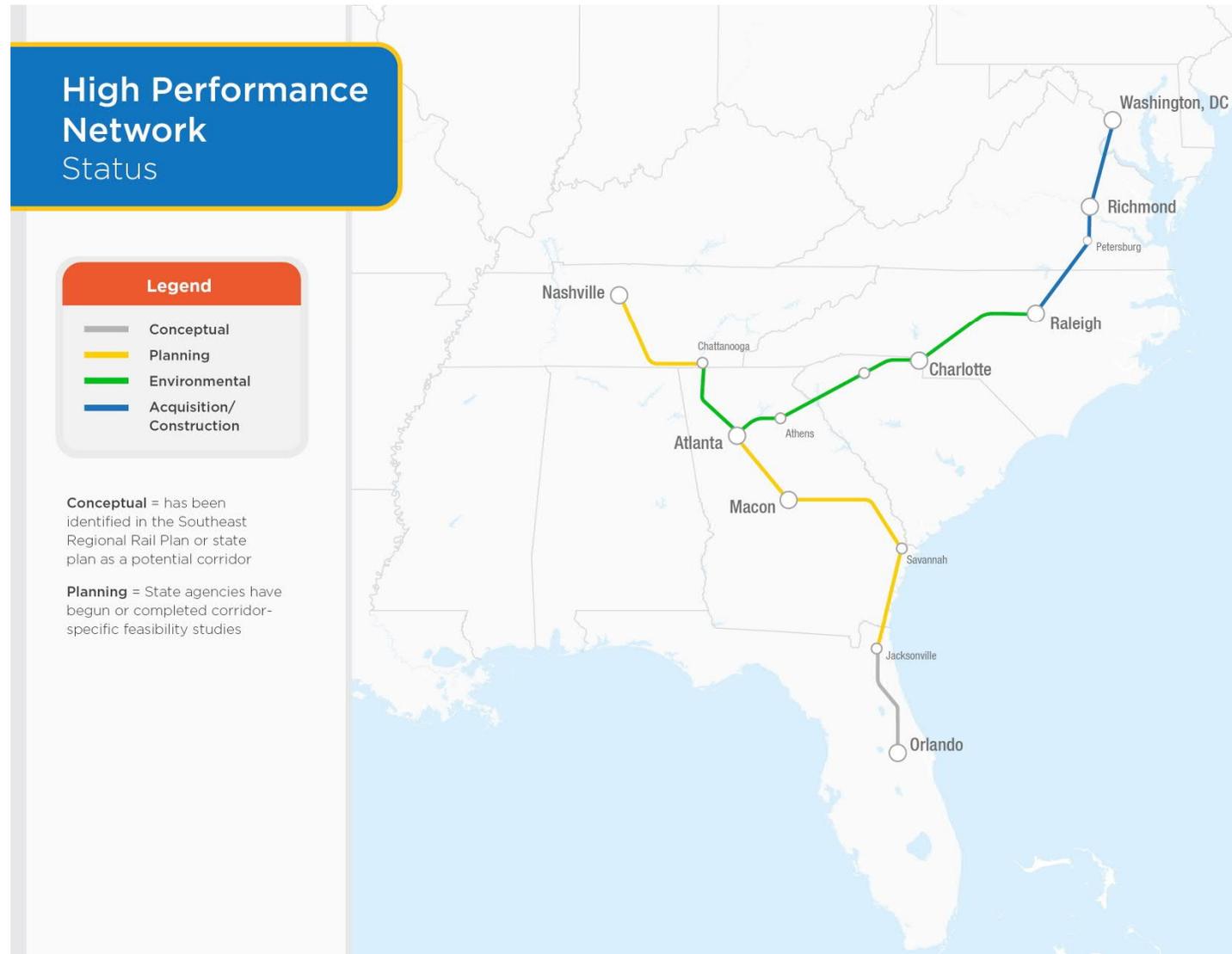


Figure 14: High-Performance Network Current Status

The following section details the current planning documents and levels of environmental clearance for each segment, along with the assessment of maximum speeds and preferred alignments. The statuses shown above relate to the maximum speeds and track classes shown in **Figure 15**. It is important to note that existing passenger services operate on portions of the network already (from Washington to Richmond and from Raleigh to Charlotte), though at slower speeds and lower frequencies than planned for the SEC. Part of the development of the corridor from Washington, DC, to Richmond includes the phasing of improvements to incrementally improve speeds and frequencies.

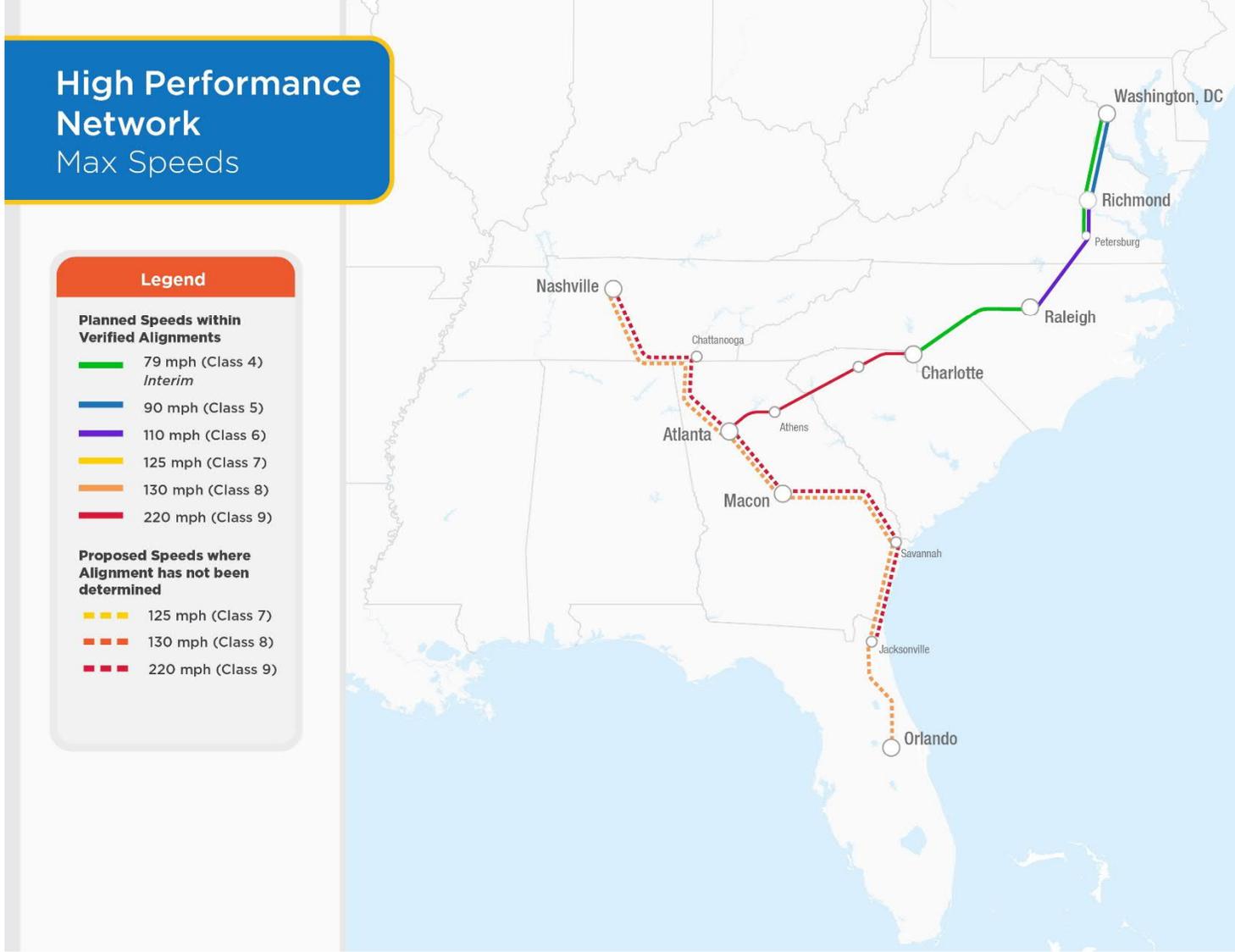


Figure 15: Max Speeds of High-Performance Network

## 2.1 Current Plans on the High-Performance Rail Network

### *Long Bridge Project Combined FEIS and ROD*

Published: 2020

The Long Bridge project<sup>16</sup> improves capacity for rail traffic crossing the Potomac River between Virginia and Washington, DC, by constructing a new two-track bridge. This new bridge, along with the existing two-track bridge, will double capacity at a critical bottleneck that has limited the potential for expanding passenger rail services in the Southeast. A combined FEIS/ROD was published in 2020 and preliminary engineering and design is underway. Improved connections to Washington, DC, and the NEC that are described in the following current plans are largely dependent on the success of this project.

### *DC2RVA Tier II FEIS and ROD*

Published: 2019

This 123-mile corridor would increase passenger train speeds to 90 mph and operate between Washington Union Station and Main Street Station in Richmond every 1 to 2 hours in each direction during the day and early evening hours. Construction of the corridor improvements is anticipated to occur incrementally during a 20-year planning horizon from 2025 to 2045, and the full benefits of DC2RVA corridor service will be dependent on completion of other projects outside of the corridor, including the Long Bridge project, SEHSR Richmond to Raleigh project, and the SEHSR Richmond to Hampton Roads project. A Tier II FEIS and ROD<sup>17</sup> has been published and signed. The project is a Tier II National Environmental Policy Act (NEPA) study that builds upon the previous Tier I documentation for the SEHSR corridor between Washington, DC, and Charlotte.

### *SEHSR Richmond, VA, to Raleigh, NC (R2R) Tier II FEIS and ROD*

Published: 2015

This 162-mile corridor would provide a new 110-mph connection between Main Street Station in Richmond and Raleigh Union Station in North Carolina, a portion of which would use a currently inactive section of the CSXT S-Line. New stations would be constructed at Henderson, NC, and La Crosse, VA. Additional evaluation of other station locations is currently being considered for at least a subset of train frequencies through this corridor. The new connection would host four daily higher-speed round trips between Richmond and Raleigh. Three of these daily trips are anticipated to be a result of high-speed train service connecting Charlotte to New York City via Richmond and Washington, DC. The fourth connects Raleigh to New York City via Richmond and Washington, DC. As such, the full benefits of R2R corridor service will be dependent on the completion of other projects outside of the R2R corridor, including DC2RVA. The Final Tier II EIS has been signed.<sup>18</sup>

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<sup>16</sup> <https://longbridgeproject.com/feisrod/>

<sup>17</sup> <https://dc2rvarail.com/final-eis/>

<sup>18</sup> <https://connect.ncdot.gov/resources/Rail-Division-Resources/Documents/SEHSR%20Raleigh%20to%20Richmond%20Signed%20Record%20of%20Decision.pdf>

### *Atlanta to Charlotte Tier I FEIS and ROD*

Published: 2021

This plan<sup>19</sup> recommends the development of an approximately 280-mile corridor connecting Hartsfield-Jackson Atlanta International Airport in Georgia and the proposed Charlotte Gateway Station in North Carolina. The Final Tier I EIS identifies the Greenfield alignment as the Preferred Alternative, with passenger rail segregated from freight track for most of the distance between Charlotte and Atlanta. While a rail technology has not yet been selected, potential impacts were identified for a range of speeds in the Greenfield alignment. The prior economic benefits study for the SEC (see **Section 1.2.1**) relies on impacts from the 125-mph diesel electric technology alternative, which will result in a more conservative estimate of benefits than if the 220-mph electrified alternative is identified as the Preferred Alternative in future studies. A subsequent Tier II EIS is needed to further identify design parameters and specific environmental impacts.

The Greenfield Corridor Alternative consists of the following segments and is shown in **Figure 16**, below:

- Between Charlotte Gateway Station to the CLT Airport Station: Potentially operating at speeds of 80 to 110 mph
- Between the Catawba River and South Gastonia: Can sustain speeds of up to 125 mph using diesel or 220 mph using electric propulsion
- Continuing from the North Carolina/South Carolina state line through a stop at the Greenville-Spartanburg International Airport to a station in Anderson, SC: This corridor can support speeds of up to 125 mph using diesel or 220 mph using electric propulsion until reaching the first stop in Georgia
- In Georgia, the corridor continues through Athens to downtown Atlanta: Speeds are generally between 70 mph and 110 mph for both diesel and electric options
- Alternate approaches into Atlanta and Charlotte currently are under consideration and would be evaluated as part of a Tier II NEPA document

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<sup>19</sup> <http://www.dot.ga.gov/InvestSmart/Rail/EIS/Atlanta-Charlotte%20FEIS-ROD%20SIGNED.pdf>

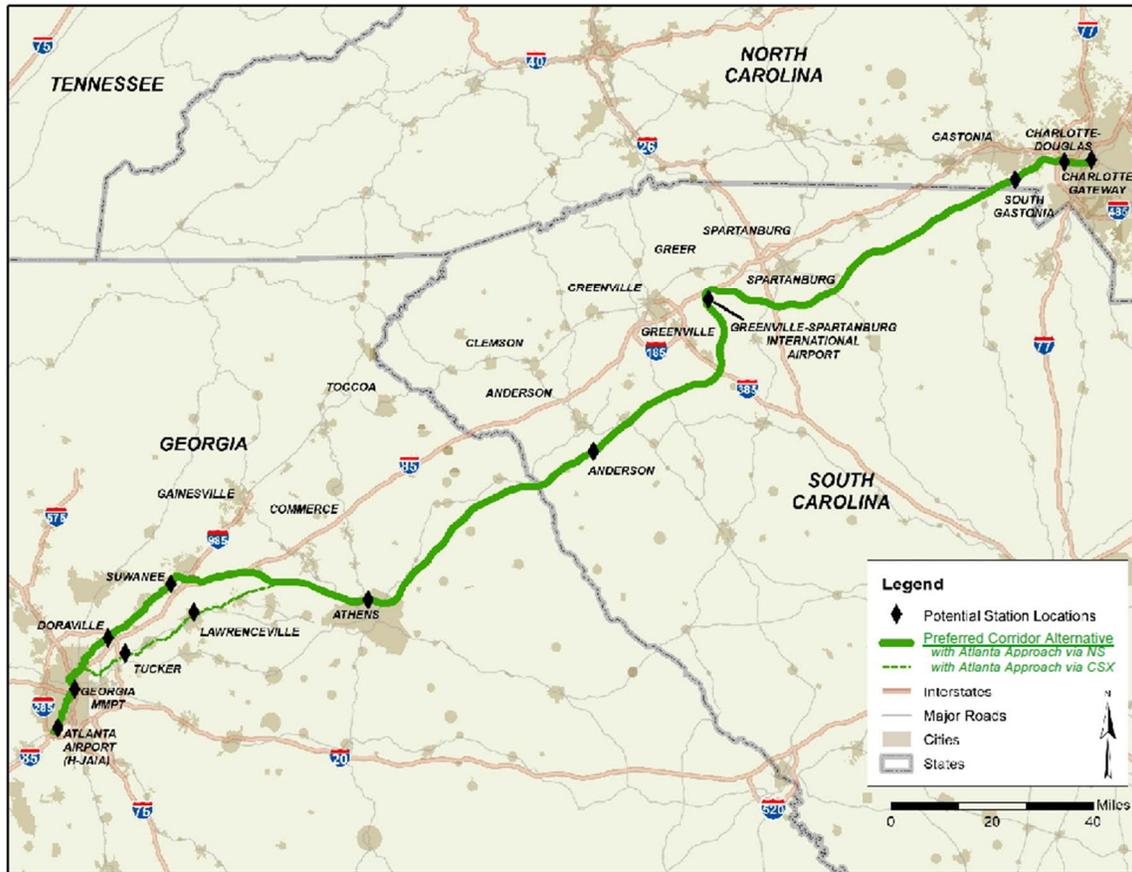


Figure 16: Greenfield Corridor Alternative (2021)

### Atlanta-Chattanooga High-Speed Ground Transportation Tier I ROD

Published: 2017

This 128-mile corridor would connect Hartsfield-Jackson Atlanta International Airport in Georgia and downtown Chattanooga in Tennessee. While speeds, technologies, and alignment configuration will not be determined until the Tier II NEPA process, the Tier I ROD<sup>20</sup> identified the preferred corridor alternative, shown in **Figure 17**, as a 1,000-foot-wide corridor that follows existing I-75 ROW in Georgia and CSXT ROW in Tennessee. The corridor would serve proposed stations in Hartsfield-Jackson Atlanta International Airport, downtown Atlanta, Cumberland, Town Center, Cartersville, and Dalton in Georgia and Chattanooga Metropolitan Airport and downtown Chattanooga in Tennessee. Daily ridership for this preferred alternative would be 11,725.

<sup>20</sup> <http://www.dot.ga.gov/InvestSmart/Rail/AtiChatt/Atlanta-Chattanooga%20HSGT-Final-FEIS-ROD.pdf>

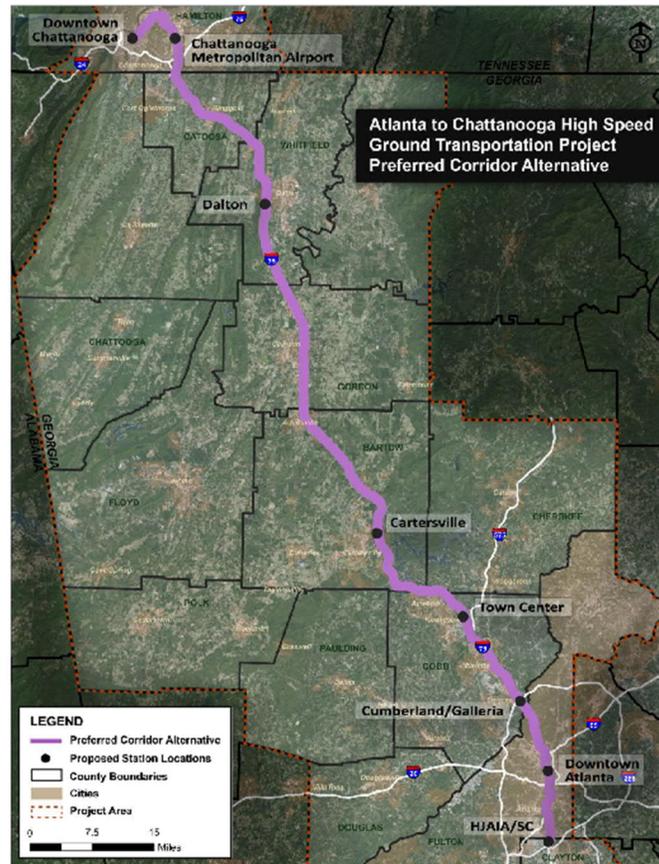


Figure 17: Atlanta to Chattanooga Preferred Alternative (2017)

*GDOT High-Speed Rail Planning Services Report*

Published: 2012

This planning effort from 2012<sup>21</sup> evaluated the feasibility of HSR service in corridors connecting Atlanta to Jacksonville, Nashville, and Birmingham. The study identified potential alignments for both shared track with freight rail and dedicated passenger rail as well as a spectrum of technologies and travel speed for each corridor. Planning-level costs and ridership estimates were developed for each alternative, as were proposed potential station locations.

The SEHSR Corridor includes a segment from Atlanta to Jacksonville. The segment starts in Atlanta, passes through Hartsfield-Jackson Atlanta International Airport, Macon, and Jesup (with a possible stop in Griffin), and terminates at the Jacksonville Regional Transportation Center currently under construction. In Jesup, the segment merges with another section of the SEHSR Corridor that passes through Columbia, SC. The I-75 Corridor Coalition, a group organized to foster planning initiatives for the I-75 Corridor between metro Atlanta and to the south of Macon, endorses HSR connecting these cities.

This corridor was most recently evaluated in the 2012 High-Speed Rail Planning Services, Final Report. In contrast to previous studies, this study proposed and examined a route that bypasses Jesup, and instead travels through Savannah and Brunswick because the larger populations of

<sup>21</sup> <http://www.dot.ga.gov/InvestSmart/Rail/Rail/High%20Speed%20Rail%20Planning%20Rail-Final%20Report.pdf>

these areas would translate to increased service ridership and revenue for the service. The new route merges with another section of the SEHSR Corridor in Savannah. The study evaluated an emerging HSR shared-use and express high-speed dedicated-use alternatives along a variety of corridors between Atlanta and Jacksonville. The alternatives for a shared-use and dedicated-use route are shown in **Figure 18**.

The study finds that HSR is feasible in the Atlanta-to-Jacksonville corridor. The study recommends a Tier I NEPA analysis as the next step of this project. A project sponsor has not been identified for a Tier I NEPA analysis. GDOT will continue to explore opportunities with potential project sponsors or public-private partnerships to advance the projects.



Figure 18: Atlanta-to-Jacksonville Potential Alignments (2012)

## 2.2 Regional and Emerging Corridor Development Plans

As noted previously, multiple states and metropolitan or regional partners are working on developing corridors to improve services on Regional and Emerging segments, as defined by the SE Study.

All Regional and Emerging segments of the SEC are shown in **Figures 19 and 20**, respectively. Speeds shown are representative of planned maximum operating speeds associated with improvements. In some areas of the corridor, meeting these speeds will require additional coordination with freight railroads that currently have limits on passenger rail speeds.

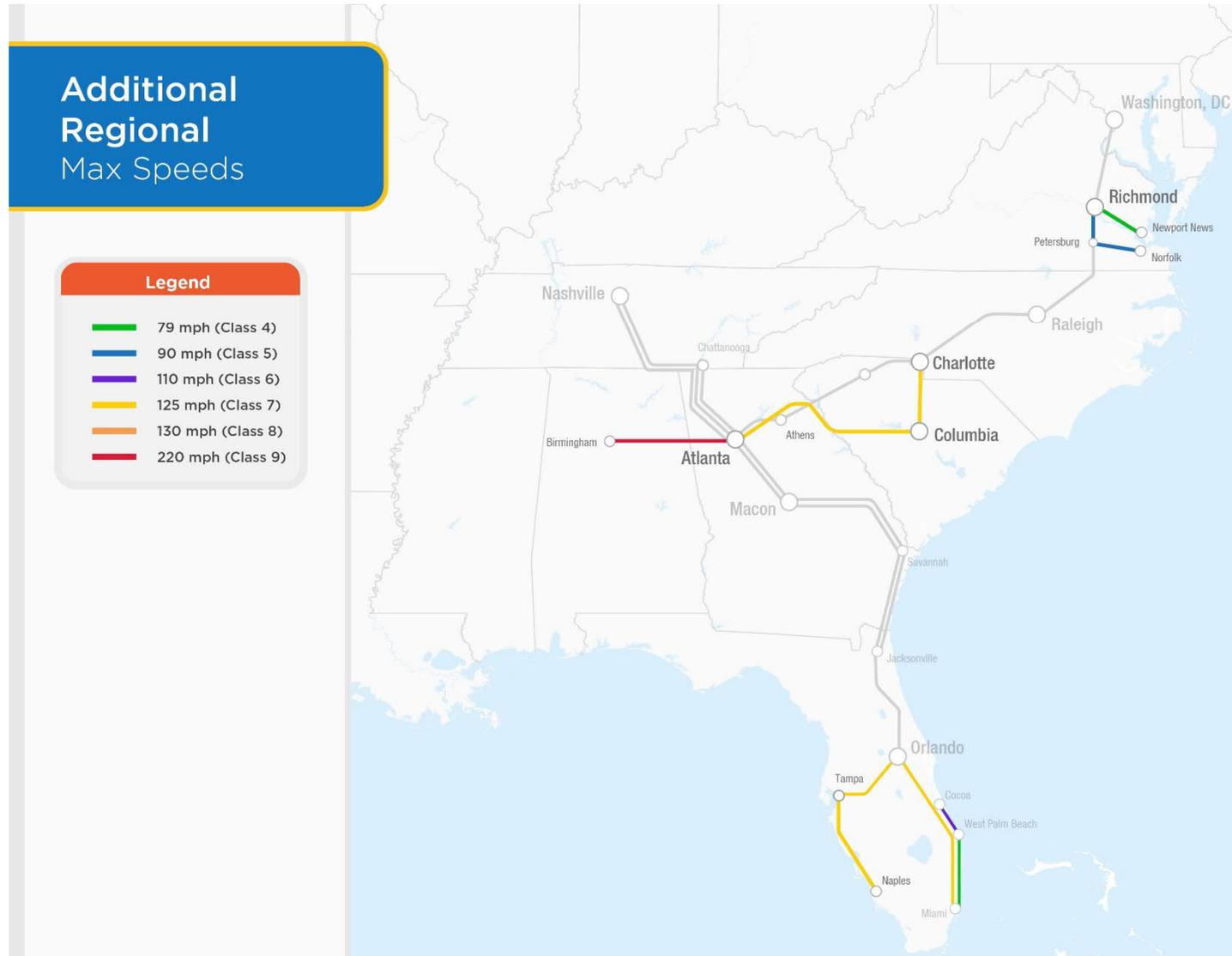


Figure 19: Max Speeds of Additional Regional Segments

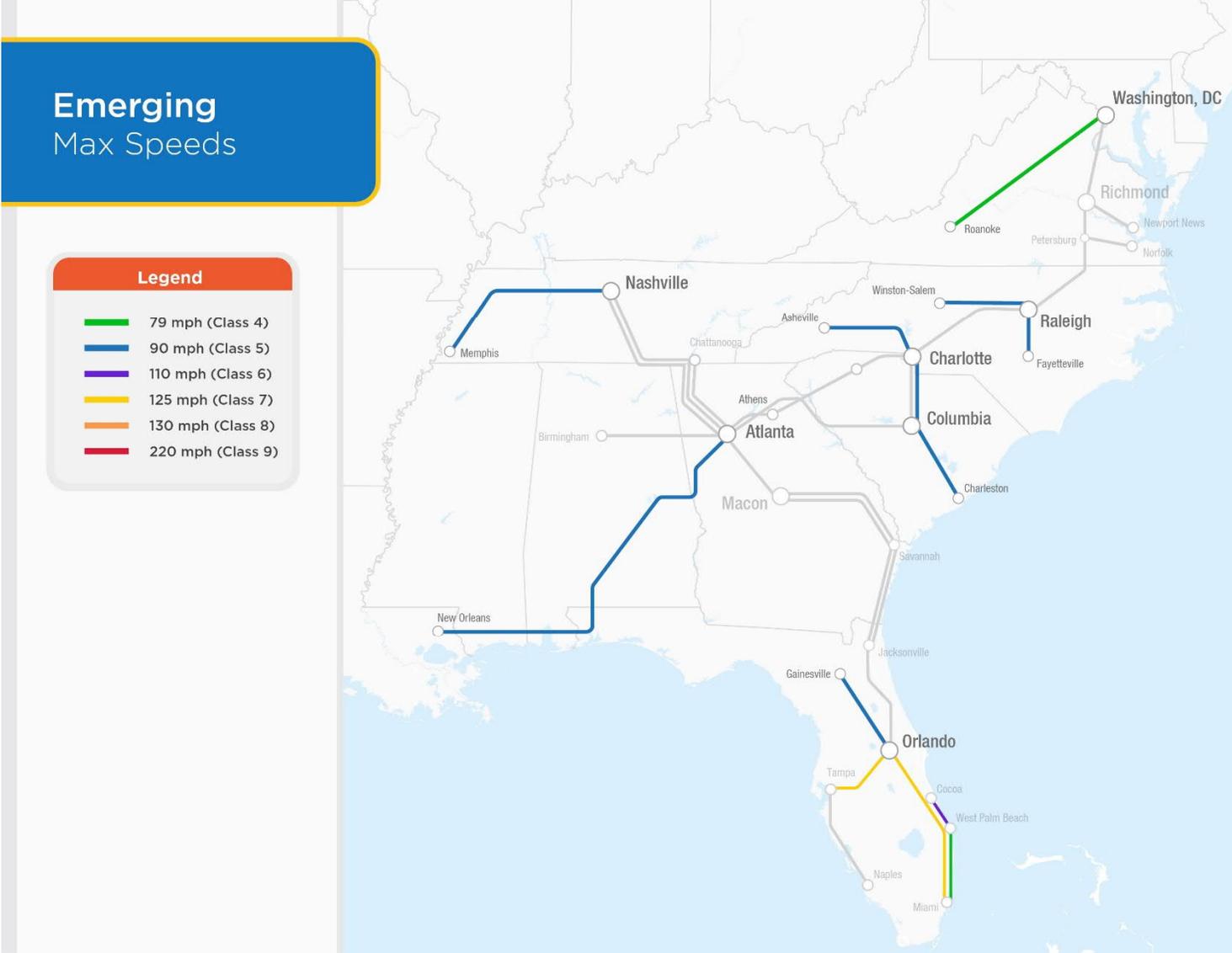


Figure 20: Max Speeds on Emerging Segments

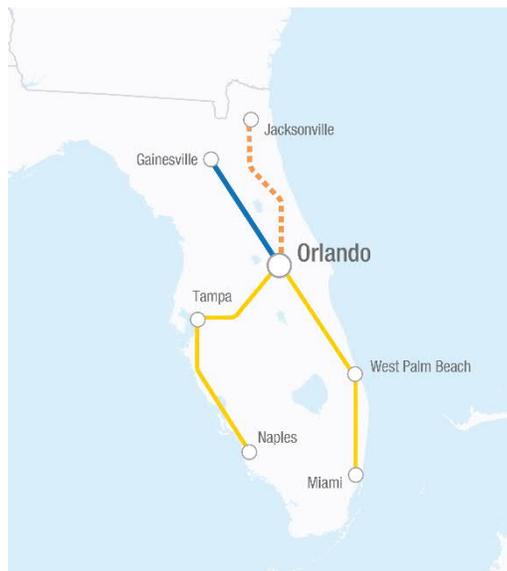
### 2.2.1 State-Led Efforts to Develop Regional and Emerging Corridors

The SEC provides a framework for developing high-performance interstate passenger rail and individual states are extending the development of the network themselves through efforts advancing enhanced services on the Regional and Emerging corridors. Progress has been made on these corridors in areas where states have identified critical intrastate passenger rail connections that are being underserved. Three SEC member states—Florida, North Carolina, and Virginia—are engaged in large rail network programs aimed at improving passenger mobility between metropolitan areas within their states.

Virginia’s program, Transforming Rail in Virginia, will deliver phased capital improvements along the high-performance network between Washington, DC, and Richmond, but also will improve regional and emerging lines. Existing rail connections to Norfolk, Newport News, and Roanoke have programmed improvements that will increase capacity, reliability, and frequency on the passenger rail network. Virginia also plans to extend services to Roanoke further south along the Interstate 81 corridor to the New River Valley. Virginia and Tennessee are exploring an extension of passenger rail that could eventually connect the New River Valley through Bristol to Knoxville.



In addition to pursuing the Raleigh-to-Richmond portion of the SEC, North Carolina is in the process of adding a fifth Raleigh-to-Charlotte round trip and is working with NCRRT to identify the improvements needed to add a sixth frequency. North Carolina also has several passenger rail studies underway to evaluate services connecting additional communities to the SEC, including Asheville and Salisbury, north of Charlotte, and Wilmington, south of Raleigh. Additional studies are underway to look at services to Fayetteville and Greenville.



Florida is planning to expand the regional network in the central and southern parts of the state ahead of the future high-performance segment connecting Orlando to Jacksonville. Florida is working with a private partner, Brightline, to develop connections between Tampa, Orlando, and Miami. Rail service has begun between West Palm Beach and Miami and the extension of this service to Cocoa Beach and Orlando is under construction. Operations between Orlando and Cocoa Beach are expected to begin in 2023. Future phases will link service to Orlando International Airport and Tampa. FRA just awarded a grant to Brightline to begin preliminary engineering on the

Orlando-to-Tampa segment. Along with privately-operated Brightline service, Florida is currently investigating the opportunities on the regional network for operating state-supported Amtrak services.

The following plans detail the environmental documentation for regional network improvements in Virginia’s Transforming Rail in Virginia program and Florida’s Brightline partnership. Planning efforts in other Regional and Emerging corridors across the Southeast are currently underway.

*Richmond-Hampton Roads Passenger Rail Project – Tier I FEIS and ROD*

Published: 2012

This Tier I FEIS<sup>22</sup> proposed passenger rail service improvements in the major east-west travel corridor linking Richmond and the Hampton Roads region of Virginia via 1) the existing CSXT/Amtrak route from Richmond to Newport News north of the James River on the Virginia Peninsula (Peninsula/CSXT) (one additional round trip) and 2) the NS rail route south of the James River between Petersburg and Norfolk (Southside/NS) (three round trips). At the time, there was no passenger rail service operating on the Southside/NS route being evaluated. Successful implementation of this service improvement required the re-establishment of a link between the NS track and tracks utilized by CSXT and Amtrak passenger trains in Petersburg.<sup>23</sup>

The speed to Norfolk is 90 MPH per the NEPA Tier I ROD, but NS has issued a letter saying that speeds are capped at 79 mph unless passenger tracks are 25 to 30 feet from freight tracks. Specific alignments will be considered for high-speed rail in Tier II.

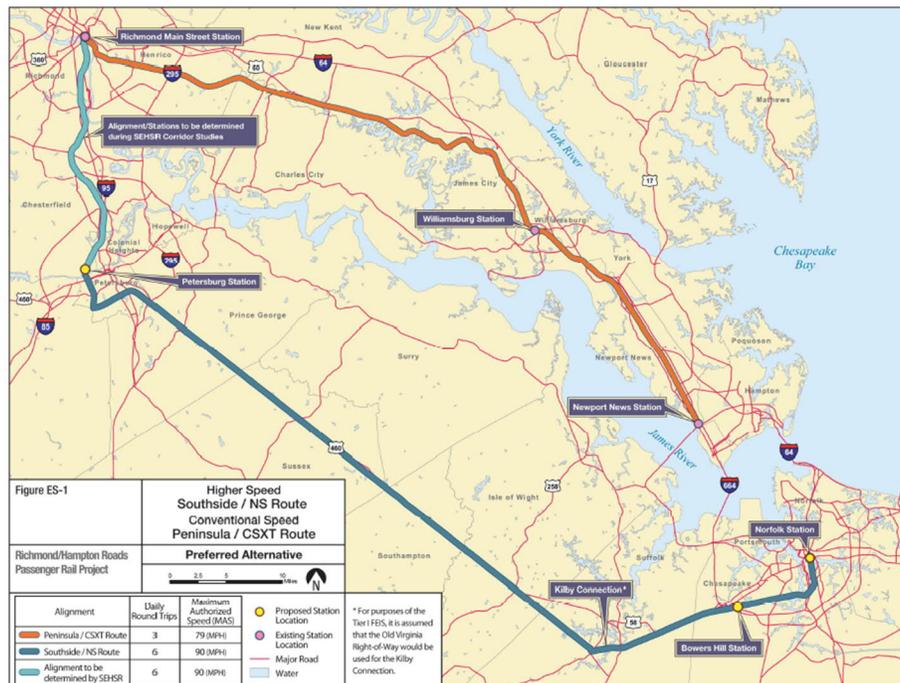


Figure 21: Richmond-Hampton Roads Corridor (2012)

<sup>22</sup> <https://railroads.dot.gov/elibrary/richmond-hampton-roads-passenger-rail-project-tier-i-eis-record-decision>

<sup>23</sup> As the study was being developed, DRPT, NS, and Amtrak worked together to start one round trip frequency to Norfolk in late 2012.

*All Aboard Florida Final Environmental Impact Statement*

Published: 2015

This project<sup>24</sup> would provide reliable and convenient intercity passenger rail transportation between Orlando and Miami. The project would span 235 miles, with a travel time of three hours. Stations would be located in Orlando, West Palm Beach, Fort Lauderdale, and Miami, as shown in **Figure 22**.



Figure 22: All Aboard Florida Intercity Passenger Rail Project (2015)

<sup>24</sup> <https://railroads.dot.gov/environmental-reviews/all-aboard-florida/all-aboard-florida-miami-orlando-passenger-rail-service-1>

## 3.0 Future Service and Infrastructure

The scope and scale of improvements planned along the SEC High-Performance Rail Network will be challenging to realize. This section recommends an approach for tackling this daunting task by starting with a vision for service and matching incremental infrastructure development.

### 3.1 Lessons Learned from the Transforming Rail in Virginia Initiative

The Transforming Rail in Virginia initiative has successfully employed two key strategies to progress development of the corridor between Washington, DC, and Richmond:

- Change the mindset of development from “infrastructure first” to “service first” by developing a service plan that informs infrastructure needs
- Promote “wins” for all rail users on the corridor to support strong partnership and engagement between passenger and freight rail stakeholders

#### Service-First Approach

Railroads are inherently inflexible systems; thus, building to provide service flexibility is directly connected to increased capital investment costs. To avoid overbuilding and overspending, the desired level of service (frequency and span of trips) must first be understood. Planning infrastructure first means the service operated will match what will be built.

When infrastructure improvements are not guided by service goals, agencies can end up making major investments that cannot be utilized to their full potential due to constraints elsewhere on the network. As an example, the Long Island Railroad East Side Access project improved capacity by enabling new service to Grand Central station; however, the network could not support any new service east of Jamaica station. An understanding of the service the Metropolitan Transportation Authority (NY MTA) wanted to operate would have shown that the improvements would create more trips than the network could support and, thus, a systemwide program of improvements was necessary. Planning the service first would have allowed for more efficient spending to yield maximum benefits with fewer delays to service improvements.

Driving the planning process based on a desired level of service allows investment to be targeted to achieve specific goals. Goals should be used to develop potential service plans, which can then be used to develop infrastructure needs. This is then iterated to optimize and determine final infrastructure needs to support the service plan. Due to the scale of the SEC, such detailed planning may not be possible for the entire network, but it could be possible on a corridor-by-corridor basis. A potential schedule for this approach to planning would look like:

- 1. Definition of Service Goals**
- 2. Evaluation of Market Pairs (City to City) and Potential**
- 3. Service Plan Development**
- 4. Coordination with Railroads**
- 5. Investment Program Development**
- 6. Environmental Clearance**
- 7. Acquisition**

It is important that environmental clearance, through NEPA, follows the service planning steps. When projects pass through NEPA without a service goal in mind, the eventual service can end up being dictated by the preferred NEPA alternative. As a result, systems can be overbuilt, leading to increased capital and maintenance costs. It is recommended that NEPA focus on the infrastructure improvements to support service and investment planning.

### Incremental Development

Service goals should have medium- to long-term horizons to accommodate the growth in ridership and allow for incremental service improvements as infrastructure is being constructed. Long-term goals allow an understanding of what infrastructure needs to be available *and when* to allow for incremental service improvements, thereby avoiding stranded assets. These phased improvements should achieve step-changes in service, such as two new trains per day, and related performance needs. Understanding the infrastructure necessary for each service phase helps avoid infrastructure improvements that do not provide significant improvement in service.

As an example of this, the service plans and infrastructure improvements under Transforming Rail in Virginia are divided into four phases with clear service goals driving which projects fall into each phase.

Service goals should be data-driven and developed to achieve informed and realistic goals. Other variables should be informed by service goals rather than the reverse. For example, speed should be determined by assessing if higher speeds would achieve service goals by producing additional ridership or capturing a new market. Service goals also should be targeted to the appropriate market. One rail service is not able to do all things and serve all markets; such flexibility requires additional capital investments.

The evaluation of market pairs is a tool to determine where rail can be a competitive mode and can enable service plans to be tailored around being competitive in that market—for example, is rail serving business travelers at peak times or is it best suited to the more flexible tourist market? HSR investments should be aligned with the travel market in which they are competitive—the 200- to 600-mile distance. For the Transforming Rail in Virginia initiative, this meant focusing on the Washington, DC, to Richmond market when developing the service plan.

### Building Corridor Partnerships

The acquisition of ROW and railroad should be approached from a corridor planning perspective that includes all users including freight, intercity passenger, long-distance passenger, and commuter. The key to meaningful engagement among all potential users of the corridor is to develop a service plan that will optimize all services, and not just intercity passenger rail. The first step is aligning the public sector passenger rail agencies to provide a clear voice and message of needs when coordinating with the freight railroad. Having Amtrak, commuter railroads, and the state all on the same page allows for more effective negotiation. For the Transforming Rail in Virginia initiative, Amtrak and VRE's goals were considered and certain elements, like long-distance trains, were determined to be more like "freight" than passenger.

The Transforming Rail in Virginia initiative was successful in showing all parties (Amtrak, VRE, DRPT, and CSXT) the benefits that could result from the proposed service plan—including reduced delays for all parties and improved reliability. Including all parties in the service plan will

ensure that infrastructure investments will benefit all users and align incentives to achieve the plan.

This engagement extends to states for services that cross state borders. Investment should not stop at state lines as service extends beyond them and improvements on a corridor in one state will not be able to be fully effective if the rest of the corridor in another state cannot be included in a program of investments. The benefit of service first planning is that it can enable slot-based scheduling since the infrastructure is specified to carry a certain level of service. Slot-based scheduling allows different states' service plans to be integrated together by enabling states to pay to activate and operate service during inactive slots in an existing schedule.

### Best Practice Case Study: Integrated Rail Planning in California

California developed its most recent SRP with network integration as its theme, creating a vision for statewide interconnected passenger rail and identifying infrastructure improvements required to achieve that vision. The **California State Rail Plan (CSRP)** process began with a statewide market assessment and rail infrastructure review to evaluate the degree of market capture that could be expected for an interconnected schedule and identify infrastructure constraints in the network. For the purposes of the SEC Development Strategy, it is important to note that the 2040 vision for passenger rail in California focused on integrating service plans and increasing passenger convenience as opposed to achieving specific speeds. The plan was published by Caltrans in 2018.<sup>25</sup>

Following the CSRP in 2018, and the Connected Communities North Study, which looked at integrating HSR and commuter services on the Peninsula Corridor, Caltrain began its first-ever business planning process to coordinate development along the Peninsula Corridor. The **Caltrain Business Plan** was a collaborative effort led by Caltrain to develop an integrated plan for growth between 2018 and 2020.<sup>26</sup> The work included agency partners, Stanford University, and communities along the corridor, along with Union Pacific (UPRR), the owner of the corridor.

#### KEY ELEMENTS OF CSRP 2040 VISION

- **Statewide System** – Passenger rail service will tie together urban, suburban, and rural areas of the state.
- **Integrated Services** – Multimodal hubs will connect all levels of service with a common fare system.
- **Coordinated Schedules** – Services will be coordinated in a "Pulsed" schedule across the network to reduce wait times and allow direct transfers.
- **Frequent Service** – Service frequency will make rail a timely option for travelers, meeting trip demands throughout the day.
- **Customer Focus** – Enhanced ticketing, scheduling, and passenger information will be supported by coordinated services.

<sup>25</sup> <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>

<sup>26</sup> <https://caltrain2040.org/resources/>

Like Transforming Rail in Virginia, the Caltrain Business Plan focused on service first, specifically matching service to how much growth and development stakeholders wanted along the corridor and riders' needs. This led to the development of four major focus areas that address key questions shaping the future of the railroad.

The first focus area is Service, which led to the development of service vision options based on the level of desired growth and the strategy for delivering service over no more than three tracks, as additional tracks were banned on the corridor by Congressional legislation. The service vision options went to 2040, supporting the CSRP vision, and included detailed service planning to meet the market demand/community needs.

In addition to assessing each potential service vision against economic factors as part of the Business Case, Caltrain put substantial effort into its community interface and organizational analysis to deliver this immense program over the next two decades.

The Caltrain Business Plan unified the surrounding communities through meaningful engagement in developing service options and created an avenue to talk about land use and equity. In addition, as 60 grade separations are needed to meet the desired service plan, the process created opportunities for thoughtful project development and community input. The plan has now moved into implementation.

### 3.2 SEC Existing and Future Service

The service diagrams in this section show all the service between major stations on the High-Performance Rail Network, even if those services do not terminate within the network. For example, all trains between Washington, DC, and Richmond are shown here, though many leave the High-Performance Rail Network and terminate elsewhere. These services can still provide connections to other trains in the corridor. Similarly, the Palmetto, Silver Star, and Silver Meteor services are included where they are on the High-Performance Rail Network, though these trains leave the alignment further south.

#### CALTRAIN BUSINESS PLAN FOCUS AREAS

- **Service** – What is the best service to meet the needs of our communities? How many trains and how frequently? How many riders? What infrastructure improvements are needed to support service? How can Caltrain effectively connect to other transit services?
- **Business Case** – Why should we choose one service vision over another? How can we maximize the value of current and future investments? How much will the service cost to operate? How will we fund it?
- **Community Interface** – What are the benefits and impacts to each community? How can we work together to grow the railroad in a way that balances the needs of all communities? How can we ensure this planning process, and the outcomes, are equitable?
- **Organization** – What is the best organizational structure for overseeing and growing Caltrain service in the future? Can Caltrain effectively connect to other transit services?

The existing service shown in

**Figure 23** is as of 2022 and based on an expanded service schedule due to Transforming Rail in Virginia post-acquisition service improvements. Prior to 2022, there was one less Virginia state-supported train terminating in Richmond.

The future service shown in

**Figure 24** is based on the current plans and EIS documents highlighted in the previous section. These service increases will likely occur in phases from 2022 until 2045. Only new services to Atlanta are shown, as the plans for services connecting to Tennessee and Florida are still in early planning stages.

The trains that are extended into long-distance trains may no longer be state-supported services and may be rebranded, though how these trains are funded and operated remains undefined at this time (indicated in blue). Extensions of existing state-supported routes may exceed the current 750-mile limit for state-supported routes and could require extensive coordination with FRA, Amtrak, and partner states to include improved services as a part of the national network.

The major improvements to service from 2022 to 2045 are:

- Virginia:
  - In late 2022, an additional Virginia state-supported train from Washington, DC, to Roanoke is planned to begin, as well as an additional (third) roundtrip train from Washington, DC, to Norfolk
  - In 2026, an additional (third) roundtrip train from Washington, DC, to Newport News, and a new (second) round trip from Washington, DC, to Richmond is planned
  - In 2026, trains going to Roanoke will be extended to the New River Valley
  - In 2030, three additional roundtrip trains (third, fourth, and fifth) from Washington, DC, to Richmond are planned
  - Four new trains are planned to extend the length of the corridor, from Washington, DC, to Richmond and then following the new S-Line alignment to Raleigh, and the new greenfield alignment to Atlanta
  - In total, there will be 15 trains per day between Washington, DC, and Richmond
- North Carolina:
  - Three existing Piedmont trains will be extended south to Atlanta following the new greenfield alignment
  - Four new trains are planned to extend the length of the corridor, from Washington, DC to Richmond and then following the new S-line alignment to Raleigh and the new greenfield alignment to Atlanta
  - There will be one new train from Raleigh to Atlanta following the greenfield alignment
  - The Silver Star will remain in service but utilize the new, faster S-Line alignment
  - The Carolinian will continue serving the A-Line alignment and stations
  - In total, there will be six trains per day connecting Raleigh to the northern SEC, and 10 trains connecting south

- Georgia:
  - In addition to the eight new trains originating north of Charlotte, there will be eight additional trains from Charlotte to Atlanta on the new greenfield alignment for a total of 16 trains per day

For many parts of the High-Performance Rail Network, customers will go from one available train per day to roughly one train available per hour during the day.

These service diagrams do not represent detailed service plans and do not include time of day for departures. ***Detailed service planning is a future requirement to determine how these trains will be scheduled and which trains are actual extensions versus multi-seat rides requiring a transfer.***

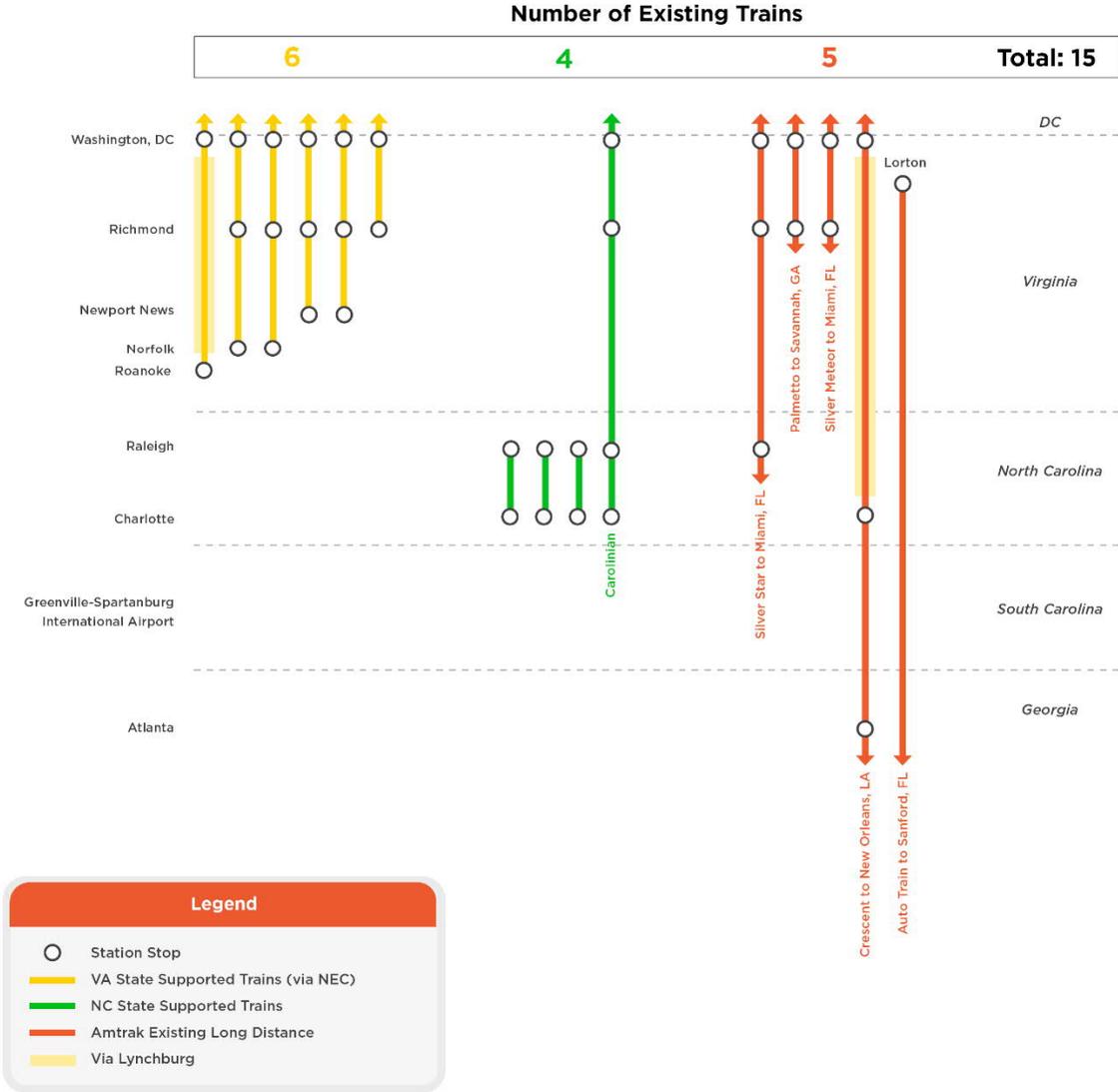


Figure 23: Existing Service on the Southeast Corridor

Number of New/Extended/Existing Trains

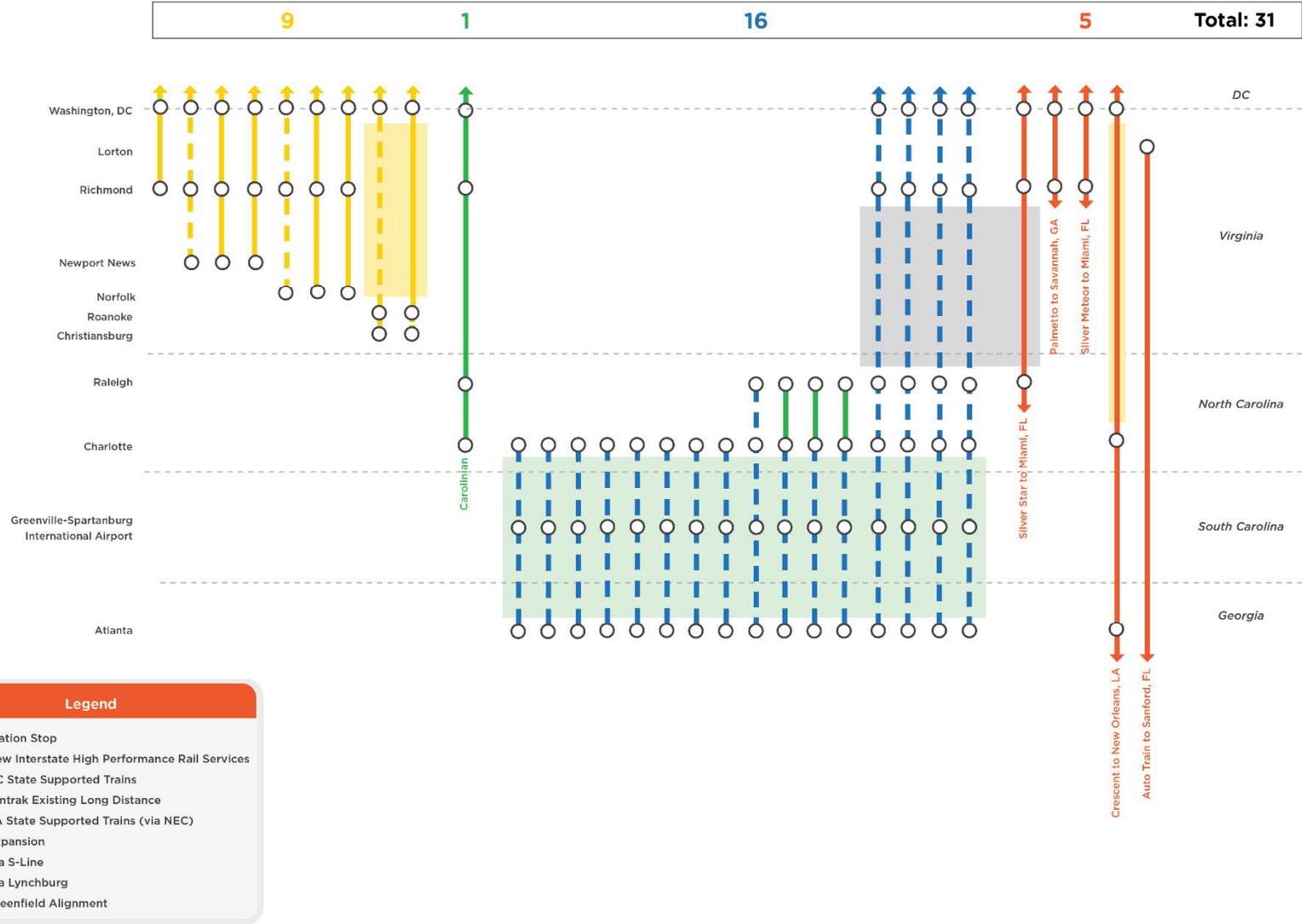


Figure 24: Future Service on the Southeast Corridor

### 3.3 Required Infrastructure Improvements

Significant infrastructure improvements are required to provide roughly hourly services along most of the High-Performance Rail Network (**Figure 25**). For example, in the first two phases of Transforming Rail in Virginia, 37 new miles of track will be added between Washington, DC, and Richmond. Critically, the new Long Bridge project alone will construct five new rail bridges to provide additional capacity over the Potomac River between Washington, DC, and Virginia and alleviate a major bottleneck on the current rail system. Station improvements also are planned along the corridor by VRE, though these improvements are not tied to the service increases and can happen independently of the phased schedule.

To improve travel times and reliability between Richmond and Raleigh, the abandoned S-Line is being purchased from CSXT. To become operational, this line requires 144 miles of new track, new signals, 114 new grade separations, and construction of three new stations.

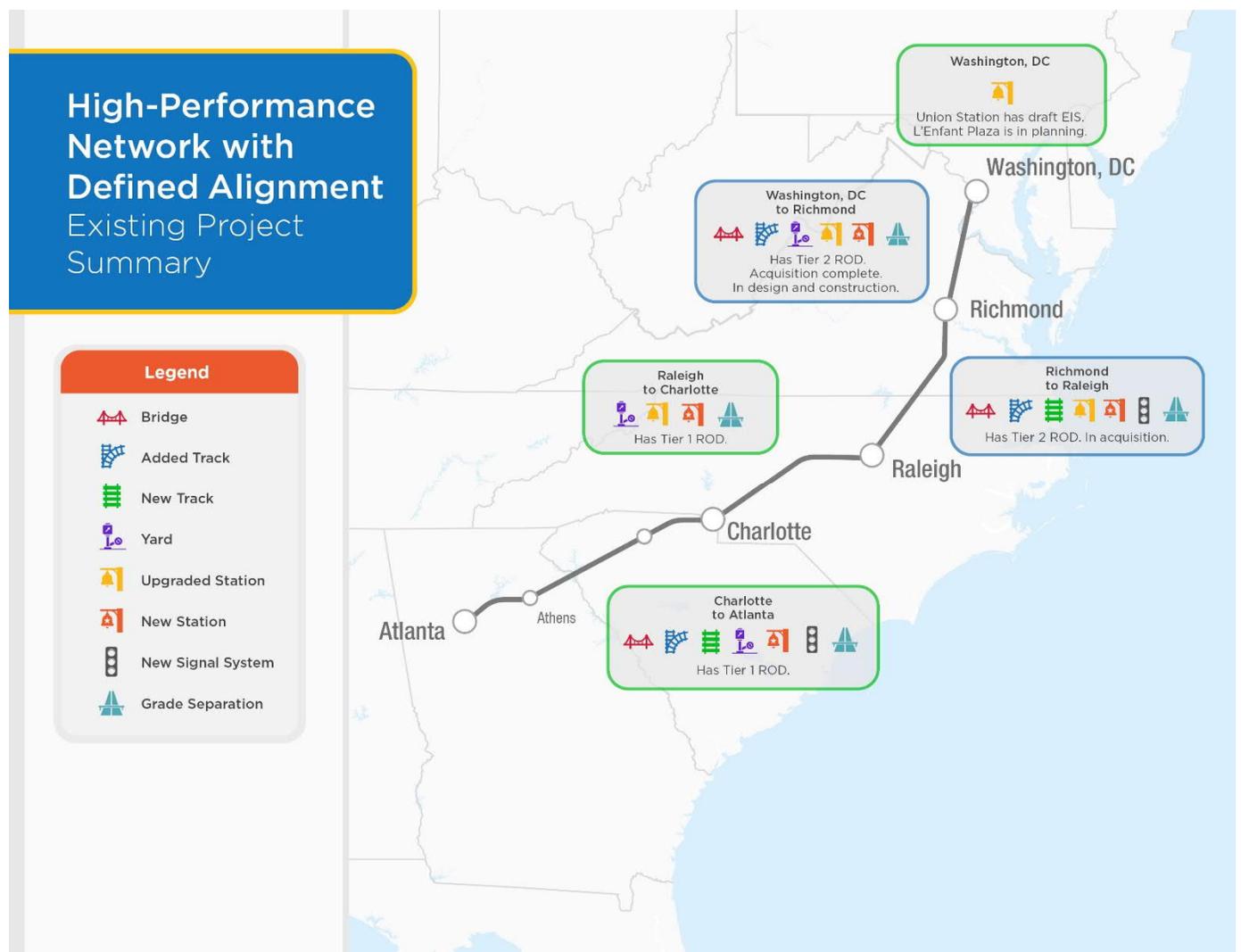


Figure 25: Projects Along the High-Performance Network with Defined Alignment

As the alignment between Charlotte and Atlanta is greenfield, this segment will require more than 500 miles of new track, the alignment avoids major structures over lakes and rivers, and construction of nine new stations. New train control and signals also will be required, and potentially electrification and power distribution infrastructure if the preferred alternative is electric propulsion.

While the Transforming Rail in Virginia program has phased projects to meet specific capital improvements and service plans, phased plans are yet to be developed for other segments of the corridor. Creating short- and long-term service goals, and coordinating corridor partners on delivery of those goals, is the next step for much of the corridor.

### Crewing Locations

The significant increase in service along the High-Performance Rail Network also will require changes to staffing train operations and an investment in a new facility to support train operations. **Figure 26** shows the existing conductor and engineer (i.e., train and engine) crewing locations for Amtrak routes in the eastern United States. Currently, only the daily long-distance Crescent service connects between Charlotte and Atlanta (on a different alignment than the greenfield proposal), with the nearest crewing locations, known as crewbases, located in Charlotte and in Meridian, MS. Due to the current service pattern, Amtrak currently uses Atlanta as a layover facility, at which conductors and engineers wait for the train in the opposite direction to return to their home crewbase.

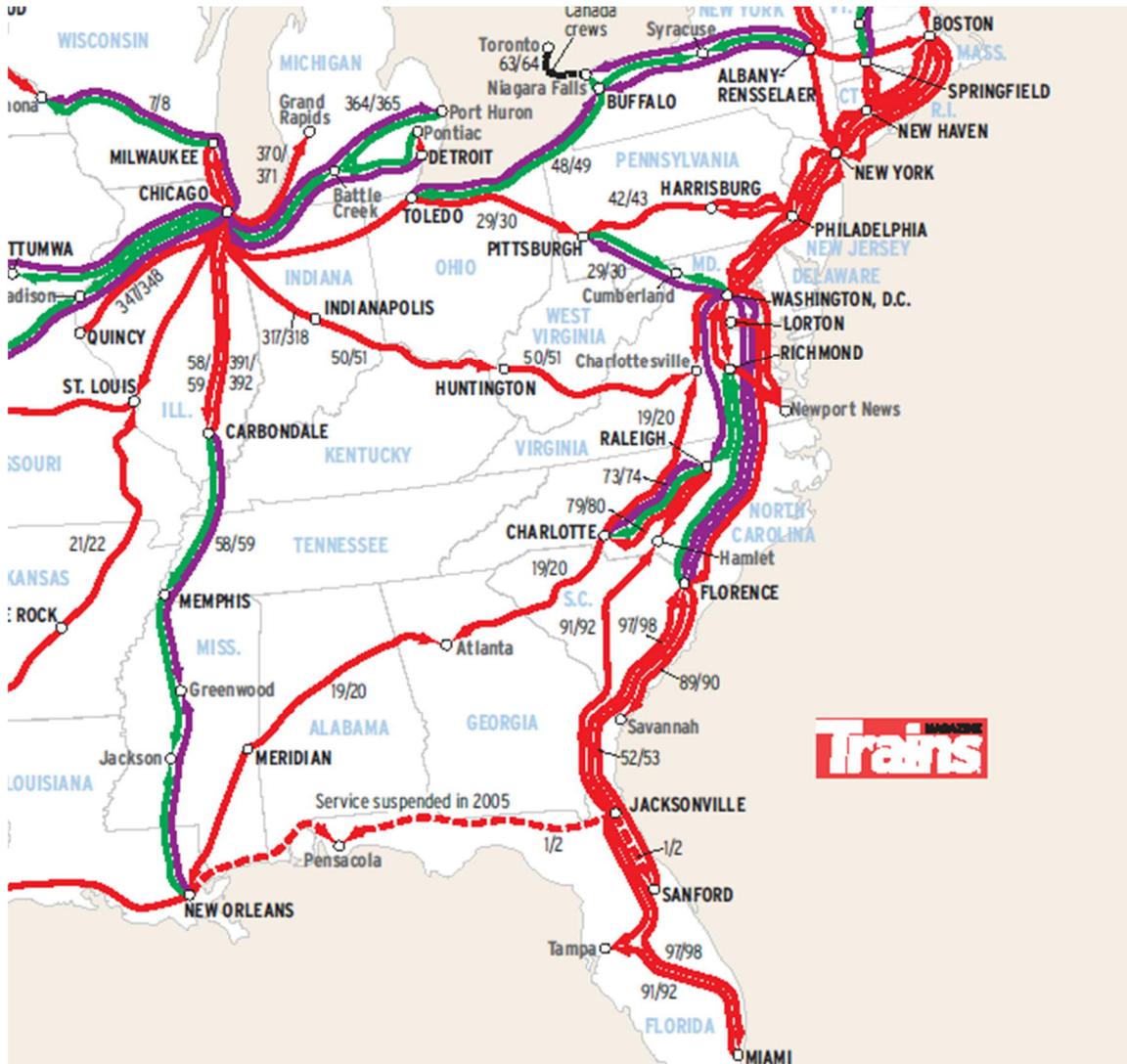


Figure 26: Amtrak Crewing Locations

With future service moving from daily to hourly service between Charlotte to Atlanta, a new train and engine crewbase in Atlanta will need to be established to support the increase in train operations. Establishing a crewbase in Atlanta will increase efficiency in train and engine crew utilization between Charlotte and Atlanta (e.g., minimize layover and guarantee time). The additional crewbase also will be required to support future train service between Atlanta and Chattanooga (and further to Nashville), as well as between Atlanta and Jacksonville.

Establishing a new crewbase location will require investment in a facility (that can be adjacent to the station at Atlanta) as well as an investment in supervision and support staff for the crewbase operations (e.g., shift managers, administrative staff, etc.).

## 4.0 Right-of-Way Acquisition

For the purposes of this Development Strategy, right-of-way (ROW) acquisition is focused on gaps in public ownership of the High-Performance Rail Network. While current passenger rail services run on shared or privately owned ROW, the infrastructure needed to provide high-performance rail services will require additional capacity not currently available in the existing private rail network. This section details the locations along the High-Performance Network that would benefit from public ownership for adding passenger rail capacity.

### 4.1 SEC ROW Acquisition Needs

The series of maps that follow illustrate the current ownership of ROW along the High-Performance Rail Network. The map follows the alignment of existing planning documents, including draft and final EIS. Where segments have not progressed that far through planning, the alignments are estimated based on the most recent available plans. Only major station stops are shown in **Figure 27**.

For the segments between Chattanooga and Nashville and all segments south of Atlanta, there have been no detailed planning or environmental studies. Therefore, these segments are kept higher-level as further planning and analysis is needed to determine alignment.

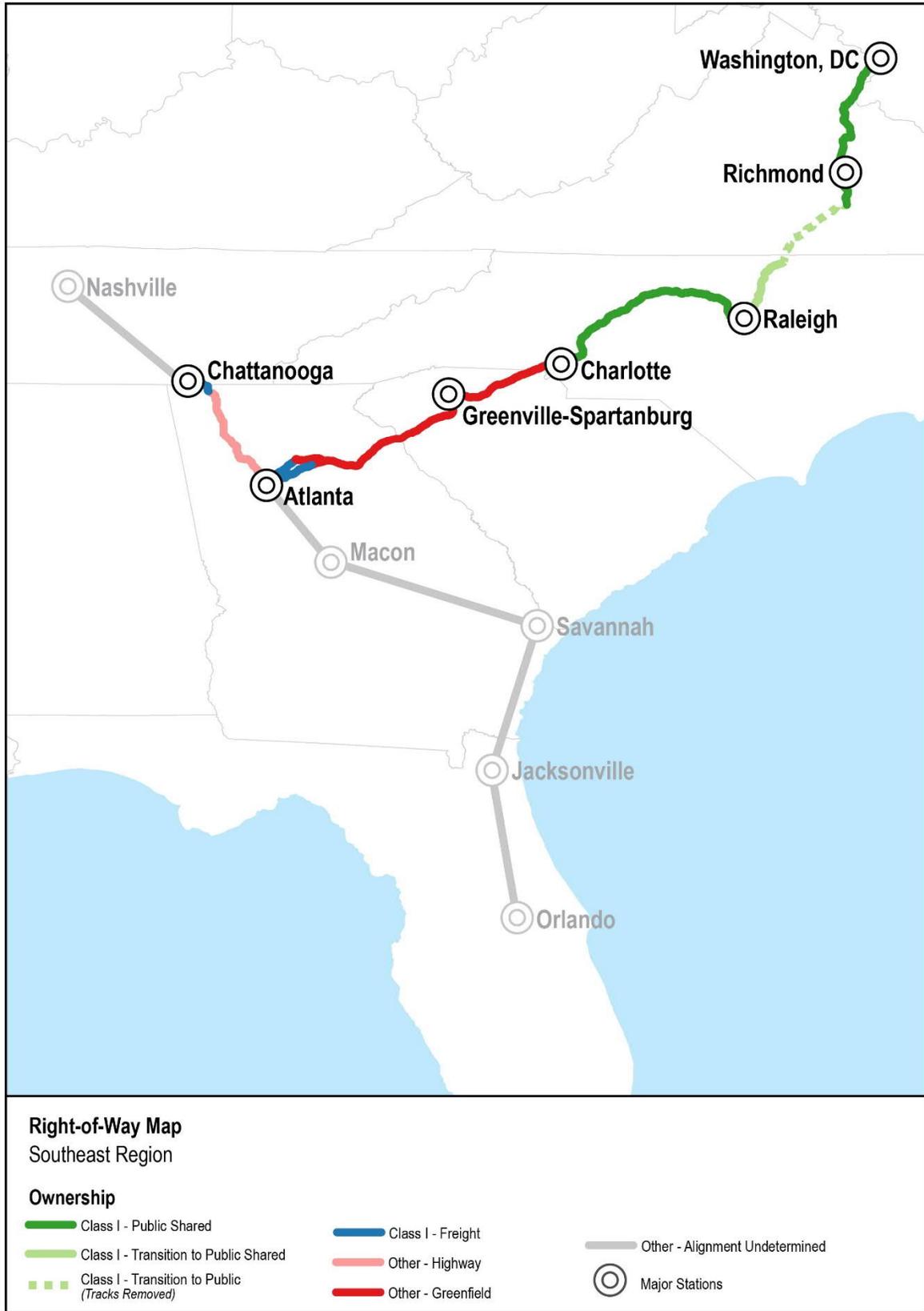


Figure 27: SEC Corridor Regionwide ROW Map

Public shared ROW is divided between private freight rail ownership and public ownership, allowing the public entity to construct and operate on additional track. All segments north of Charlotte are either public shared or transitioning to public shared through ongoing negotiations.

There also is a large section of greenfield ROW between Charlotte and Atlanta that crosses three states, based on the preferred alternative from the Atlanta to Charlotte Passenger Rail Corridor Investment Plan Tier I ROD. There are two potential approaches to Atlanta in the Tier I EIS, shown in **Figure 27**, on either CSXT or NS ROW.

For corridors that have not undergone detailed study—including Chattanooga to Nashville and Atlanta south to Savannah, Jacksonville, and beyond—the connections shown in the map above are based on most recent conceptual-level information from the states. However, as these segments have not undergone planning or environmental analysis, the maps do not reflect actual future routes for service. Therefore, detailed maps of these segments are not included in the state-level section that follows. More planning work is required to develop these maps.

### State-Level Maps

Two sections of the corridor include historic railroad ROW that has been abandoned and tracks have been removed—the CSXT S-Line in Virginia and North Carolina, and the CSXT S-Line in Georgia. The northern segment of the S-Line in Virginia was purchased by Virginia DRPT in 2021 and transitioned to VPRA upon its creation. The segment in North Carolina is currently being negotiated for purchase by NCDOT, as illustrated below in **Figure 28** and **Figure 29**.

**Figure 29** also illustrates NCRRT ownership of the segment between Raleigh and Charlotte. While NCRRT is a corporation, 100 percent of the shares are held by the State of North Carolina.

South of this section transitions to NS ownership, which is where the new greenfield alignment for Atlanta to Charlotte will tie into existing ROW. It is not certain where along the existing ROW the greenfield alignment will tie in under the Tier I EIS. **Figure 30** illustrates the estimated alignment for the preferred alternatives, which may be further refined during the Tier II environmental clearance process.

The greenfield alignment coming into Atlanta from the north will go along either existing CSXT or NS ROW to the terminal area in Atlanta. The approach into Atlanta will be determined during the Tier II EIS process. Going south to Florida, the connection is proposed through Savannah based on Georgia's most recent plans, which differs from the Southeast Regional Rail Plan and SEC Economic Benefits study. However, Georgia's funding to progress planning for this alignment indicates that is more likely to proceed through Savannah than a direct connection between Macon and Jacksonville.

The segments from Atlanta to Nashville include the only highway-related ROW alignment. **Figure 30** shows the potential use of the I-75 median for ROW. Currently, there is no publicly owned rail ROW to support the network in South Carolina, Georgia, or Tennessee, which represent the largest gaps in rail ROW ownership to develop the network.

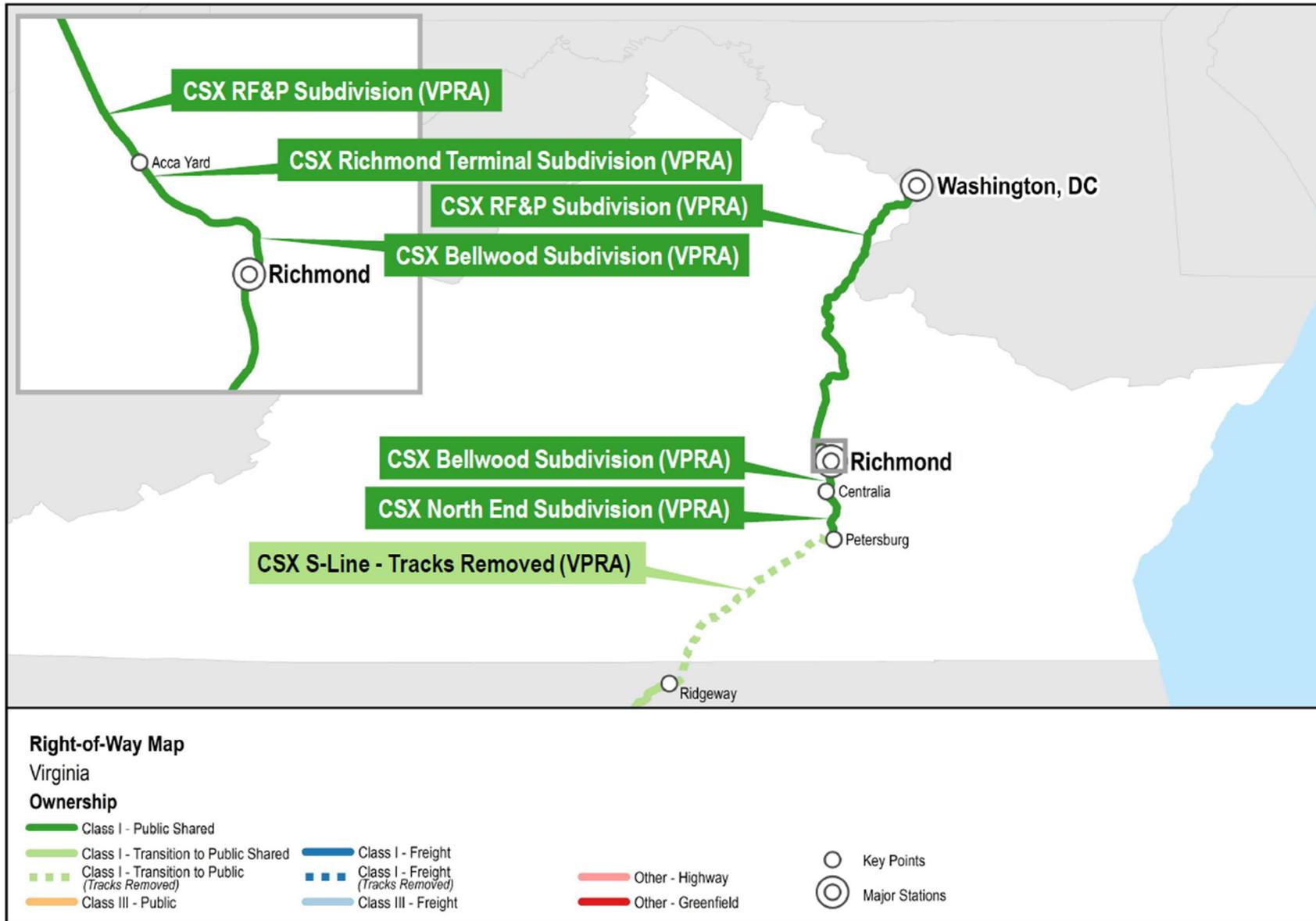


Figure 28: Virginia ROW Ownership Map

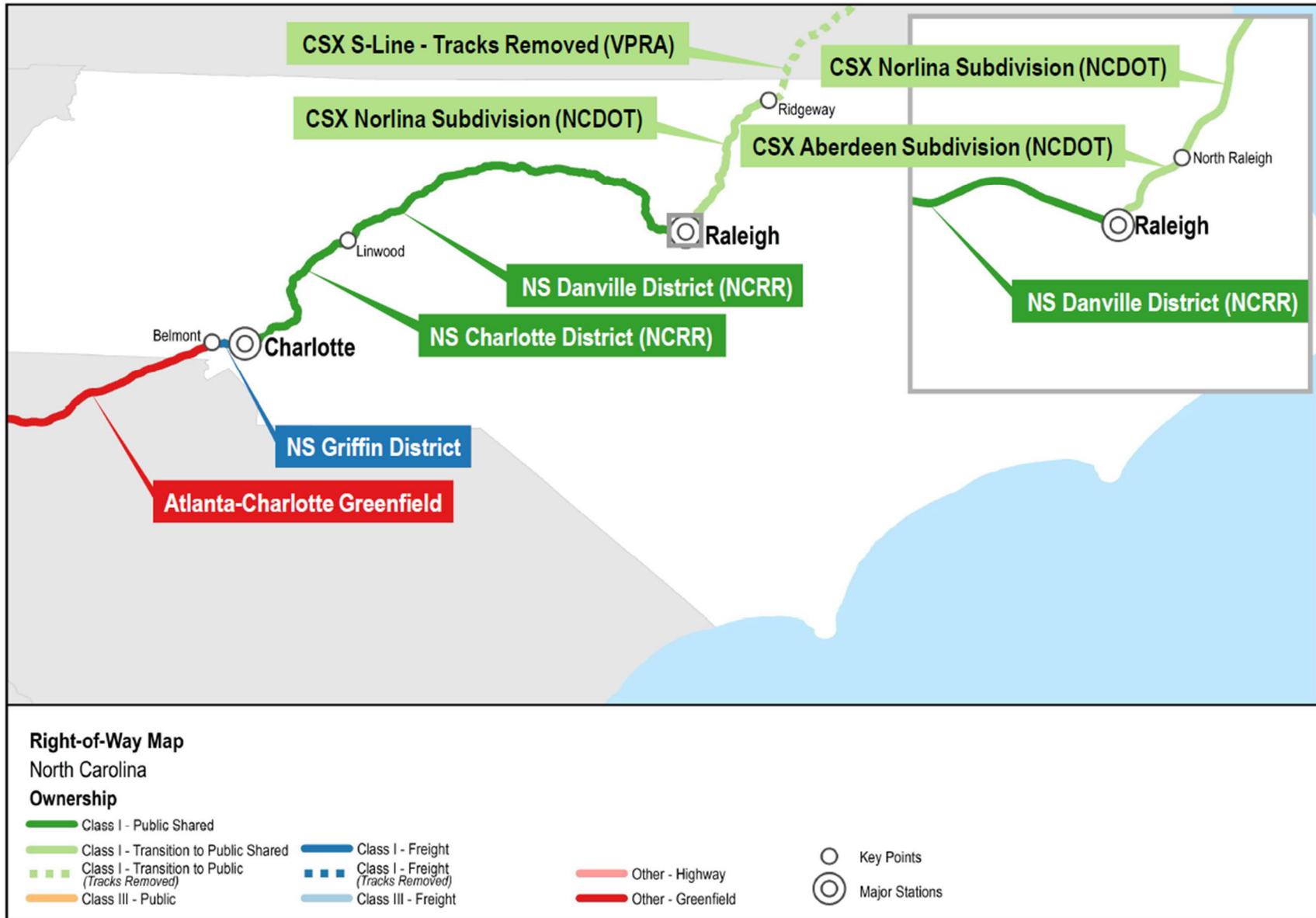


Figure 29: North Carolina ROW Ownership Map

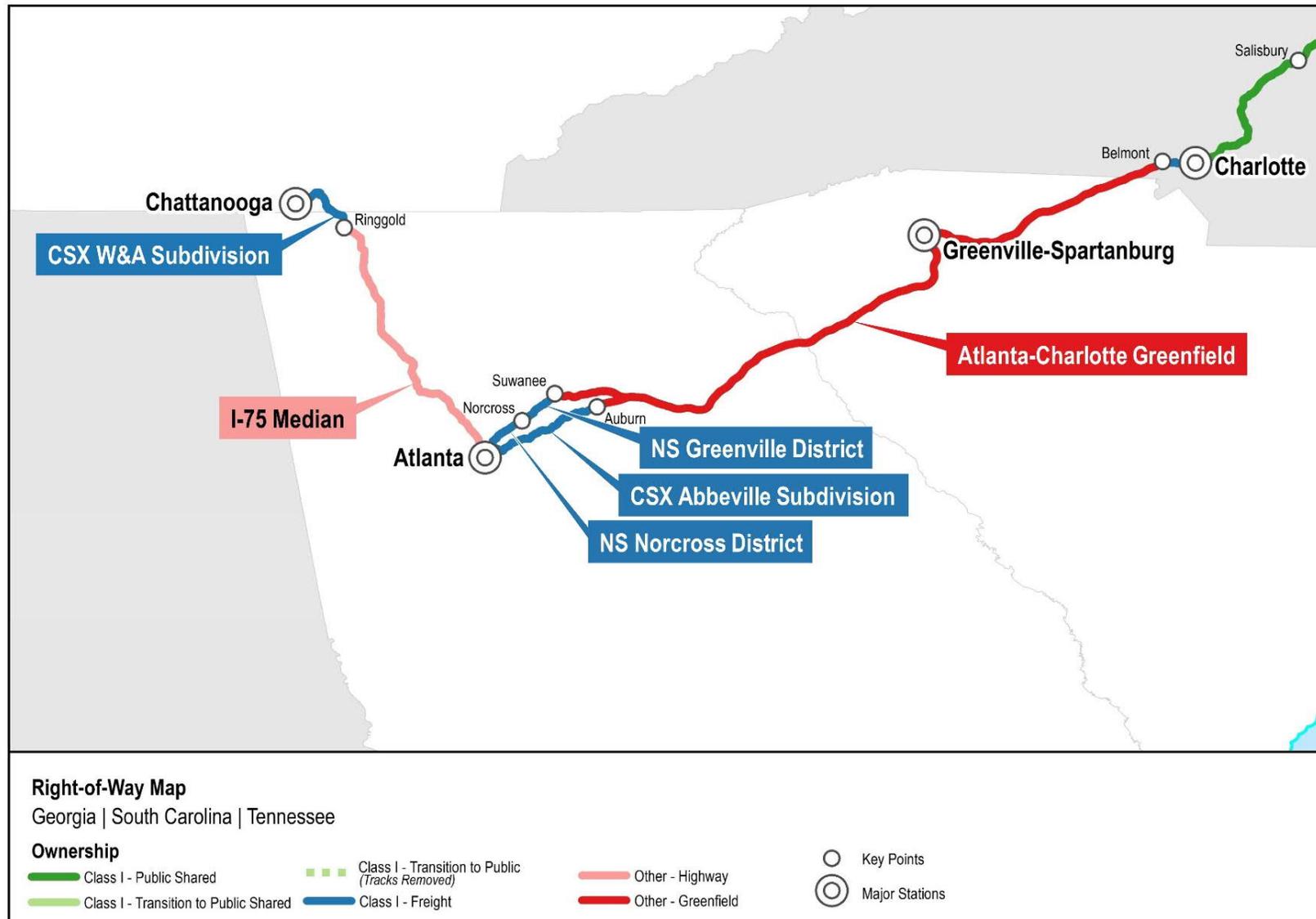


Figure 30: South Carolina, Georgia, Tennessee ROW Ownership Map

## 4.2 Rail Versus Highway ROW Capacity

The cost of increasing the capacity of rail ROW on the rail corridors noted above is significant, but the investment also increases economic output and creates jobs for the region. Rail capacity improvements also have the added benefits of improving travel times, air quality, safety outcomes, and property values compared to other modes of transportation—including air travel and driving. Still, improving highway capacity in parallel corridors is often compared to rail capacity in terms of costs and congestion benefits.

Virginia's 2021 I-95 Corridor Improvement Plan<sup>27</sup> analysis simulated the addition of a single general-purpose lane in each direction between mile marker 118 and mile marker 170 on I-95 and evaluated the impacts to travel speeds over time. Investing in the expansion of I-95 in this manner would require an investment of approximately \$12.5 billion (or \$120 million per lane-mile) and would result in similar congestion conditions returning to the corridor within a decade. Transit and rail investments that resulted in the same levels of person-throughput in the I-95 corridor as an additional lane of highway in each direction required an investment of approximately \$376 million. The ratio of benefits to costs was higher with rail capacity included in investments.

Virginia evaluated the cost and benefits of adding new general-purpose lanes to the I-95 highway and found that a package of focused investments, including rail, was a more effective and cost-efficient solution to addressing congestion and reliability issues in the corridor.

Separate analysis performed by VRE<sup>28</sup> related to congestion relief provided by its commuter rail service has found similar levels of benefits on both I-66 and I-95. VRE analyzed the impacts of its current services on travel time delays, finding that a minimum of 1.6 million hours of delay was removed from the I-66 and I-95 corridors. To maintain a similar savings, an additional highway lane would be needed, requiring at least \$1 billion in investment.

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<sup>27</sup> [http://www.ctb.virginia.gov/resources/projects/cip/i-95\\_cip\\_final\\_report\\_092021.pdf](http://www.ctb.virginia.gov/resources/projects/cip/i-95_cip_final_report_092021.pdf)

<sup>28</sup> <https://www.vre.org/about/studies-and-reports/vre-congestion-relief-report/>

## 5.0 Delivering the Network

Different segments of the High-Performance Rail Network are at different stages of development, with some ready to go into construction and others in the midst of planning. This network spans approximately 1,300 miles of ROW and will take many years to develop. This section details the phasing of corridor development based on multiple factors, including readiness and priority in terms of connecting between Southeastern states, and the funding available for different stages of development. Project-level phasing within each corridor is yet to be determined outside of Virginia, as noted in the prior chapter.

### 5.1 Corridor Phasing

The phasing of the High-Performance Rail Network is based on:

- The SE Study service and infrastructure tiers
- The status of planning in terms of environmental clearance
- Interstate connectivity

The status of environmental clearance serves as a proxy for the readiness of that segment as Tier II clearance is required for construction. However, other factors such as funding and the status of property acquisition will provide a more granular view of readiness for projects within these larger segments. Similarly, service type and interstate connectivity serve as prioritization factors with regards to connecting the major urban centers along the corridor. **Table 5-1** categorizes each segment of the High-Performance Rail Network; a full table of all SEC passenger rail segments in planning is included in the **Appendix**.

Segment	Southeast Rail Plan Classification	Environmental Clearance	State(s)	Market Type
Washington, DC, to Richmond <sup>29</sup>	Core Express/Backbone/Baseline	Tier II ROD	DC, VA	Interstate
Richmond to Raleigh	Core Express/Backbone/Baseline	Tier II ROD	VA, NC	Interstate
Raleigh to Charlotte	Core Express/Backbone/Baseline	Tier I ROD	NC	Intrastate
Charlotte to Atlanta	Core Express/Backbone	Tier I ROD	NC, SC, GA	Interstate
Atlanta to Jacksonville	Core Express/Backbone	Initiated Planning Process	GA, FL	Interstate
Orlando to Jacksonville	Core Express/Backbone	None to date	FL	Intrastate
Atlanta to Chattanooga	Regional/Core Express	Tier I ROD	GA, TN	Interstate
Chattanooga to Nashville	Regional/Core Express	Initiated Planning Process	TN	Intrastate

Table 5-1: High-Performance Network Groupings

The phasing for the High-Performance Rail Network based on these groupings is shown in **Figure 31**.

<sup>29</sup> Includes Long Bridge capacity improvements.

Segment	Southeast Rail Plan Classification	Environmental Clearance	State(s)	Market Type	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Washington, DC to Richmond	Core Express/ Backbone/Baseline	Tier II ROD	DC, VA	Interstate	█				
Richmond to Raleigh	Core Express/ Backbone/Baseline	Tier II ROD	VA, NC	Interstate	█				
Raleigh to Charlotte	Core Express/ Backbone/Baseline	Tier I ROD	NC	Intrastate	█	█			
Charlotte to Atlanta	Core Express/ Backbone	Tier I ROD	NC, SC, GA	Interstate		█			
Atlanta to Jacksonville	Core Express/ Backbone	Initiated Planning Process	GA, FL	Interstate			█		
Orlando to Jacksonville	Core Express/ Backbone	None to Date	FL	Intrastate			█	█	
Atlanta to Chattanooga	Regional/Core Express	Tier I ROD	GA, TN	Interstate			█	█	
Chattanooga to Nashville	Regional/Core Express	Initiated NEPA Process	TN	Intrastate			█	█	█

Figure 31: Corridor Phasing for High-Performance Network

Corridors in Phase 1 are progressing through acquisition and into construction in the next few years. These projects have Tier II RODs and connect the northern parts of the SEC to the NEC. In terms of project development, these projects are moving from preliminary engineering to the final designs required for construction.

Phase 2 includes corridors with Tier I environmental clearance and interstate connections along the backbone of the system. This phase reflects that progress has been made in the planning stages, but they are not ready to consider final design and construction. Phase 2 also is split between a portion of the corridor, Raleigh to Charlotte, with existing service on the baseline network and the greenfield alignment between Charlotte and Atlanta. Typically, Tier I studies define the preferred corridor and Tier II studies define the preferred alignment.

Each of these stages can take varying amounts of time depending on the project scope. As an example, the Charlotte to Atlanta greenfield alignment will take much longer in construction than other projects due to it requiring completely new infrastructure to be built, whereas other segments may only require improvements to be made to existing segments.

***Projects in a conceptual planning stage or only beginning the NEPA process will proceed in parallel with earlier phases moving to construction.*** These projects fall into later phases, along with corridors that are further from the backbone of the network. The timeline for moving through NEPA and again through construction is widely variable and based on the funding available, the length of the corridor, the preferred alternative alignment and technology, and the costs/benefits of the project to each state.

FRA has moved away from tiering EIS studies, unless necessary. Corridors that have not been studied may not be required to undergo tiered NEPA. In this case, the grouping strategy above will be compressed to reflect those projects with environmental clearance, those that have begun the environmental clearance process, and those that have not begun the process.

## 5.2 Available Funding

Rail projects in the SEC will require a mix of federal and state funding to support development efforts. Many of the current projects have applied for highly competitive grants from federal programs that were developed as part of earlier transportation packages, like Consolidated Rail Infrastructure and Safety Improvement (CRISI) Program and the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program. In 2021, Congress vastly expanded federal grant support through the IIJA, a once-in-a-generation infrastructure spending package that included \$1.2 trillion in federal funding. The SEC jurisdictions can leverage multiple sources of funding to support different phases of development.

### 5.2.1 Funding Available at the Federal Level

The IIJA funding enhanced the available funds for existing grant programs, while also developing new programs aimed at addressing challenges related to infrastructure, safety, equity, sustainability, and accessibility. Approximately \$66 billion of the IIJA is dedicated to rail improvements.

#### *Interstate Rail Compacts Grant Program<sup>30</sup>*

This **new program** under the IIJA provides financial support for interstate compacts formed to plan, oversee, or otherwise advance the creation of new intercity passenger rail routes. **Up to 10 compacts among two or more states would be eligible to be selected for a grant of up to \$1 million per year**; the appropriations are provided by a \$3 million annual set-aside from Amtrak National Network grant funds.

Grants to interstate compacts would mainly be available for planning and administration, not construction of infrastructure or operation of services. New routes advanced under an interstate compact are eligible to receive funds set aside from Amtrak National Network appropriations for corridor development.

The following selection criteria will be considered:

- Amount of funding received or other participation by state, local, and regional governments and the private sector
- The applicant's work to foster economic development through rail service, particularly in rural communities
- Whether the applicant seeks to restore service over routes formerly operated by Amtrak
- The applicant's dedication to providing intercity passenger rail service to regions and communities that are underserved or not served by other intercity public transportation
- Whether the applicant is enhancing connectivity and geographic coverage of the existing national network of intercity passenger rail service

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<sup>30</sup> [Infrastructure Bill](#), Sections 22101 and 22306

- Whether the applicant has prepared regional rail or corridor service development plans and corresponding environmental analysis
- Whether the applicant has engaged with appropriate government entities and transportation providers to identify projects necessary to enhance multimodal connections or facilitate service integration between rail service and other modes, including between intercity passenger rail service and intercity bus service or commercial air service

Grants from this program require at least 50 percent local and state matching funds.

#### *Federal-State Partnership for Intercity Passenger Rail Grants*<sup>31</sup>

This program would constitute the bulk of funding available for implementing new passenger rail routes. While the original program prioritized rehabilitation or replacement of aging infrastructure on the NEC between Boston and Washington, the revised program would have broader eligibility in terms of project types and selection criteria.

As amended by the Senate, the IIJA appropriates \$36 billion for the program, of which no more than \$24 billion could be awarded to projects on the NEC. **Accordingly, at least \$12 billion would be available for off-NEC network expansion. The IIJA also authorizes \$7.5 billion for the program contingent on future appropriations, of which \$3.4 billion to \$4.1 billion would be available for network expansion, with the remainder reserved for projects on the NEC.**

For projects not located on the NEC, the bill would prioritize those for which Amtrak is not the sole applicant, and that are consistent with a corridor inventory prepared under the Corridor Identification and Development Program described below. The program would allow the Secretary of Transportation to issue letters of intent committing future appropriations to selected applicants, and/or to enter into phased funding agreements for larger projects. Depending on how the United States Department of Transportation (USDOT) structures the grant solicitation, this could potentially allow it to commit most or all of the \$36 billion in supplemental appropriations such that funds would be disbursed over a multiyear period to a single cohort of selected projects.

Grants from this program require at least 20 percent local and state matching funds.

#### *Corridor Identification and Development Program*<sup>32</sup>

This IIJA program establishes a new Corridor Identification and Development Program to facilitate the development of intercity passenger rail corridors, including new intercity passenger rail routes, enhancement of existing routes, restoration of services, and increase of service frequency of a long-distance route. Corridor projects identified under this program would be given priority over other projects not located on the NEC when applying for Federal-State Partnership funds. IIJA directs the Secretary of Transportation to solicit proposals for the development of intercity passenger rail corridors from eligible entities. Having selected proposals for further support, the Secretary would be directed to work with the applicants to

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<sup>31</sup> [Infrastructure Bill](#), Section 22106

<sup>32</sup> [Infrastructure Bill](#), Section 25101 and <https://www.apta.com/advocacy-legislation-policy/legislative-updates-alerts/updates/senate-passes-the-infrastructure-investment-and-jobs-act/>

determine the level of financial support necessary to implement the proposals, support the completion of service development plans, identify a “pipeline” of individual capital projects required for service initiation, and carry out other functions.

#### *National Infrastructure Project Assistance*<sup>33</sup>

**There is \$500 million available in funding annually for this program.** This program supports multimodal, multijurisdictional projects of national or regional significance. Grants may be provided under this program for the following types of projects:

- A highway or bridge project carried out on the:
  - National Multimodal Freight Network
  - National Highway Freight Network
  - National Highway System
- A freight intermodal (including public ports) or freight rail project that provides a public benefit
- A railway-highway grade separation or elimination project
- An intercity passenger rail project
- A public transportation project that is eligible for assistance under chapter 53 and part of any of the above types of projects
- A grouping, combination, or program of interrelated, connected, or dependent projects of any of the above types of projects

Grants from this program require at least 20 percent local and state matching funds.

#### *Local and Regional Project Assistance*<sup>34</sup>

This program provides for capital investments in surface transportation infrastructure. The goal of this program is to fund eligible projects that will have a significant local or regional impact and improve transportation infrastructure.

**Each grant made under the program shall be in an amount equal to not less than \$5 million for an urbanized area, not less than \$1 million for a rural area, and not more than \$25 million.**

Evaluation criteria includes the extent to which a project:

- Improves safety
- Improves environmental sustainability
- Improves the quality of life of rural areas or urbanized areas
- Increases economic competitiveness and opportunity, including increasing tourism opportunities
- Contributes to a state of good repair
- Improves mobility and community connectivity

Grants from this program require at least 20 percent local and state matching funds.

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<sup>33</sup> [Infrastructure Bill](#), Section 21201

<sup>34</sup> [Infrastructure Bill](#), Section 21202

### *CRIS*<sup>35</sup>

According to the IIJA, **there is \$1 billion available annually for fiscal year (FY)22–FY26**, compared to \$361,978,796 that was available for funding in FY21.

This program provides funds for projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. Projects that are eligible for funding under this grant program include, but are not limited to:

- Deployment of railroad safety technology
- Capital projects, as defined in section 49 U.S.C. § 24401(2) for intercity passenger rail service, except that a project is not required to be in an SRP
- Capital projects that:
  - Address congestion challenges affecting rail service
  - Reduce congestion and facilitate ridership growth along heavily traveled rail corridors
  - Improve short-line or regional railroad infrastructure
- Highway-rail grade crossing improvement projects
- Rail line relocation and improvement projects
- Regional rail and corridor service development plans and environmental analyses
- Any project necessary to enhance multimodal connections or facilitate service integration between rail service and other modes
- The development and implementation of a safety program or institute
- Any research that the Secretary considers necessary to advance any particular aspect of rail related capital, operations, or safety improvements
- Workforce development and training activities, coordinated to the extent practicable with the existing local training programs supported by the USDOT, the Department of Labor, and the Department of Education

Grants from this program require at least 20 percent local and state matching funds.

### *Railway Highway Grade Crossing Program and Railroad Crossing Elimination Program*<sup>36</sup>

The Railway Highway Grade Crossing Program provides funds for the elimination of hazards at railway-highway crossings. **There is \$245 million available annually for FY22–FY26.**

Funding for the past five years is outlined below:

- FY16 – \$350 million
- FY17 – \$230 million
- FY18 – \$235 million
- FY19 – \$240 million
- FY20 – \$245 million

Program funds are eligible for projects at all public crossings including roadways, bike trails, and pedestrian paths. Fifty percent of funding is dedicated for the installation of protective devices at

<sup>35</sup> <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/consolidated-rail-infrastructure-and-safety-2>

<sup>36</sup> <https://safety.fhwa.dot.gov/hsip/xings/> and <https://railroads.dot.gov/elibrary/railroad-crossing-elimination-grant-program-fact-sheet>

crossings. The remainder of the funds can be used for any hazard-elimination project, including protective devices. The Fixing America's Surface Transportation (FAST) Act of 2015 extended eligibility to include projects at grade crossings to eliminate hazards posed by blocked crossings due to idling trains.

Funds can be used as incentive payments for local agencies to close public crossings if there are matching funds from the railroad. Funds also can be used for local agencies to provide matching funds for state-funded projects. *Commuter rail projects are not eligible.*

The new Railroad Crossing Elimination Program grant provides funding to grade separations, closures, track relocations, and protective devices to improve the safety and mobility of people and goods at highway-rail crossings. There is \$500 million available annually for FY22–FY26 through the Railroad Crossing Elimination Program. Planning, environmental review, and design are eligible for projects meant to address railroad crossings.

Grants from this program require at least 20 percent local and state matching funds.

#### *Restoration and Enhancement (R&E) Grants<sup>37</sup>*

This program funds operating assistance grants for initiating, restoring, or enhancing intercity passenger rail transportation; **\$50 million has been authorized to be appropriated annually to these grants for FY22–FY26.** Prior available funding was \$26,337,600 in FY18–FY20.

Projects eligible for funding under this grant program include:

- Additional frequency of current service
- Offering new on-board services
- Establishing new service
- Extension of current service
- Restoration of previously operated service

Expenses eligible for FY18–FY20 funding were required to be for operating assistance to initiate, restore, or enhance intercity rail passenger transportation. Examples of such expenses may include staffing costs for train engineers, conductors, and on-board service crew; diesel fuel or electricity costs associated with train propulsion power; station costs such as ticket sales, customer information and train dispatching services, and station building utility and maintenance costs; lease payments on rolling stock; routine planned maintenance costs of equipment and train cleaning; host railroad costs; train yard operation costs; general and administrative costs; and management, marketing, sales, and reservations costs.

Grants from this program require at least 10 percent local and state matching funds in the first year of service, increasing to 70 percent by year six of the service.

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<sup>37</sup> <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/restoration-and-enhancement-grant-program>

### *RAISE Grants*<sup>38</sup>

The RAISE discretionary grant program provides a unique opportunity for USDOT to invest in road, rail, transit, and port projects that promise to achieve national objectives. **The IIJA authorizes \$7.5 billion in total RAISE grants over the life of the bill.**

Previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) discretionary grants, Congress has dedicated nearly \$8.9 billion for the 12 previous rounds of national infrastructure investments to fund projects that have a significant local or regional impact. The RAISE program enables USDOT to use a rigorous merit-based process to select projects with exceptional benefits, explore ways to deliver projects faster and save on construction costs, and make needed investments in our nation's infrastructure.

Grants from this program require at least 20 percent local and state matching funds.

### *Capital Investment Grants (CIG) Program (New Starts, Small Starts, Core Capacity)*<sup>39</sup>

The CIG program is a discretionary funding program for the construction of new fixed-guideway public transportation systems and the expansion of existing systems. Eligible projects include transit rail, including subway/elevated rail (heavy rail), light rail, and commuter rail, as well as bus rapid transit (BRT) and ferries.

The CIG program is one element of the federal public transportation program that is administered by the Federal Transit Administration (FTA) within USDOT. **Funding is authorized at \$4.6 billion per year from 2022 to 2026, with \$1.6 billion appropriated.**

Unlike FTA's other major programs, funding for the CIG program comes from the general fund of the US Treasury, not the mass transit account of the Highway Trust Fund. CIG funding, therefore, is subject to appropriation each year. The CIG program allocates discretionary grants, whereas the other major programs apportion funds by formula.

There are four types of CIG projects:

- New Starts, an operable segment of a new fixed-guideway system or an extension of an existing system that costs \$300 million or more and receives \$100 million or more in CIG funding
- Small Starts, a new fixed-guideway project or a corridor-based BRT that costs less than \$300 million and receives less than \$100 million of CIG funding
- Core Capacity, expansion of an existing fixed-guideway corridor to increase capacity by 10 percent or more
- Program of Interrelated Projects, the simultaneous development of two or more New Starts, Small Starts, or Core Capacity projects, or a combination thereof

Grants from this program require at least 20 percent local and state matching funds.

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<sup>38</sup> <https://www.transportation.gov/RAISEgrants/about>

<sup>39</sup> <https://www.transit.dot.gov/CIG>

### 5.2.2 Funding Available at the State Level

The development of the SEC also relies on funding from the individual member states, in addition to funds programmed at the federal level. The sources and use of funding from existing programs vary by state, but most programs focus on short-line railroad preservation and improving industrial access. While other resources will need to be identified to fund passenger rail improvements in the SEC, improvements to freight rail systems that decouple the shared use of existing tracks and corridors will provide opportunities for capacity and speed improvements in the Southeast.

#### *Florida's Strategic Intermodal System (SIS) Program<sup>40</sup>*

This program provides grant funding to rail projects of interregional and interstate importance that meet the goals and objectives outlined in the SRP. All railroads are eligible to receive funds. Florida also may fund critical rail projects using loans from the State Infrastructure Bank.

#### *GDOT Rail Freight Assistance Program<sup>41</sup>*

This program provides financial assistance for capital projects to preserve and improve local rail freight service. Rail lines in the State of Georgia that carry 3 million or fewer gross tons of freight annually are eligible for this program. Available funding is awarded in accordance with the priority placed on each eligible rail line as a result of the detailed analysis performed as part of the GSRP.

Georgia also indicated in the 2019 American Association of State Highway and Transportation Officials (AASHTO) Survey for State Assistance for New or Expanding Rail Infrastructure that state bonds for projects supported by a local development authority for state-owned segments were used for funding construction costs.

#### *North Carolina Highway Fund and Highway Trust Fund*

NCDOT provides funding to support Amtrak's Carolinian and Piedmont intercity passenger rail services. The Carolinian line provides one daily round trip to connect New York, Washington, Richmond, Raleigh, and Charlotte (704 miles, longest segment traveled). The Piedmont line provides three daily round trips to connect Raleigh, Durham, Greensboro, and Charlotte (173 miles, longest segment traveled).

The State's Highway Fund supports maintenance improvements for all transportation sectors and the Highway Trust Fund supports capital improvements for all transportation sectors. The Highway Fund is supported by state motor fuel tax revenues and Department of Motor Vehicles (DMV) fees (primarily driver's license, registration, and inspection fees); the Highway Trust Fund is supported by state motor fuel tax revenues, DMV fees, and highway use tax (one-time tax on the vehicle sale price) revenues.

Highway Fund and the Highway Trust Fund money is programmed through the state's competitive Strategic Transportation Investments (STI) process. Intercity passenger rail maintenance or capital projects must apply through the STI process to receive state funding.

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<sup>40</sup> <https://www.fdot.gov/planning/sis/default.shtm>

<sup>41</sup> <https://www.law.cornell.edu/regulations/georgia/GA-Reg-672-12-06> and <https://www.nap.edu/read/24788/chapter/12#122> and <https://rail.transportation.org/wp-content/uploads/sites/30/2019/06/Rail-Survey-Responses-6.24.19-for-website.pdf>

The STI process stems from the Strategic Transportation Investments Law which established the strategic mobility formula to allocate revenue based on scoring and local inputs. The strategic mobility formula considers three major funding categories: division needs, regional impact, and statewide mobility, to distribute the funding across various transportation divisions and organizations across the state. Highway Trust Fund is generally programmed for major capital projects. Additionally, the Highway Fund provides funding for intercity passenger rail operations that is not subject to the STI process and is typically matched with federal Congestion Mitigation and Air Quality (CMAQ) funding.

According to the Amtrak Legislative Annual Report, the state operating contribution was \$11.1 million in FY20—\$8.4 million for Carolinian service and \$2.7 million for Piedmont service.

#### *North Carolina's Rail Industrial Access Program<sup>42</sup>*

This program uses state funds to help build or refurbish railroad tracks that a new or expanding industry needs. The funding helps ensure that companies have safer, modernized railroad tracks so freight can deliver their goods and services more effectively and efficiently. Funding is capped at \$200,000 and utilizes a point system to determine funding level.

Funding for the projects is contingent upon application approval prior to:

- The industry making its decision to locate or expand a facility in North Carolina
- Matching funds from private and or local sources

Local governments, community development agencies, railroad companies, and industries are eligible to apply. Approval of requests is based on the project's economic benefits, including the number of potential new jobs, the amount of capital investment, rail use, and the area's economic conditions.

#### *North Carolina's Short-Line Infrastructure Assistance Program (SIAP)*

This program provides up to 50 percent in matching funds to short-line railroads for the enhancement of rail service, and access to ports and military installations. The SIAP encourages freight diversion from highway to rail by aiding in the maintenance and enhancement of a safe and efficient statewide short-line rail network. In exchange, railroads commit to perform the project to the standards and specification of the NCDOT, ensure the project tracks and project improvements remain in service for a five-year period, and ensure that the project tracks or other project improvements only be relocated or sold with the written approval from NCDOT.

Short-line railroads are eligible to apply for SIAP grant funds. The NCDOT Rail Division solicits a “call for projects” at the beginning of each FY. All candidate projects are evaluated and ranked through a quantitative process; projects are selected for recommendation by rank and available program funding. The NCDOT Rail Division makes funding recommendations to the North Carolina Board of Transportation. A grant agreement between the department and recipient is prepared and executed. Project purchases are to be competitively bid and selected and contracts must be awarded to the low bidder (minimum three bids). All procurements are to be conducted in accordance with N.C. General Statute 143, Article 8. SIAP recipients may submit

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<sup>42</sup> <https://www.ncdot.gov/divisions/rail/projects/Pages/industrial-access.aspx>

progressive payment invoices as project milestones are completed. Requests for reimbursement must include procurement invoices, proof of payments, and confirmation of domestic steel sources for relevant materials. Upon review and approval by the NCDOT Rail Division and NCDOT Fiscal Office, payment will be made.

#### *Tennessee's FastTrack Infrastructure Development Program<sup>43</sup>*

This program provides discretionary grants to local government agencies for public infrastructure improvements that will benefit at least one company. To qualify, a business must create net new full-time jobs and make a capital investment.

- Grants made to local governing bodies for public infrastructure improvements must be for specific infrastructure projects benefiting one or more companies committed to creating new jobs and/or making new capital investments
- Covers infrastructure such as rail, public roadway, port, airport, site, water, sewer, gas, and telecommunication improvements
- Requires local matching funds based on a community's ability to pay
- Requires a Payment in Lieu of Tax (PILOT) for at least five years on real property
- The following bonus incentives apply to the program:
  - At-Risk County: 35 percent premium to projects that locate in a county defined by the Appalachian Regional Commission as "at-risk"
  - Distressed County: 50 percent premium to projects that locate in a county defined by the Appalachian Regional Commission as "distressed"

#### *Tennessee's Short-Line Equity Fund/Short-Line Railroad Preservation Grants<sup>44</sup>*

The purpose of the program is to preserve rail service to local communities and expand rail connectivity to sites along existing rail corridors. The focus of the program is on facilitating the efficient and economical movement of freight within Tennessee by strengthening the network of short-line railroads in the state. In the FY22 Tennessee General Appropriations Bill, Governor Bill Lee allocated \$85 million in funding for the Short-Line Railroad Preservation Grant program. Beginning July 1, 2021, these new funds are available to authorities for preservation projects.

To be eligible for grants from the Transportation Equity Trust Fund, authorities must be established to preserve and maintain essential rail transportation. TDOT requires these entities to be actively involved in the management of grant funds.

Eligible grant expenses include:

- Capital projects on track that actively serve rail customers located on the line
- Engineering work associated with capital projects (up to 10 percent of total project cost)
- Non-engineering construction administration by a third-party contractor (up to 2 percent of construction cost, procured in accordance with Tenn. Code Ann. § 7-56-211)

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<sup>43</sup> <https://tnecd.com/advantages/incentives-grants/> and <https://www.tn.gov/transparenttn/state-financial-overview/openecd/openecd-performance-metrics/openecd-business-development-quick-stats/fasttrack-cost-per-job.html>

<sup>44</sup> <https://www.tn.gov/tdot/transportation-freight-and-logistics-home/competitive-rail-connectivity-grants.html>

- Annual audit (Note: In the past, some authorities have been referenced within a county audit. TDOT requires either an audit specifically of the Authority itself or a letter from the Comptroller indicating that the county audit satisfies the statutory requirement related to Authority audits)
- Administrative duties related to construction tasks, such as reconciliation of rock tickets
- Railroad-highway at-grade crossings to be repaired must be public crossings that have been rated in “Fair” or “Poor” condition by TDOT rail inspectors

#### *Tennessee's Transportation Alternatives Program<sup>45</sup>*

This program provides funds to local governments for non-traditional transportation projects. In 2020, there was \$10,328,312 available statewide in Tennessee through these grants.

To be eligible for project funding, the application must fall into one or more of the following specific categories as defined by federal legislation and relate to surface transportation:

- Pedestrian and bicycle facilities and safe routes for non-drivers
- Conversion of abandoned railway corridors to trails
- Scenic turnouts and overlooks
- Historic preservation and rehabilitation of historic transportation facilities
- Archeological activities

#### *Virginia's Commonwealth Rail Fund (CRF)<sup>46</sup>*

The 2020 General Assembly established the CRF to replace the Intercity Passenger Rail Operating and Capital and Rail Enhancement Funds. Of the funds allocated to CRF, 93 percent is dedicated to the new VPRA. The remaining 7 percent remains with DRPT for planning purposes and grants not administered by VPRA. Additionally, up to \$4 million may be used for the purposes of the CRF. DRPT is currently developing guidelines for this new program for the Commonwealth Transportation Board's (CTB's) approval, with the aim of supporting rail infrastructure investments through expansion of Virginia's freight network.

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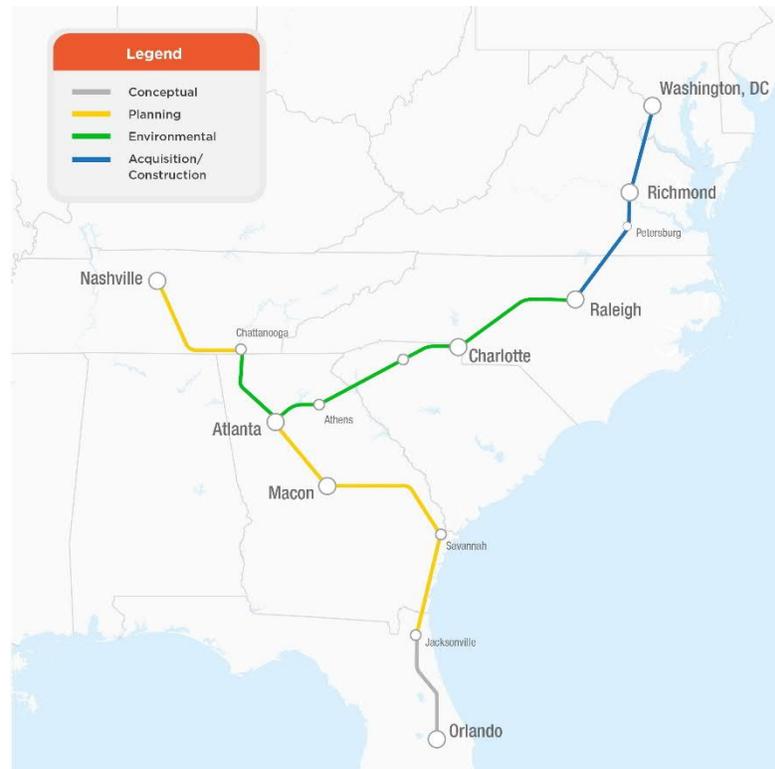
<sup>45</sup> [TAP Application Instructions](#)

<sup>46</sup> <http://www.drpt.virginia.gov/rail/grants/>

## 6.0 Conclusion

Improving passenger rail services along the SEC will have profound benefits to the surrounding region, connecting millions of people to new destinations and job opportunities. Nearly 1,300 miles of rail ROW improvements are needed to connect the major urban centers along the High-Performance Rail Network, which can then be leveraged to expand the regional connections being developed within each state.

Corridors in Virginia and North Carolina are ready to progress into the final engineering and construction stages of development, which will bring significantly increased rail service in the segments from Washington, DC, to Raleigh. More-detailed service planning is required between the two states to define the near- and long-term service goals for the connection between Richmond and Raleigh, which will help to lead the development of incremental infrastructure investments.



South of Raleigh, additional funding will be necessary to complete planning and environmental evaluation for segments that have not yet reached a final ROD. The remainder of the corridor also should define passenger rail service goals and develop partnerships within the corridor—with both passenger and freight operators—to successfully progress plans for ROW capacity improvements.

In parallel, North Carolina, Virginia, and Florida are progressing regional and emerging segments of the corridor to meet market demands in their respective states. The Transforming Rail in Virginia program is increasing services to Roanoke and the Hampton Roads area, with planned extensions to the New River Valley. North Carolina is studying further connections to the SEC through Asheville to the west and Wilmington to the south. Florida is partnering with Brightline to deliver a new rail segment linking Orlando with Cocoa Beach and Miami and is entering preliminary engineering on a segment between Orlando and Tampa.

With once-in-a-generation levels of funding available to address passenger rail needs, a phased approach will allow the SEC to continue progressing improvements throughout the corridor while capturing and communicating benefits as initial portions are completed.

## Appendix: Full Segment Table

<b>Segment</b>	<b>Southeast Rail Plan Classification</b>	<b>Environmental Clearance</b>	<b>State(s)</b>	<b>Market Type</b>
Washington, DC, to Richmond	Core Express/Backbone/Baseline	Tier II ROD	DC, VA	Interstate
Richmond to Raleigh	Core Express/Backbone/Baseline	Tier II ROD	VA, NC	Interstate
Raleigh to Charlotte	Core Express/Backbone/Baseline	Tier I ROD	NC	Intrastate
Charlotte to Atlanta	Core Express/Backbone	Tier I ROD	NC, SC, GA	Interstate
Richmond to Newport News	Regional/Baseline	Tier I ROD	VA	Intrastate
Richmond to Norfolk	Regional/Baseline	Tier I ROD	VA	Intrastate
Orlando to Miami	Regional/Baseline	Tier I ROD	FL	Intrastate
Orlando to Naples	Regional/Backbone to Tampa	Tier I ROD	FL	Intrastate
Atlanta to Jacksonville	Core Express/Backbone	Initiated Planning Process	GA, FL	Interstate
Atlanta to Birmingham	Regional	Initiated Planning Process	GA, AL	Interstate
Orlando to Jacksonville	Core Express/Backbone	None to Date	FL	Intrastate
Atlanta to Chattanooga	Regional/Core Express	Tier I ROD	GA, TN	Interstate
Chattanooga to Nashville	Regional/Core Express	Initiated Planning Process	TN	Intrastate
Charlotte to Columbia	Regional	None to Date	NC, SC	Interstate
Atlanta to Columbia	Regional	None to Date	GA, SC	Interstate
Washington, DC to Roanoke	Emerging/Baseline	None to Date	DC, VA	Interstate
Raleigh to Fayetteville	Emerging	None to Date	NC	Intrastate
Raleigh to Winston-Salem	Emerging	None to Date	NC	Intrastate
Charlotte to Charleston	Emerging	None to Date	NC, SC	Interstate
Charlotte to Asheville	Emerging	None to Date	NC	Intrastate
Nashville to Memphis	Emerging	None to Date	TN	Intrastate
Atlanta to New Orleans	Emerging	None to Date	GA, AL, FL, MS, LA	Interstate

<b>Segment</b>	<b>Southeast Rail Plan Classification</b>	<b>Environmental Clearance</b>	<b>State(s)</b>	<b>Market Type</b>
Orlando to Gainesville	Emerging	None to Date	FL	Intrastate
Roanoke to Chattanooga	Network Independent*	None to Date	VA, TN	Interstate
Richmond to Charlottesville	Network Independent*	None to Date	VA	Intrastate
Richmond to Lynchburg	Network Independent*	None to Date	VA	Intrastate
Raleigh to Wilmington	Network Independent*	None to Date	NC	Intrastate

\*Note: Network independent service is defined outside the criteria for high-performance tiers. A network independent corridor shows potential to become part of the network in the future but does not have enough demand or does not fulfill other criteria that would allow a categorization as a high-performance tier. Such corridors could act as supplemental links in the network and can be developed independently from the high-performance network.