



# CHAPTER 1

## ROLE OF RAIL IN STATEWIDE TRANSPORTATION

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# 1 Role of Rail in Statewide Transportation

Virginia's economic prosperity and quality of life are directly dependent on its rail network. Each day, thousands of people and hundreds of thousands of goods and products move across more than 3,000 miles of rail lines spanning the Commonwealth. In Northern Virginia, commuter trains provide an efficient way for people to travel between work and home, and a critical link to the Northeast Corridor (NEC), through one of the most congested regions of the United States. Farther south, long trains carrying 200 or more shipping containers move to and from the Port of Virginia on rails that form a critical link in an international supply chain. Across the state, businesses and manufacturing firms employing Virginia residents depend on the rail network to efficiently bring in raw materials and provide a cost-effective means of delivering finished products to consumer markets across the country. Virginia's location at the crossroads of several major rail lines gives the Commonwealth a major economic advantage that can help sustain and expand Virginia's economy for decades to come.

In 2015, the Virginia Department of Rail and Public Transportation (DRPT) and the Commonwealth Transportation Board (CTB) Rail Committee reviewed policies and procedures of the rail programs managed by DRPT staff. As part of that yearlong effort, the CTB Rail Committee recommended DRPT develop a State Rail Plan to reflect changes in the rail industry and prioritize Virginia's investments in the freight and passenger rail industry across the Commonwealth. This document was developed by DRPT to serve as Virginia's State Rail Plan and meet the federal requirements of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), as amended by the Fixing America's Surface Transportation Act of 2015 (FAST Act) and the September 2013 *State Rail Plan Guidance* provided by the Federal Railroad Administration (FRA). In addition to meeting federal requirements, this State Rail Plan is intended to publicize Virginia's vision for railroad transportation through the horizon year of 2040 and list strategies necessary to achieve that vision. The State Rail Plan was developed with public participation and involvement by the CTB Rail Committee, the Commonwealth's railroads, and stakeholders.

This chapter illustrates the current and proposed future role of rail in Virginia's multimodal transportation system and describes how the Commonwealth provides governmental, legal, and financial assistance to rail transportation in Virginia.



## 1.1 Planning Efforts to Support Virginia’s Goals for its Multimodal Transportation System

Virginia’s vision and goals for its multimodal transportation system are outlined in a number of recently published plans, including the Statewide Transportation Plan, State Freight Plan, and Statewide Transportation Improvement Program, described in the following chapters. Virginia’s goals for its multimodal transportation system and this State Rail Plan are:

- Optimize return on investments
- Ensure safety, security and resiliency
- Efficiently deliver programs
- Consider operational improvements and demand management first
- Ensure transparency and accountability, and promote performance management
- Improve coordination between transportation and land use
- Ensure efficient intermodal connections
- Support regional economic development

Virginia’s rail network is a valuable asset that drives the economy, reduces congestion, improves safety, and saves taxpayer money. Continued investment in rail infrastructure will ensure the vision and goals for the Commonwealth’s transportation network is achieved.

### 1.1.1 Virginia’s Statewide Transportation Plan

Virginia’s current Statewide Transportation Plan (VTrans2040) provides direction for all transportation modes in the state, including rail and public transit.<sup>1</sup> The Vision component of the plan was adopted and approved in 2015. The Vision component of VTrans2040 outlines the vision, goals, objectives, the projected demand for transportation infrastructure and the social and economic changes that are expected to occur in the state between 2015 and 2040. VTrans2040 also underscores the idea that potential changes in catalytic factors, such as major economic generators, freight movement, household characteristics, land development patterns, transportation technology, and the natural environment, will require a transportation system that is developed with these factors in mind.<sup>2</sup>

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<sup>1</sup> <http://www.vtrans.org/vtrans2040.asp>

<sup>2</sup> Ibid.



### 1.1.2 Virginia State Freight Plan

Virginia's State Freight Plan (the Freight Plan) was completed as an update to VTrans2035, the previous Virginia Statewide Transportation Plan. The Freight Plan describes the Commonwealth's strategy to improve goods movement on its highway, rail, waterborne, and aviation systems, underscoring the critical importance of efficient freight movement to the Commonwealth's economy as well as the interstate commerce moving over Virginia's transportation system.<sup>3</sup>

### 1.1.3 Virginia's Statewide Transportation Improvement Program

The Virginia Statewide Transportation Improvement Program (STIP) is a federally-mandated program that identifies all of the various transportation projects (highway, passenger rail, freight, public transit, bicycle, and pedestrian) that will utilize federal transportation funding or require approval from either the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), or FRA.<sup>4</sup>

The STIP is a combination of Metropolitan Planning Organization (MPO) Transportation Improvement Program (TIP) urban area projects and rural area projects that are prioritized with the consent of rural locality boards of supervisors and/or planning staff.<sup>5</sup> Projects funded under the Federal Lands Access Program are also included, along with those projects to improve roadways in Virginia's National Parks, National Forests, and Indian Reservations.<sup>6</sup> Federal regulation requires that the STIP demonstrate fiscal constraint to show that the state is not scheduling more transportation projects for construction than it has funding available.<sup>7</sup> Although state funded rail projects sometimes appear in the STIP, their inclusion is not required.

Owing to the fact that the STIP only tracks projects in Virginia that use federal funds, the Virginia Department of Transportation (VDOT) and DRPT develop separate Six-Year Improvement Programs (SYIPs) to comprehensively track all projects and funding sources. VDOT's SYIP is a state transportation planning document that includes projects on the interstate, primary, secondary, and urban highway systems, as well as some transit and rail projects, including those with FRA funding. DRPT's SYIP includes six years of transit and rail capital improvement projects, as well as one year of transit operation and special projects.<sup>8</sup>

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<sup>3</sup> <http://www.vtrans.org/plans.asp#Freight>

<sup>4</sup> <http://www.virginiadot.org/about/stip.asp>

<sup>5</sup> Ibid.

<sup>6</sup> [http://www.virginiadot.org/VDOT/About VDOT/asset\\_upload\\_file203\\_76773.pdf](http://www.virginiadot.org/VDOT/About%20VDOT/asset_upload_file203_76773.pdf)

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.



DRPT's funding objectives are shaped to maintain a globally competitive and attractive climate for people and businesses, and to ensure that Virginia's transportation system contributes to a productive and efficient economy. As such, rail projects on the SYIP are chosen for their alignment with these guiding principles.

## 1.2 Rail Transportation's Role within the Virginia Transportation System

From the opening of the first railroad in the Commonwealth 185 years ago to the present day, Virginia's rail network has proven to be a major contributor to the development and economic success of the Commonwealth and nation as a whole.

### 1.2.1 Virginia's Freight Railroads

Virginia's current major freight rail carriers are the result of the consolidation of several smaller predecessor rail lines. These carriers have strong national and international networks with comprehensive multimodal connectivity. Virginia's major freight rail carriers (or Class I railroads) include:

- CSX Transportation (CSX)
- Norfolk Southern Railway (NS)

In addition to the two major Class I carriers, there are nine shortline (or Class III) railroads in Virginia that also serve as local railroads<sup>9</sup>. No regional carriers (or Class II railroads) operate in Virginia. These shortline railroads provide freight rail service to Virginia at the regional and local level. Virginia's shortline railroads include:

- Bay Coast Railroad (BCR)
- Buckingham Branch Railroad (BB)
- Chesapeake & Albemarle Railroad (CA)
- Chesapeake Western Railway (CHW)
- Commonwealth Railway (CWRY)
- Norfolk & Portsmouth Belt Line Railroad (NPB)

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<sup>9</sup> A Class III railroad is defined by the Surface Transportation Board as a railroad that has annual operating revenues of less than \$250 million (in 1991 dollars). Local railroads are defined by the Association of American Railroads as either line-haul carriers or switching and terminal carriers that are neither Class I or regional railroads. For purposes of the State Rail Plan, Class III and local railroads are referred to as shortline railroads in this document.

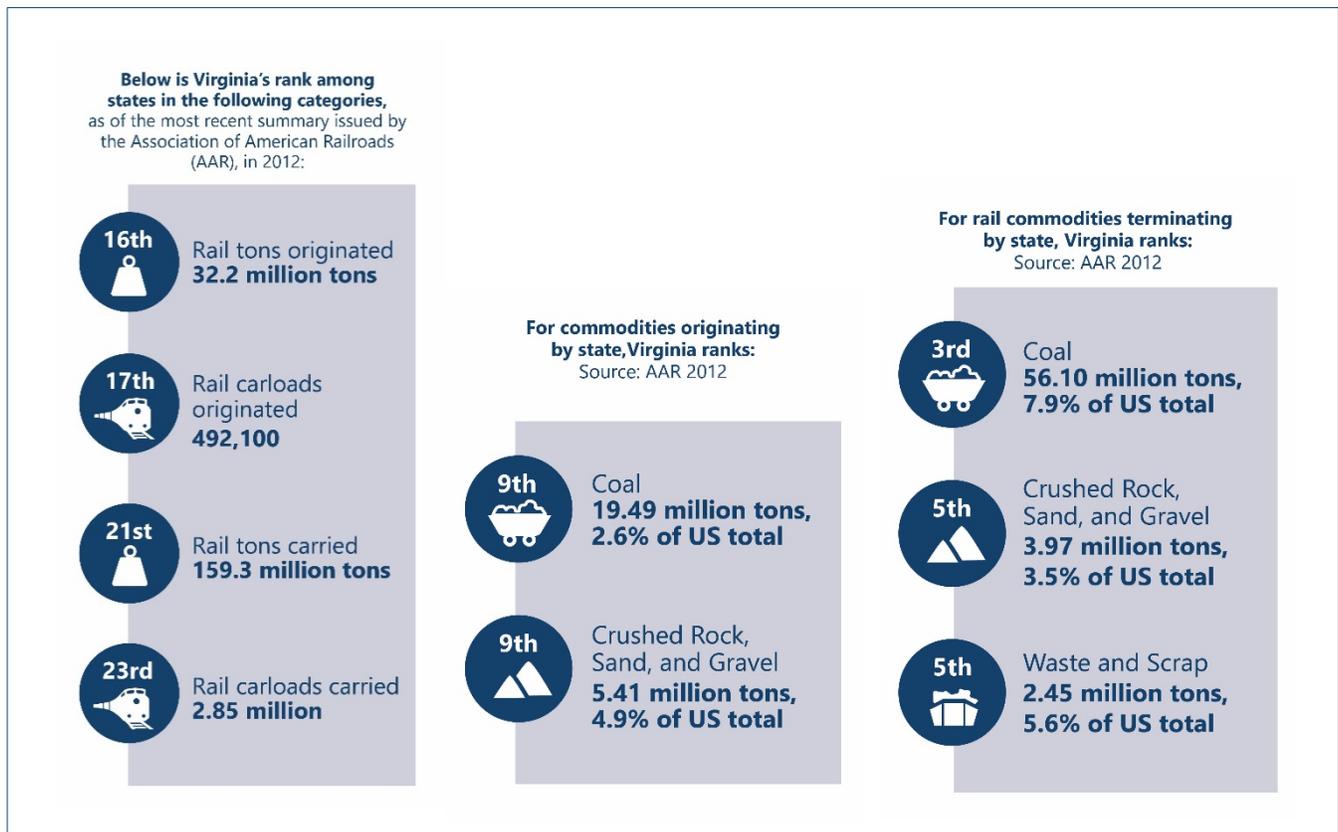


- North Carolina & Virginia Railroad (NCVA)
- Shenandoah Valley Railroad (SV)
- Winchester & Western Railroad (WW)

Today, the rail system in Virginia plays an essential freight transportation role both within the state and nationally. Virginia’s location and position on principal rail corridors provides rail access to every region of the U.S., as well as ports along the entire Atlantic coast.

**Figure 1-1** shows Virginia’s rank among states in multiple categories, as of the most recent summary issued by the Association of American Railroads (AAR), in 2012<sup>10</sup>. Of note, Virginia ranks within the top 10 for multiple commodities both originating and terminating in the state:

**Figure 1-1: Virginia's Rank**



<sup>10</sup> AAR, State Rankings, 2012.

## 1.2.2 Virginia's Passenger Rail Services

Intercity passenger rail service in Virginia is provided by Amtrak. These services consist of:

- Virginia regional service through Amtrak's Northeast Regional trains on four routes from Washington, D.C. to Richmond, Norfolk, Newport News, Lynchburg, and Roanoke;
- Interstate corridor and long-distance trains that operate through Virginia on routes linking New York with Miami, Savannah, Charlotte, New Orleans, and Chicago; and
- The long-distance Auto Train operating between Lorton, Virginia and Sanford, Florida.

Commuter rail service in Virginia is provided by Virginia Railway Express (VRE) on two routes from Washington, D.C. to Broad Run (the Manassas Line) and Spotsylvania (the Fredericksburg Line). Connections between passenger and commuter rail services and local rail transit systems can be made in Alexandria, Franconia-Springfield, and Crystal City with Washington, D.C.'s Metrorail, and at Norfolk with The Tide light rail service. As metropolitan areas in Virginia continue to grow, the need to invest in a diverse network of passenger transportation options that will accommodate this population growth has been recognized.

## 1.3 Institutional Structure of Virginia's State Rail Program

### 1.3.1 Commonwealth Transportation Board – Policy

Virginia's CTB establishes the administrative policies for the Commonwealth's transportation system.<sup>11</sup> CTB members are appointed by the governor; each represents a district with the exception of four at-large members. The CTB allocates transportation funding to specific projects, locates routes, and provides funding for highways, rail, and public transportation projects. The CTB Rail Committee, a subgroup of the CTB, meets separately and works with DRPT staff on policies, procedures, special projects, and reports related to rail.

The SYIP is produced annually and contains six years of projects; however, the CTB only allocates funding for the first fiscal year of the SYIP. The other five fiscal years are estimations for future allocations.<sup>12</sup> As revenue estimates are updated, priorities are revised, and project schedules and costs change, the CTB makes annual adjustments to the SYIP projects accordingly.

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<sup>11</sup> <http://www.ctb.virginia.gov/>

<sup>12</sup> <http://www.virginiadot.org/projects/syp-default.asp>



### 1.3.2 Transportation Secretariat – Executive

#### Office of Intermodal Planning and Investment

The purpose of the OIPI of the Secretary of Transportation is to provide solutions that link existing transportation systems; promote the coordination of transportation investments and land use planning; reduce congestion; improve safety, mobility, and accessibility; and provide for greater travel options.<sup>13</sup>

The director of OIPI advises the Virginia Secretary of Transportation, the Virginia Aviation Board, the Virginia Port Authority Board, and the CTB on intermodal issues.<sup>14</sup>

#### Virginia Department of Rail and Public Transportation

DRPT is responsible for administering grant funding for intercity passenger rail, freight rail and transit services in the state, and coordinating overall state rail and public transportation improvement strategies. The Department is also responsible for rail planning and project development activities, including development of this State Rail Plan.

States must establish or designate a State Rail Transportation Authority to develop state rail plans that set policy involving freight and passenger (intercity and commuter) rail transportation within their boundaries, establish priorities and implementation strategies to enhance rail service in the public interest, and serve as the basis for Federal and State rail investments within the state. DRPT is Virginia's State Rail Transportation Authority (SRTA) and State Rail Plan Approval Authority (SRPAA). Furthermore, Virginia complies with the requirements of 49 U.S.C. §22102, which stipulates eligibility requirements for long-established FRA rail freight grant assistance programs pertaining to state planning and administration.

DRPT has no rail regulatory authority. It participates in the railroad abandonment process and offers comment on federal rail legislation and rulemaking; however, the Virginia State Corporation Commission's (SCC) Division of Utility and Railroad Safety, in conjunction with the FRA, is responsible for enforcing state and federal statutes related to railroads.<sup>15</sup>

DRPT's rail grant funding provides access and improvements to Virginia's railways to encourage economic development and reduce traffic on Virginia's highways. Specifically, funding focuses on capacity projects at the Port of Virginia, passenger rail service improvements, mainline freight capacity improvements, shortline infrastructure upgrades, and improving rail access industrial businesses along

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<sup>13</sup> [http://vtrans.org/about\\_us.asp#what\\_we\\_do](http://vtrans.org/about_us.asp#what_we_do)

<sup>14</sup> Ibid.

<sup>15</sup> <http://www.scc.virginia.gov/comm/cent.pdf>



existing rail lines. In addition, DRPT completes an annual SYIP for rail and transit projects. The SYIP is the means by which the CTB meets its statutory obligation under the Code of Virginia to allocate funds to interstate, primary, secondary, and urban highway systems, public transit, ports, airports, rail, and other programs for the immediate fiscal year and five succeeding fiscal years.<sup>16</sup>

### DRPT's Rail Division

DRPT's Rail Division has the responsibility to administer rail grants (including administering passenger rail operating grants) and to conduct rail planning activities. Below is a list of DRPT Rail Division responsibilities:

- Rail policy and legislation development<sup>17</sup>
- Development of the DRPT SYIP for freight and passenger rail projects
- Advocacy and communications for promoting transportation options<sup>18</sup>
- Administration of Rail Grants<sup>19</sup>
  - Rail Industrial Access Fund
  - Shortline Railway Preservation and Development Fund
  - Rail Enhancement Fund
  - Intercity Passenger Rail Operating and Capital Fund
- Project oversight – design and construction
- Passenger rail, freight rail, and public transportation planning<sup>20</sup>
- Coordination with Amtrak, CSX, NS, shortline railroads, VRE, other states, local MPOs, and agencies on Virginia regional service passenger rail operations, planning, and railroad infrastructure development

### Virginia Department of Transportation

DRPT serves as the lead agency for rail and public transportation, administering funds for rail investments and public transportation agency formula funds. However, VDOT administers the federal highway-rail crossing safety program and serves as the lead agency for highway transportation. The rail crossing safety program provides safety analysis, project selection, and project funding and implementation of grade crossing improvements and closings. These funds are administered through VDOT's Engineering Division as part of the Virginia Highway Safety Improvement Program.

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<sup>16</sup> Ibid.

<sup>17</sup> <http://www.drpt.virginia.gov/about-us/legislative-updates/>

<sup>18</sup> <http://www.drpt.virginia.gov/about-us/core-mission/>

<sup>19</sup> <http://www.drpt.virginia.gov/grantees/rail-grants/>

<sup>20</sup> <http://www.drpt.virginia.gov/about-us/background/>



In partnership with DRPT, VDOT oversees its own SYIP that outlines planned spending for transportation projects proposed for construction development or study over a six-year cycle.<sup>21</sup>

### VDOT Right of Way and Utilities Division

The Right of Way and Utilities Division has a role in the Commonwealth's acquisition of right-of-way (ROW) needed for the implementation of new intercity passenger rail services sponsored by the Commonwealth of Virginia. The office has eight sections related to ROW design and acquisition for state transportation projects.<sup>22</sup> The Right of Way and Utilities Division also has a Rail Section for the coordination of railroad activities, right of entry agreements, grade crossing agreements, and other projects requiring agreements with railroads, while also providing timely guidance and direction to VDOT staff/consultants statewide.<sup>23</sup>

### VDOT Office of Public-Private Partnerships

VDOT houses the Office of Public-Private Partnerships and works with DRPT and the CTB to develop Virginia's Public-Private Transportation Act of 1995 (PPTA) manual and guidelines. These guidelines are based on the Code of Virginia § 33.2-1801 which provides the policy of the General Assembly regarding the PPTA.<sup>24</sup> The PPTA, as amended, is the legislative framework enabling the Commonwealth of Virginia, local governments, and certain other public entities as defined in the PPTA to enter into agreements authorizing private entities to develop or operate qualifying transportation facilities. More information, including Virginia's current and completed projects, can be found at <http://www.p3virginia.org/>.

### Virginia's Port Authority

The Virginia Port Authority reports to the Virginia Secretary of Transportation and owns the Port of Virginia. The Port Authority fosters and stimulates the growth for Virginia's economy by serving as the global gateway for the import and export of freight, improving navigable waters within the Commonwealth of Virginia, and by aiding in the development of commerce for all of Virginia's maritime and inland ports.<sup>25</sup>

The Port of Virginia is the fifth largest container port in the nation, moving more than 2.3 million twenty-foot equivalent units (TEUs) of cargo through its terminals every year. The Port, shown in **Figure**

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<sup>21</sup> Ibid.

<sup>22</sup> <http://www.virginiadot.org/business/row-default.asp>

<sup>23</sup> Ibid.

<sup>24</sup> <http://law.lis.virginia.gov/vacode/title33.2/chapter18/section33.2-1801/>

<sup>25</sup> <http://www.portofvirginia.com/wp-content/uploads/2016/02/TPOV-master-plan-2065-final-020316.pdf>

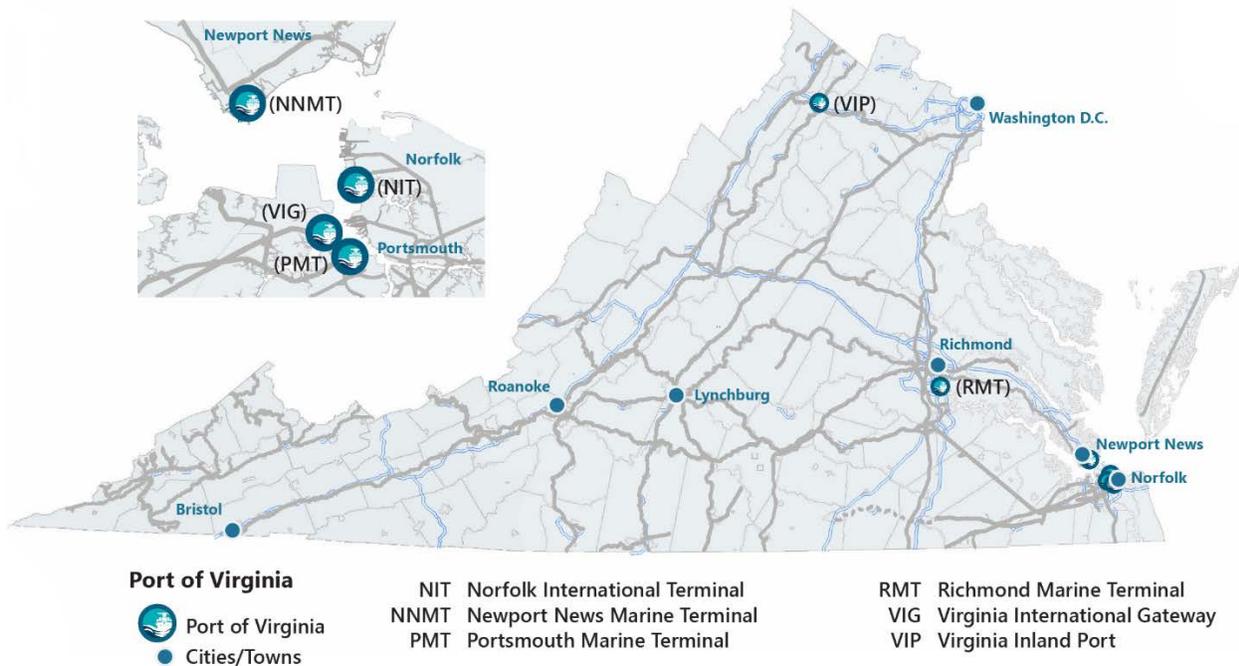


1-2, is made of up of four deep-water marine terminals, an upriver terminal, and an inland intermodal terminal<sup>26</sup>:

- Norfolk International Terminals (NIT)
- Newport News Marine Terminal (NNMT)
- Virginia International Gateway (VIG)
- Portsmouth Marine Terminal (PMT)
- Richmond Marine Terminal (RMT)
- Virginia Inland Port (VIP)

Two Class I railroads, CSX and NS, serve the Port of Virginia via on-dock intermodal container transfer facilities at Virginia International Gateway and Norfolk International Terminals.<sup>27</sup> The service offered by the Class I railroads is augmented by vital shortline rail partners including the Norfolk & Portsmouth Belt Line Railroad and the Commonwealth Railway.<sup>28</sup>

**Figure 1-2: Map of the Port of Virginia**



<sup>26</sup> Ibid.

<sup>27</sup> <http://www.portofvirginia.com/about/>

<sup>28</sup> Ibid.



### 1.3.3 Other State Agencies or Initiatives Related to Rail

#### State Corporation Commission: Division of Utility and Railroad Safety

The SCC Division of Utility and Railroad Safety oversees the safety programs involving underground utility damage prevention, jurisdictional natural gas and hazardous liquid pipeline facilities, and railroads.<sup>29</sup> The SCC Division of Utility and Railroad Safety and the FRA cooperatively conduct inspections of railroad facilities including track and equipment to ensure safe operation of jurisdictional railroads within Virginia.<sup>30</sup> A more detailed description of the SCC and their role in railroad safety regulation is located in **Chapter 2**.

#### Virginia Economic Development Partnership

In 1995, the Virginia General Assembly created the Virginia Economic Development Partnership (VEDP) to better serve those seeking a prime business location and increased trade opportunities and thereby foster increased expansion of the Commonwealth's economy.<sup>31</sup>

VEDP focuses on cultivating new business investment, fostering international trade growth, and encouraging the expansion of existing Virginia businesses.<sup>32</sup> When VEDP identifies new or expanding industries that have needs related to the railroad network, DRPT staff work with VEDP and the client on railroad grant applications to construct capacity improvements or refurbish existing railroad infrastructure.

### 1.3.4 Regional and Local Organizations

In addition to DRPT and VDOT, Virginia's transportation agencies include Metropolitan Planning Organizations (MPO) and Planning District Commissions/Regional Councils (PDC/RC).

#### 1.3.4.1 Metropolitan Planning Organizations

MPOs are federally mandated and funded transportation policy-making organizations comprised of local government and transportation officials. The formation of an MPO is required for any urbanized area with a population greater than 50,000.

MPOs are required to maintain and continually update a Long-Range Transportation Plan (LRTP) as well as a Transportation Improvement Program (TIP), which is a multi-year program of transportation

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<sup>29</sup> <https://www.scc.virginia.gov/urs/index.aspx>

<sup>30</sup> Ibid.

<sup>31</sup> <http://www.yesvirginia.org/AboutUs>

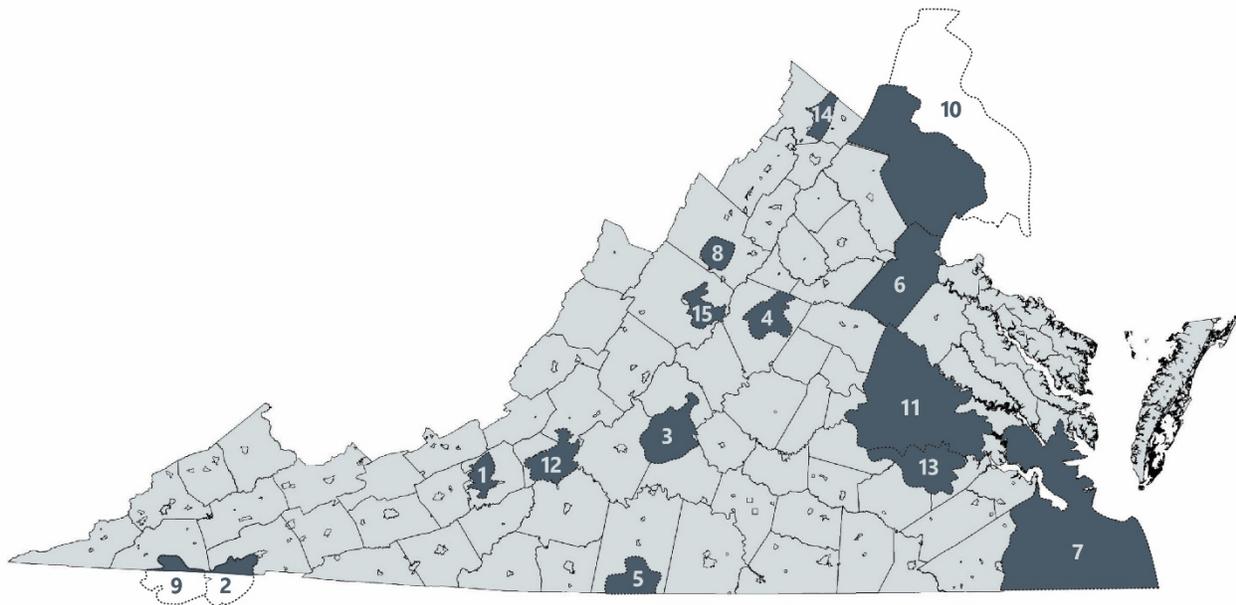
<sup>32</sup> Ibid.



projects to be funded with federal and other transportation funding sources. As MPO planning activities have evolved to address the movement of freight as well as passengers, they have included consideration of multimodal solutions, improved intermodal connections, and more specific rail and rail-related project solutions. DRPT transit and rail division staff work with MPOs and PDCs - attending various meetings and workshops - to ensure transit, demand management, and rail strategies and projects are included in regional transportation plans.

The 15 MPOs are shown in **Figure 1-3**.

**Figure 1-3: Map of Virginia MPOs**



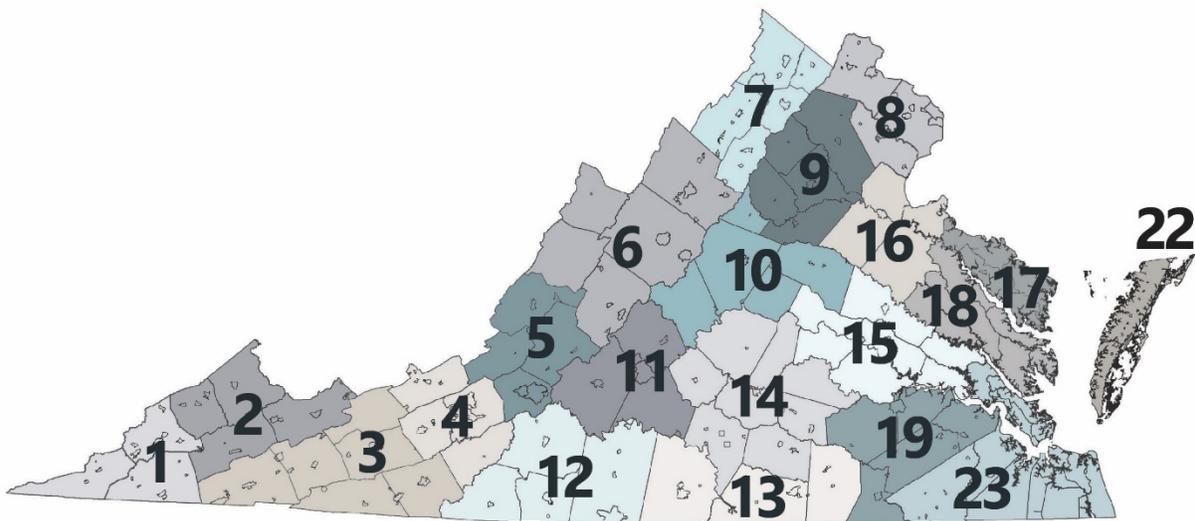
- |  |   |
|--|---|
| 1. Blacksburg-Christiansburg-Montgomery Area MPO | 9. Kingsport MPO  |
| 2. Bristol MPO                                   | 10. National Capital Region Transportation Planning Board |
| 3. Central Virginia MPO                          | 11. Richmond Regional TPO                                 |
| 4. Charlottesville-Albemarle MPO                 | 12. Roanoke Valley TPO                                    |
| 5. Danville MPO                                  | 13. Tri Cities Area MPO                                   |
| 6. Fredericksburg Area MPO                       | 14. Winchester-Frederick County MPO                       |
| 7. Hampton Roads TPO                             | 15. Staunton-Augusta-Waynesboro MPO                       |
| 8. Harrisonburg-Rockingham MPO                   |   |

Source: Virginia Association of Metropolitan Planning Organizations, 2016 and HDR

### 1.3.4.2 Planning District Commissions and Regional Councils

PDC/RCs are responsible for addressing transportation and related issues in regions of Virginia outside the metropolitan areas represented by MPOs. Strategic, land use, and transportation planning are services that Virginia PDC/RCs provide, in relation to rail.<sup>33</sup> Virginia has 21 PDC/RCs, which are shown in **Figure 1-4**.<sup>34</sup>

**Figure 1-4: Virginia Planning District Commissions**



- |                                  |                            |                              |
|----------------------------------|----------------------------|------------------------------|
| 1. LENOWISCO PDC                 | 8. Northern Virginia RC    | 15. Richmond Regional PDC    |
| 2. Cumberland Plateau PDC        | 9. Rappahannock-Rapidan RC | 16. George Washington RC     |
| 3. Mount Rogers PDC              | 10. Thomas Jefferson PDC   | 17. Northern Neck PDC        |
| 4. New River Valley RC           | 11. Region 2000 LGC        | 18. Middle Peninsula PDC     |
| 5. Roanoke Valley-Alleghany RC   | 12. West Piedmont PDC      | 19. Crater PDC               |
| 6. Central Shenandoah PDC        | 13. Southside PDC          | 22. Accomack-Northampton PDC |
| 7. Northern Shenandoah Valley RC | 14. Commonwealth RC        | 23. Hampton Roads PDC        |

Source: Virginia Association of Planning District Commissions and HDR

<sup>33</sup> <http://www.vapdc.org/?page=6>

<sup>34</sup> <http://www.vapdc.org/?page=10>

### 1.3.4.3 Local and Regional Economic Development Agencies

Virginia has a number of local public and private economic development agencies that recruit industries and businesses based on their location, available labor force, room for growth, and access to rail and other transportation assets.

The *Virginia Directory of Economic Development Organizations* lists 73 entities around the state, including economic development agencies and authorities, chambers of commerce, alliances, development councils, corporations, associations, and marketing coalitions at the regional, county, or local level of government.<sup>35</sup> Many of these agencies offer incentives such as tax exemptions and credits and other means of assistance to attract business interests. Although these agencies do not generally work directly with freight railroad operators, they do have a vested interest in the level of rail services and rail assistance programs available to supplement their incentives.

### 1.3.5 Multi-State Cooperatives

#### 1.3.5.1 I-81 Corridor Coalition

Virginia participates in the Interstate 81 (I-81) Corridor Coalition, a multistate initiative to improve the safety and efficiency of freight and passenger movement along the I-81 corridor. The mission of the coalition is to coordinate decision making, management, and operations of I-81 through the sharing of information.

#### 1.3.5.2 I-95 Corridor Coalition

The Interstate 95 (I-95) Corridor Coalition is a partnership of transportation agencies, toll authorities, public safety, and related organizations, from the State of Maine to the State of Florida, including Virginia participation. In 1993, the Coalition was formally established to enhance transportation mobility, safety, and efficiency along I-95; with a specific focus on studying and testing intelligent transportation systems (ITS) technologies. In more recent years, the Coalition's perspective evolved from a concentration on highways to one that encompasses all modes of travel and focuses on the efficient transfer of people and goods between modes.

#### 1.3.5.3 Virginia-North Carolina High Speed Rail Compact

Virginia and North Carolina have established the only bi-state, high-speed rail partnership in America, the Virginia-North Carolina High Speed Rail Compact, which was authorized by Congress and established through legislation enacted by the Virginia and North Carolina General Assemblies. The

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<sup>35</sup> <http://www.gdi-solutions.com/directory/edo/virginia.htm>



purpose of the Compact is to examine and discuss strategies to advance multi-state high-speed rail initiatives.

#### 1.3.5.4 Southeast Rail Coalition

In 2002, FRA designated ten high speed corridors under Section 101-0 of the Intermodal Surface Transportation Act of 1991 (ISTEA) and Section 11-03(c) of the Transportation Efficiency Act for the 21st Century (TEA-21) for passenger rail service in high population density and congested intercity sections of the nation. Currently, Virginia is included in the Southeast Rail Coalition to discuss, share information and further development of the rail corridors designated in the southeast. Virginia joins a coalition of states in the southeast, including North Carolina, South Carolina, Georgia, and Florida.

## 1.4 Virginia's Authority to Conduct Rail Planning and Investment

### 1.4.1 State Authority for Rail Planning

The Virginia Code, Title 33.2 (Transportation) Subtitle I, Chapter 2, Section 285 assigns powers to DRPT to plan and implement transportation system improvements. DRPT's rail-related responsibilities per the Virginia Code are detailed in Virginia Code § 33.2-285<sup>36</sup>.

### 1.4.2 State Authority for Grant, Loan, and Other Rail Financing

The Virginia Code, Title 33.2 (Transportation) Subtitle III, Chapter 16, Sections 1600 through 1604 establish methods for state rail funding in Virginia. Four types of funds have been codified:

- Rail Industrial Access Grants (§ 33.2-1600)
- Rail Enhancement Fund (REF) (§ 33.2-1601)
- Shortline Railway Preservation and Development Fund (§ 33.2-1602)
- Intercity Passenger Rail Operating and Capital (IPROC) Fund (§ 33.2-1603)

In addition, Virginia provides funding through various sources for commuter rail projects and public-private transportation projects. A brief overview of these funds will be discussed in more detail in the following chapters. Sources of federal funding are described in detail in **Chapter 2** of the Virginia State Rail Plan.

#### Rail Industrial Access Grants

The Rail Industrial Access Grants fund the construction of industrial access railroad tracks through the Transportation Trust Fund (TTF), pending approval by the CTB.<sup>37</sup> The TTF is created by Virginia's tax

<sup>36</sup> <http://law.lis.virginia.gov/vacode/title33.2/chapter2/section33.2-285/>



base; its revenues are the major source of transportation funding within the Commonwealth. The Rail Industrial Access Fund promotes truck diversion by providing grant assistance to connect new or expanding businesses to the freight railroad network.<sup>38</sup> The program supports localities, businesses, or industries seeking access to a common carrier railroad. Applications are accepted throughout the year.<sup>39</sup>

### Rail Enhancement Fund

Created by the General Assembly in 2005, the REF provides for the retention, maintenance, improvement, and development of freight and passenger railways, which are essential to the Commonwealth's continued economic growth, vitality, and competitiveness in national and world markets.<sup>40</sup>

Projects undertaken using these funds must create public benefits within the Commonwealth that exceed the investment from the fund.<sup>41</sup> Such benefits include the improvement of traffic congestion and environmental quality, and reduction in highway maintenance needs.<sup>42</sup> This fund is the primary source for the implementation of large capital projects for rail improvements, and all projects receiving funds from the REF must include a minimum of 30 percent cash or "in-kind" matching contribution from a non-state source, that may include a private source, a railroad, a regional authority, a local government source, or a combination of such sources.<sup>43</sup>

### Shortline Railway Preservation and Development Fund

The Shortline Railway Preservation and Development Fund (§33.2-1602) is a non-reverting fund for the preservation and continuation of existing rail service to increase productivity, safety, and efficiency of shortline railroad transportation in Virginia; created in 1992 and codified in 2006.<sup>44</sup> As of 2015, the Shortline Railway Preservation and Development Fund has allocated \$3 million annually for shortline rail

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<sup>37</sup> [http://www.ctb.virginia.gov/resources/2015/May/pres/Presentation\\_Agenda\\_Item\\_7.pdf](http://www.ctb.virginia.gov/resources/2015/May/pres/Presentation_Agenda_Item_7.pdf)

<sup>38</sup> <http://www.drpt.virginia.gov/grantees/rail-grants/>

<sup>39</sup> Ibid.

<sup>40</sup> <http://law.lis.virginia.gov/vacode/title33.2/chapter16/section33.2-1601/>

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

<sup>43</sup> Ibid.

<sup>44</sup> <http://law.lis.virginia.gov/vacode/title33.2/chapter16/section33.2-1602/>



improvement projects. These funds are administered by DRPT and are subject to the approval of the CTB.<sup>45</sup>

The Shortline Railway Preservation and Development Fund assists operations for Virginia's shortline railroads.<sup>46,47</sup> The Shortline Railway Preservation Development Fund referred to as the Rail Preservation Program assists in the operations for Virginia's shortline railroads. The Rail Preservation Program supported 18 projects for Virginia's shortline railroads in FY 2016.<sup>48</sup> These Rail Preservation projects consist primarily of bridge and track upgrades, signal system upgrades, yard improvements, siding enhancements, and tie and rail replacement, as well as the related ballast, tamping, and surfacing of existing rail lines operated by the shortline railroads in Virginia. These projects are funded through the annual TTF allocation and related interest revenues, and the Transportation Capital Projects Revenue (CPR) bonds.<sup>49</sup>

### Intercity Passenger Rail Operating and Capital Fund

The IPROC Fund was created by the General Assembly in 2011 as a strategy to sustain Virginia's share of Amtrak Virginia's operating budget, pursuant to PRIIA guidelines, and can be found in Virginia Code § 33.2-1602.<sup>50</sup> The IPROC fund is used to fund four state-supported Amtrak routes, consisting of six Virginia regional service Amtrak trains. The PRIIA Act of 2008 required states with Amtrak services less than 750 miles to pay for the routes or cease operation, and the IPROC fund enables the Commonwealth to continue those services.<sup>51</sup> The IPROC fund is also the source of funds for passenger rail equipment upgrades and capital improvements.<sup>52</sup>

### Commuter Rail Funding

VRE is currently the only agency that provides commuter rail service in the Commonwealth. Funding for commuter rail service is supported by federal and state transportation funds, along with local matching funds. Portions of the federal operating funds for VRE are managed through the transit side of DRPT. Because VRE is considered a commuter rail service, which is a transit function, federal funding is

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<sup>45</sup> [http://www.ctb.virginia.gov/resources/2015/dec/reso/attach/Resolution10\\_Attachment\\_A\\_Rail\\_Policy.pdf](http://www.ctb.virginia.gov/resources/2015/dec/reso/attach/Resolution10_Attachment_A_Rail_Policy.pdf)

<sup>46</sup> Ibid.

<sup>47</sup> <http://www.drpt.virginia.gov/media/1640/2014-2016-strategic-plan-2015-06-17-final-va-performs.pdf>

<sup>48</sup> <http://www.drpt.virginia.gov/media/1637/fy-2016-drpt-agency-budget-final-final.pdf>

<sup>49</sup> [http://www.ctb.virginia.gov/resources/2015/May/pres/Presentation\\_Agenda\\_Item\\_7.pdf](http://www.ctb.virginia.gov/resources/2015/May/pres/Presentation_Agenda_Item_7.pdf)

<sup>50</sup> <http://law.lis.virginia.gov/vacode/title33.2/chapter16/section33.2-1603/>

<sup>51</sup> <http://www.drpt.virginia.gov/grantees/rail-grants/>

<sup>52</sup> Ibid.



managed by the FTA. Additionally, DRPT provides capital funding for projects that benefit VRE through the Rail Division's REF grants.

### 1.4.3 State's Past Funding of Rail Programs and Projects

Virginia has made significant advancements in recent years in providing dedicated funding for rail investments. DRPT's existing funding programs provide a strong foundation for future funding aimed at further rail improvements. In the last five years, DRPT has invested nearly \$140 million per year for rail improvements in Virginia<sup>53</sup>. Funding for DRPT's rail programs was supported through the following funding sources to support freight (including shortlines), port, industrial, and passenger rail programs and projects<sup>54</sup>:

- Federally-administered rail grants [i.e. American Recovery and Reinvestment Act (ARRA) fund];
- Rail Industrial Access grants;
- Rail Enhancement Fund;
- Shortline Railway Preservation and Development Fund;
- Intercity Passenger Rail Operating and Capital Fund;
- Transportation Capital Projects Revenue;
- Virginia Transportation Act of 2000 (VTA 2000) funds; and,
- Local match.

### 1.4.4 Corridors of Statewide Significance

**Table 1-1** identifies the rail lines in Virginia that are part of the Corridors of Statewide Significance designated by the CTB. Corridors of Statewide Significance are defined as "an integrated, multimodal network of transportation facilities that connect major centers of activity within and through the Commonwealth and promote the movement of people and goods essential to the economic prosperity of the state." The components of these corridors are the facilities and services that comprise the multimodal network connecting each corridor's major centers of activity and accommodate intercity travel between those centers as well as interstate traffic. These components include highways, railroad lines, transit services, multimodal facilities, port facilities, and airports. According to Virginia's Office of Intermodal Planning and Investment, to be considered a Corridor of Statewide Significance, a corridor must meet all four of the following criteria:

- Multimodal - Must involve multiple modes of travel or must be an extended freight corridor.
- Connectivity - Must connect regions, states, and/or major activity centers.

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<sup>53</sup> <http://www.drpt.virginia.gov/finance-procurement/archives/>

<sup>54</sup> Ibid.



- High Volume - Must involve a high volume of travel.
- Function - Must provide a unique statewide function and/or address statewide goals.

Corridors of Statewide Significance are intended to be a focus of statewide investment. The CTB envisioned that high priority multimodal projects within these corridors would be given increased consideration/prioritization over single-mode solutions in modal plans.

**Table 1-1: Virginia Corridors of Statewide Significance**

Corridor of Statewide Significance	Approximate Virginia Endpoints	Major Rail Service
<b>Coastal Corridor (US 17)</b>	Winchester-Fredericksburg-Hampton Roads	N/A
<b>Crescent Corridor (I-81)</b>	Winchester-Roanoke-Bristol	Freight Only NS Crescent Corridor
<b>East-West Corridor (I-64)</b>	Hampton Roads-Richmond-Clifton Forge	CSX Coal Network, Freight and Passenger Buckingham Branch Railroad, CSX James River and Peninsula Lines Amtrak Newport News Service
<b>Eastern Shore Corridor (US 13)</b>	New Church-Cape Charles-Hampton Roads-Branchville	Freight Bay Coast Railroad, CSX National Gateway
<b>Heartland Corridor (US 460)</b>	Hampton Roads-Lynchburg-Roanoke-Radford	Freight and Passenger NS Heartland Corridor Amtrak Norfolk Service and Amtrak Lynchburg service extension to Roanoke
<b>North Carolina to West Virginia Corridor (US 220)</b>	Monterey-Roanoke-Martinsville	Freight CSX Coal Network, NS Winston-Salem District
<b>North-South Corridor (VA 234)</b>	Leesburg-Manassas-Dumfries	N/A
<b>Northern Virginia (I-66)</b>	Arlington-Gainesville-Middletown	Freight and Passenger NS Crescent Corridor Amtrak Lynchburg service VRE Manassas Line
<b>Seminole Corridor (US 29)</b>	Arlington-Manassas-Lynchburg-Danville	Freight and Passenger NS Crescent Corridor Amtrak Lynchburg service and Amtrak Crescent trains VRE Manassas Line



Corridor of Statewide Significance	Approximate Virginia Endpoints	Major Rail Service
<b>Southside Corridor (US 58)</b>	Hampton Roads-Danville- Bristol-Hagans-Cumberland Gap	Freight CSX National Gateway, NS Franklin District, CSX Coal Network, NS coal branches
<b>Washington to North Carolina Corridor (I-95)</b>	Arlington-Richmond- Emporia	Freight and Passenger CSX I-95 corridor/National Gateway Amtrak Richmond, Newport News, Norfolk, and other long-distance services, VRE Fredericksburg Line
<b>Western Mountain Corridor (I-77)</b>	Wytheville-Lamsburg	N/A

## 1.5 Summary of Freight and Passenger Rail Services and Initiatives in Virginia

### 1.5.1 Existing Rail System

#### Virginia’s Existing Freight Railroads

The rail system in Virginia is comprised of over 3,000 route miles owned and operated by freight railroads. CSX and NS own approximately 2,841 route miles, or 93.54 percent of the total rail mileage in the state. Shortline railroads own a total of approximately 196 route miles, or 6.46 percent of the total rail mileage in the state. Some shortline railroads also lease and operate track that is owned by Class I railroads in Virginia, most significantly 200 miles of CSX-owned lines between Richmond, Orange, and Clifton Forge that are leased and operated by the Buckingham Branch Railroad, with CSX retaining trackage rights. In 2012, the Commonwealth’s freight railroads carried 151 million tons of freight<sup>55</sup>, or approximately 2.1 million rail carloads of various commodities, to, from, within, and through Virginia.<sup>56</sup> The Commonwealth’s freight railroads and their respective networks in Virginia are identified and described in detail in **Chapter 2** of the Virginia State Rail Plan.

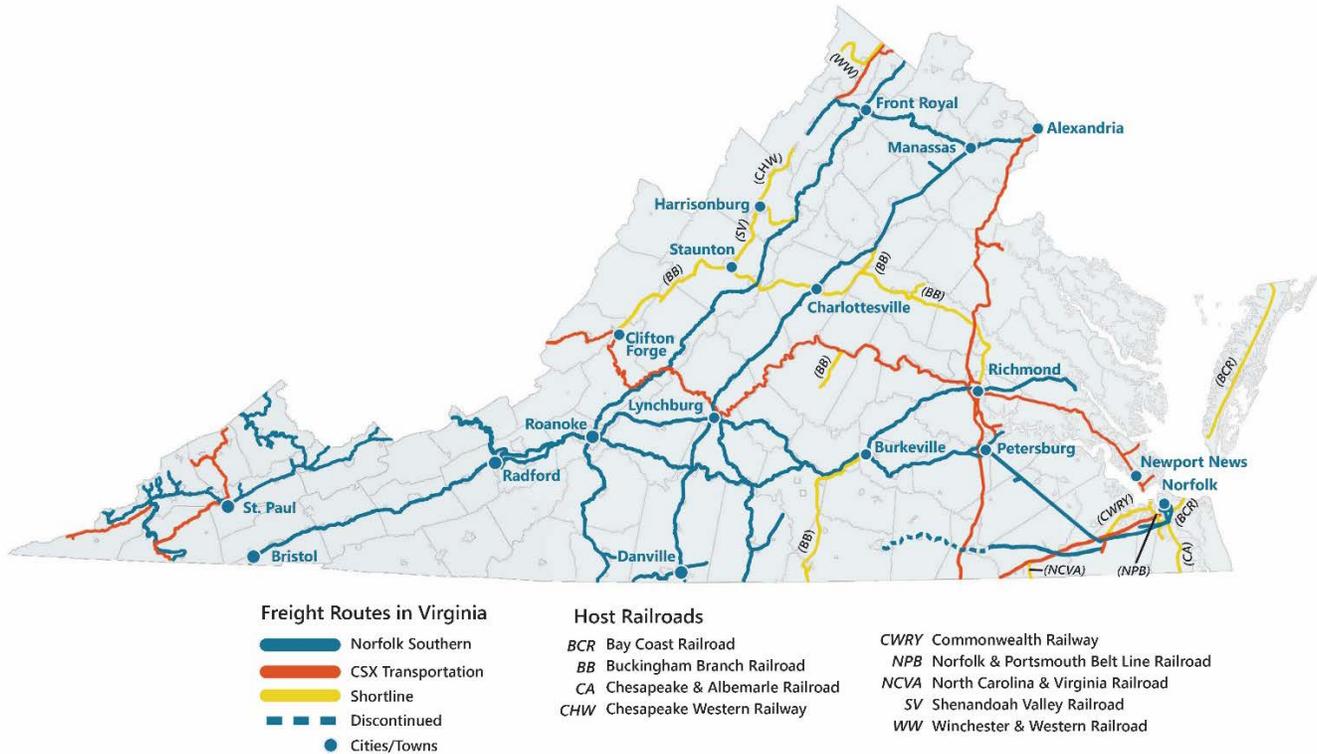
A map of Virginia’s freight railroad network appears in **Figure 1-5**.

<sup>55</sup> Six million tons of through freight in the Virginia 2012 TRANSEARCH database was removed as it could not be confirmed if that freight traveled through Virginia.

<sup>56</sup> Virginia 2012 TRANSEARCH database



**Figure 1-5: Virginia Freight Railroad Network**



### Virginia's Existing Passenger Services

Amtrak operates 24 intercity passenger trains per day in Virginia.<sup>57</sup> This includes 12 Northeast Regional trains per day that operate on Amtrak's Northeast Corridor (NEC) between Boston and Washington, and continue south to serve stations in Virginia with four different services:

- Washington-Roanoke (Route 46)
- Washington-Newport News (Route 47)
- Washington-Norfolk (Route 50)
- Washington-Richmond (Route 51)

Amtrak also operates a daily roundtrip interstate corridor train (Carolinian) between New York and Charlotte that serves stations in Virginia, with operating support provided by the state of North Carolina. In addition, Amtrak operates the Auto Train and five long-distance passenger trains that make station stops in Virginia:

<sup>57</sup> The Cardinal long distance train operates only 3 days per week in each direction. On weekends, Amtrak operates fewer Northeast Regional trains between Richmond and the Northeast Corridor.



- Auto Train (daily between Lorton, Virginia and Sanford, Florida – no intermediate stops)
- Cardinal (three days per week in each direction between New York and Chicago)
- Crescent (daily between New York and New Orleans)
- Palmetto (daily between New York and Savannah)
- Silver Meteor (daily between New York and Miami)
- Silver Star (daily between New York and Miami)

Three freight railroads host Amtrak passenger trains in Virginia:

- CSX - Washington, D.C. through Richmond to Rocky Mount, North Carolina; Richmond to Newport News; and Clifton Forge to White Sulphur Springs, West Virginia
- NS - Alexandria to Greensboro, North Carolina, and Petersburg to Norfolk
- Buckingham Branch Railroad - Orange to Clifton Forge

During Amtrak's FY 2015, 1,606,007 passengers boarded or alighted at the 20 Amtrak passenger rail stations located in Virginia. Fiscal year boardings and alightings at individual stations ranged from 6,735 (Staunton, served triweekly by the Cardinal) to 361,996 (Richmond's Staples Mill Road Station). In addition, Amtrak estimates that residents of Northern Virginia account for more than 1 million of the 5 million annual passengers that use Washington Union Station.<sup>58</sup>

VRE operates 32 revenue commuter trains each weekday, with 16 trains on the Manassas Line and 16 trains on the Fredericksburg Line. The commuter agency carries approximately 20,000 passengers per day and serves 17 rail stations in Virginia.<sup>59</sup>

Virginia's passenger routes are mapped in **Figure 1-6**.

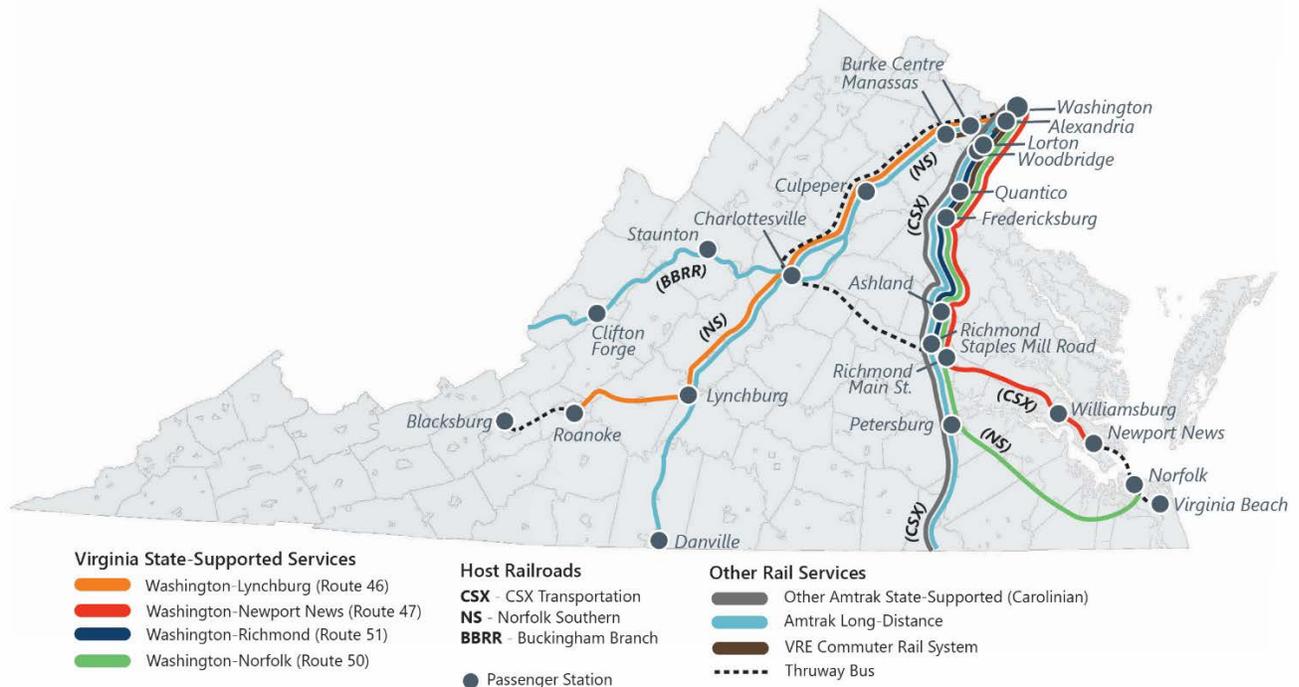
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<sup>58</sup> <https://www.amtrak.com/ccurl/909/510/VIRGINIA15.pdf>

<sup>59</sup> <http://www.vre.org/about/>



**Figure 1-6: Passenger Routes in Virginia**



Source: Amtrak and VRE

In addition to the Commonwealth’s freight, intercity passenger, and commuter rail services, two groups in Virginia currently provide excursion train opportunities on a limited basis. The Virginia Museum of Transportation sponsors occasional train excursions powered by Norfolk & Western No. 611, a restored streamlined steam locomotive built at Roanoke in 1950 to haul passenger trains through Virginia. The locomotive is based in Roanoke, although the museum has sponsored excursions throughout the Commonwealth. The Old Dominion Chapter of the National Railway Historical Society, a nonprofit railroad history organization, owns its own passenger equipment and arranges seasonal train excursions departing from Dillwyn on the shortline Buckingham Branch Railroad.

Virginia’s rail network, as well as its contributions and impacts on the state, are described in detail in **Chapter 2** of the Virginia State Rail Plan.

### 1.5.2 Virginia’s Rail Industry Drivers

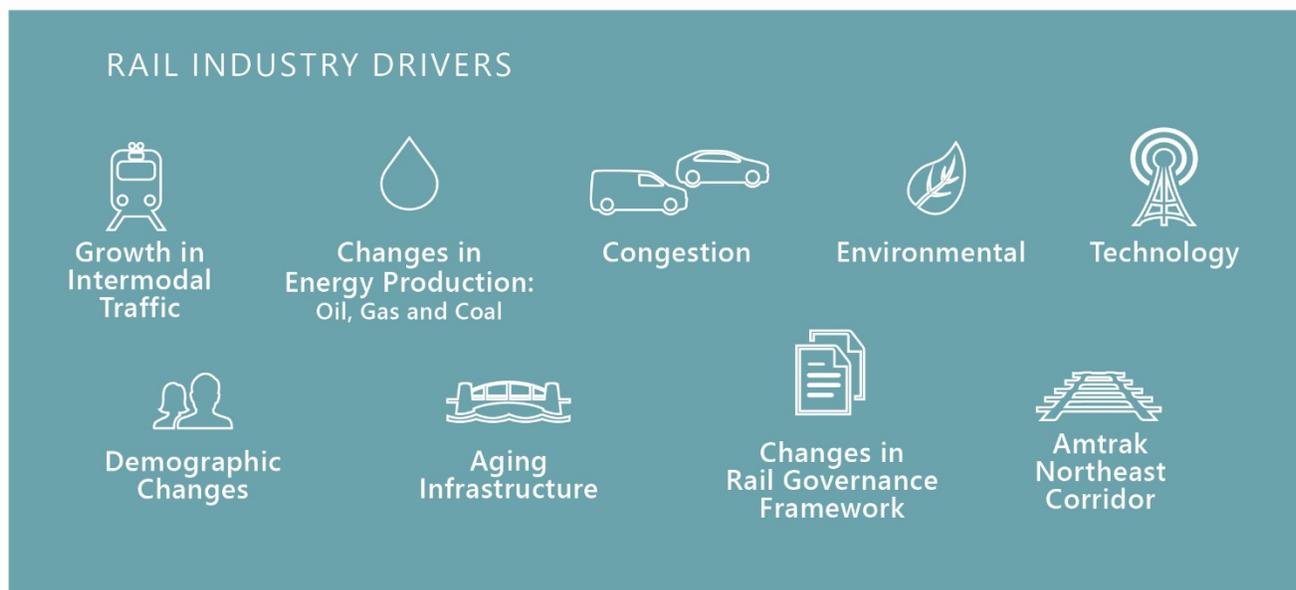
The State Rail Plan addresses changes in the rail industry and prioritizes Virginia’s investments in freight and passenger rail services and infrastructure across the Commonwealth. This State Rail Plan guides Virginia’s vision for railroad transportation to the horizon year of 2040, and lists strategies to achieve that vision. As described in **Chapter 2.1.3**, *Virginia’s rail network is a valuable asset that drives the*

economy, reduces congestion, improves safety, and saves taxpayer money. Continued investment in rail infrastructure will ensure the mission and vision for the Commonwealth's transportation network is achieved.

In that regard, Virginia's investment in rail infrastructure must respond to the dominant rail industry drivers. Virginia's passenger and freight rail networks are affected by many external factors that drive demand for services. Freight rail corridors serving the Port of Virginia and the main north-south freight routes are experiencing growth in intermodal traffic, while changes in domestic energy production and use are reflected in a projected decrease in coal traffic. Population growth, an aging population, and increasing highway congestion along the "urban crescent" between Washington and Hampton Roads is helping drive demand for environmentally friendly and safe alternatives to automobile travel.

The Commonwealth invests in the rail network as part of a multimodal approach to meet the growing demand for freight and passenger transportation service and support the economic changes and travel preferences of Virginians. **Figure 1-7** depicts the primary drivers behind the projected changes to freight and passenger rail transportation in Virginia.

**Figure 1-7: Rail Industry Drivers**



### 1.5.2.1 Growth in Intermodal Traffic

The Port of Virginia has been the most important driver of intermodal rail traffic in Virginia. This trend will continue in the future with the increase in intermodal shipping traffic expected as a result of the



expansion of the Panama Canal. The Panama Canal Authority expanded the Panama Canal with a larger, third set of locks in 2016. The canal capacity for container vessels, previously limited to 4,500 Twenty-foot Equivalent Units (TEU) ships, has increased to container vessels of 12,500 TEU capacity. This expansion project created an opportunity for the ports in the eastern and southern U.S. to capture additional ocean trade with Asian and West Coast of South American countries – traffic that, until now, has bypassed Atlantic ports and traveled instead to ports on the West Coast before traveling to or from the eastern and southern U.S. by rail or truck. Within the U.S., fluctuating oil prices and changing regulations governing truck transportation have helped increase the competitiveness of rail transportation for the long-haul movement of truck trailers and shipping containers.

The Class I railroads are increasingly focused on growing their intermodal container business and investing in new or expanded facilities to attract more types of traffic. Intermodal transportation may involve carrying a truck trailer on a flatcar (TOFC) or a shipping container stacked one or two high on a specialized container well railcar or other flatcar (COFC). Within Virginia, there are currently three rail-truck intermodal container transfer facilities. Two are located in the Hampton Roads area, and handle a combination of domestic cargo and international trade to and from the State's Ports. In an effort to increase the competitiveness of the Port of Virginia, the Commonwealth has provided funding for improvements to NS and CSX rail lines linking the Port with consumer markets in the Midwestern U.S. that will allow railroads to operate trains carrying shipping containers stacked two-high in railcars, providing higher capacity and cost efficiency. Another facility, the Virginia Inland Port (VIP) in Front Royal, serves as an extension of the maritime terminals of the Port of Virginia in the Hampton Roads area. Additional details on projected Port growth can be found in **Chapter 2.2.2**.

#### 1.5.2.2 Changes in Energy Production: Oil, Gas and Coal

The U.S. has seen tremendous growth in the domestic production of oil and gas through the application of hydraulic fracturing (fracking) and directional drilling within the last five years. Coal-fired electric power plants are becoming increasingly unable to compete with natural gas-fired plants. Retirements of coal-fired plants across the U.S. and in Virginia are increasing and accelerating. Virginia's Class I railroads have experienced a significant drop in domestic coal traffic, which has affected traffic volumes on routes such as CSX's Coal Corridor and NS's Heartland Corridor. Both rail lines also serve export coal piers in Newport News and Norfolk, and experience changes in rail traffic based on worldwide supply and demand. Additional details on projected commodity growth are in **Chapter 2.2.2**.

#### 1.5.2.3 Congestion

Virginia's highways are heavily used for both local and long-distance travel. Population growth and economic development have caused significant increases in traffic volume in Northern Virginia, Hampton Roads, and Richmond, as well as in other parts of the state. Increased traffic volumes, coupled



with limited additional capacity, have caused congestion to spread along the state’s major highway routes. The increased traffic on Virginia’s major highways has made trip times by highway vehicle unreliable.

In addition, airline travel continues to grow, placing a strain on airport facilities that have not expanded to accommodate additional travelers. As a result, airline passengers have experienced frequent delays, while airlines have responded to the lack of airport capacity by reducing flights and increasing fares, which limits transportation options and generates detrimental economic effects such as lost productivity for travelers and excessive fuel consumption.

By diverting more freight and passenger traffic from road to rail, Virginia’s railroad network relieves congestion, saves lives, improves air quality, and helps grow the economy, while reducing highway capital and maintenance expenditures. However, the types of traffic with the highest potential for shifting to rail from other modes, particularly rail passengers and commuters and intermodal freight, also have a high demand for on-time performance. Virginia’s railroads are poised to play an even greater role in meeting future freight and passenger transportation demand, but only if investments are made that will enable both freight and passenger rail to provide consistently reliable service.

Currently, bottlenecks exist throughout Virginia’s railroad network, which create network congestion and impact reliability. Rail bottlenecks exist in the Northern Virginia region, Crescent Corridor, East-West Corridor, Washington, D.C. to North Carolina Corridor, Richmond, Southside Corridor, and the North-South CSX lines and NS Heartland Corridor in the Tri-Cities region. Additional details on congestion in Virginia are in **Chapter 2.2.5** and **Chapter 2.2.6**.

#### 1.5.2.4 Environmental

The VTrans2040 Vision document identifies the need to make infrastructure in Virginia more environmentally sustainable and resilient. An increase in climate volatility could create potentially significant rail transportation investment needs. Rising sea levels, from which Virginia’s coastal areas are particularly at risk, will create increased flooding risk to the high concentration of rail infrastructure located in Hampton Roads and other low-lying coastal areas of the state. Potential severe heat and cold effects give rise to concerns about rail system maintenance and replacement costs for vulnerable rail infrastructure. For example, VTrans2040 lists bridge expansion defects, rail deformation, and tunnel flooding as effects on the rail system linked directly to an increase in climate volatility.

The VTrans2040 plan likewise lists reduction of transportation-related NO<sub>x</sub>, VOC, PM, and CO emissions as a goal to promote local economies, and patterns of transportation that minimize vehicle travel. Additional details on environmental benefits of rail are in **Chapter 2.1.7**.



#### 1.5.2.5 Demographic Changes

The VTrans2040 Vision document states that a majority of both younger and older citizens list affordable and convenient transportation alternatives to the car as at least somewhat important when deciding where to live. An aging population in rural areas of the state coupled with an increase in the population of young people in denser urban locales makes investments in transportation networks that provide alternatives to automobile travel a priority for the Commonwealth. In addition, widening economic inequality and increases in the cost of living in Northern Virginia as well as in other regions of the state necessitate a holistic view of transportation investments. Strong population growth in urban areas of the state means that Virginia's population is becoming more centralized, and more conducive to rail transportation as an attractive travel mode between congested urban areas. More details on trends in demographics are in **Chapter 2.2.1**.

#### 1.5.2.6 Aging Infrastructure

In 1995, the Association of American Railroads adopted a new industry standard freight railcar that increased the maximum gross weight on rail (the weight of both the freight car and its contents) from 263,000 lbs. to 286,000 lbs. Since then, railroads have been making upgrades to their track structure, substructure, and bridges to accommodate these heavier cars. Railcars with a larger loading capacity provide greater operating efficiency for rail carriers and cost-efficiency for freight rail shippers. The ability of railroad lines to handle these increased car weights is of great importance to railroads, in order to increase operational efficiencies, as well as to railroad customers, which benefit from lower transportation costs, and local communities where those rail customers provide a base of employment and revenue. Railcars have not only grown in weight, but in size as well, with the most common examples being the introduction of railcars handling shipping containers stacked two high and tall railcars containing three levels of new automobiles for efficient transportation from assembly plants to car dealers. As a result, improving the clearances of rail lines to accommodate higher railcars has become another key industry initiative. NS recently completed an extensive project on its Heartland Corridor to raise tunnel heights to accommodate double-stacked intermodal containers. CSX is currently rebuilding the Virginia Avenue Tunnel in Washington, D.C. to add capacity and clearance for double-stacked intermodal trains. Virginia's railroad infrastructure, particularly rail customer sidings and lightly used secondary or branch lines may require costly upgrades to accommodate taller and heavier railcars or to maintain a state of good repair. Shortlines, too, require major infrastructure renewal and upgrades to maintain competitiveness with other shipping modes, allow for efficient interchanging with Class I railroads, and attract new sources of traffic. Additional details regarding aging infrastructure constraints are in **Chapter 4.2** for Class I railroads and **Chapter 4.3** for shortline railroads.



#### 1.5.2.7 Changes in Rail Governance Framework

Recently there have been many changes at the state and federal level that affects the way Virginia manages its rail programs. The SEHSR program and PRIIA legislation created planning and project opportunities for improved passenger rail service and standards for cost allocation and service performance measurements for state-sponsored intercity passenger rail routes, respectively. In addition, PRIIA has opened up new questions about the role of states in the operation, maintenance, and promotion of passenger services they financially support. Virginia's legislative change allowing DRPT to purchase and own property has created opportunities to have the Commonwealth take a more involved position in long-term passenger rail planning and service delivery. Also significant is the ongoing coordination of the many multimodal transportation operations, both private and public, in Northern Virginia, that are needed to address transportation and mobility issues in that congested region of the state. Further details on the investment opportunities and potential long and short-term projects are in **Chapter 5**.

#### 1.5.2.8 Amtrak Northeast Corridor

A major driving factor in providing and expanding passenger rail service in Virginia is the connection to Amtrak's NEC. Amtrak's NEC has the most robust passenger rail services in the U.S., serving the most densely populated urban areas in the country with intercity and long-distance passenger trains operated by Amtrak as well as commuter trains operate by regional transit agencies. Virginia's intercity passenger trains continue north of Washington, D.C. on Amtrak's NEC to New York and Boston. Although Virginia's passenger service benefits from the one-seat-ride opportunities provided to major cities in the Northeast, its service is simultaneously impacted by infrastructure constraints and congestion from passenger and commuter trains on the NEC. Additional information on the NEC is in **Chapter 3.3.1**.

#### 1.5.2.9 Technology

The deployment of new technologies plays an important role in rail operations and safety. In recent years, Virginia railroads have focused on improving and installing new signals and Positive Train Control (PTC) systems to help improve operational efficiencies and safety. In particular, the effectiveness of PTC systems to automatically stop trains before certain accidents occur influenced the FRA to mandate the installation of PTC systems nationwide. Additionally, other technologies that allow for truck platooning and driverless trucks, may also impact rail market demand and customer expectations. Virginia and Virginia railroads must be prepared to deploy and take advantage of new technologies as they emerge.



### 1.5.3 Implementation of the Commonwealth's Vision

The State Rail Plan recognizes this vision and the drivers that facilitate the desired future outcomes through the establishment of goals and objectives, as outlined in **Chapter 2.1.3** and **Figure 2-7**. DRPT has considered various freight and passenger rail initiatives, and has studied the potential for optimizing the Commonwealth's freight rail network. Subsequently, DRPT has identified investments for the Commonwealth's rail infrastructure that will improve the capacity, efficiency, and safety of the Commonwealth's rail network, promote railroad access and economic development, and bolster connectivity with other transportation modes. The State Rail Plan outlines these investments and supporting demands for passenger and freight rail growth in each of the chapters:

**Chapter 1 – Role of Rail in Statewide Transportation.** Chapter one introduces you to the role and importance of rail in the Commonwealth's transportation network. From a farm-to-market transportation system to an evolving system supporting a thriving economy and the Port of Virginia, rail has helped Virginia grow and prosper.

**Chapter 2 – Virginia's Existing Rail System.** Chapter two provides an overview and inventory of Virginia's existing rail system and services, and identifies the economic, demographic, and transportation demand forecasts and trends that will affect future demand for passenger and freight rail service in the state.

**Chapter 3 – Proposed Passenger Rail Improvements and Investments.** This chapter introduces projects and initiatives that will help Virginia's passenger and commuter rail services to better serve the mobility needs of the state and region.

**Chapter 4 – Proposed Freight Rail Improvements and Investments.** The information in chapter four describes the recent improvements and investments that have been made and potential future investments by the state's freight railroads and the Commonwealth.

**Chapter 5 – Virginia's Rail Service and Investment Plan.** Chapter 5 prioritizes short and long range investments for the Commonwealth.

**Chapter 6 – Public Involvement and Coordination.** This chapter describes how the DRPT involved stakeholders in the coordination necessary to develop the rail plan.

