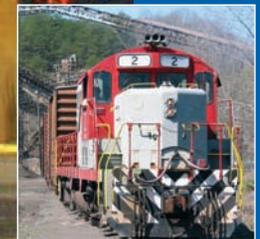
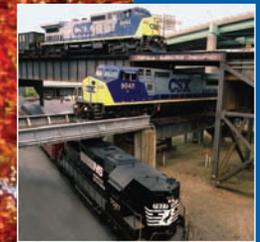


Statewide Rail Plan Commonwealth of Virginia Final Version

December 12, 2008



From the Director



Rail transportation has been integral to Virginia's growth and success for more than 170 years. Ensuring its continuing ability to support future needs requires the consideration of the past and present influences that affect railroads, passenger rail operators and other transportation modes, in addition to future trends and impacts related to population growth, the economy, natural resources and the environment. This comprehensive rail plan for the Commonwealth of Virginia analyzes the

current state of Virginia's rail system and recommends areas for improvement that will return the highest value to the Commonwealth.

The Virginia Department of Rail and Public Transportation (DRPT) is the leading state agency for rail, transit and congestion management. It issues a complete update to the Virginia Statewide Rail Plan every five years, with technical revisions in the interim years as necessary. The 2008 Statewide Rail Plan represents the status of the rail industry in Virginia as of December 2008, in order to provide a consistent outlook across budgeting and planning documents.

The 2008 plan builds upon past successes to enhance Virginia's multimodal transportation corridors. Key recent accomplishments include the establishment of the Rail Enhancement Fund as the first dedicated source of rail funding in state history, the investment of more than \$150 million in rail capacity

improvements in the I-95 and I-81 corridors, and major multistate initiatives such as the Heartland Corridor project that are designed to remove hundreds of thousands of trucks from Virginia's highways.

While these initiatives have helped to improve the rail transportation network and multimodal connections, the demand for transportation services continues to outpace state and national transportation resources. Virginia, like many other states, faces a number of key challenges, including population growth, highway congestion, passenger and freight rail capacity limits, the increase in demand for passenger and freight rail services and quality of life issues such as the increase in fuel prices and the decline in air quality.

The business of freight rail adds its own challenges. Rail tracks are privately owned by freight companies with a responsibility to return shareholder value. Passenger rail – which operates on a different financial service model – requires the use of these same tracks, creating competing and often contradictory demand for a limited resource.

The 2008 Statewide Rail Plan addresses all of these considerations by evaluating potential solutions from the international, national and state perspectives. International pressures include the competition among countries for vital resources such as fuel. Nationally, this issue is further complicated by the relationship between fuel costs and transportation funding. At the state level, while Virginia's enactment of the Rail Enhancement Fund puts it ahead of the curve nationally, the Commonwealth is just beginning to make the investments necessary to better integrate rail into the state's multimodal planning process.

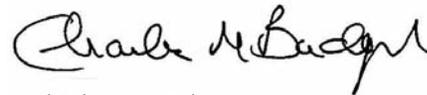
The impact of all of these issues was considered in developing the strategies outlined in Chapter 4 of the plan. Virginia's rail priorities are defined by key corridors through projects that will provide public benefits and position Virginia for future growth. Over a 15-year required period of performance, the proposed projects will deliver results by removing more than 5.1 million cars and trucks from Virginia highways, saving more than 300.7 million gallons of fuel and saving more than 681 million tons of carbon emissions while increasing the connectivity of our transportation system and providing better access to transportation for all Virginians. Specific applicable annual benefits are highlighted under each project.

The projects include: Class I railroad, shortline railroad and passenger rail initiatives. The freight rail portion of the plan represents approximately \$1.25 billion of the proposed program while the passenger rail improvements represent \$5.81 billion for a total of \$7.06 billion in rail investments. The potential funding and partnership opportunities for these projects are discussed in terms of railroad, state, local, federal and passenger rail sources. Strategic partnerships will be crucial to leveraging the Commonwealth's resources and maximizing state investments.

The 2008 Statewide Rail Plan was developed based on feedback received through public comments on the 2008 Shortline Improvement Program and the 2008 Statewide Rail Resource Allocation Plan.

The 2008 Statewide Rail Resource Allocation Plan builds on the projects identified in the 2008 Statewide Rail Plan by providing specific funding strategies and more detailed implementation plans for each project.

The Statewide Rail Plan serves as the Commonwealth's blueprint for advancing passenger and freight rail initiatives in Virginia. This plan, based on significant statewide multimodal corridors, provides the Commonwealth with a balanced modal approach to the movement of people and goods now and into the future.



Charles M. Badger
Director

Virginia Department of Rail and Public Transportation

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Chapter 1

Introduction and Purpose

As noted in the Virginia Transportation Performance Report (2006), transportation remains one of the most urgent problems facing Virginia today due to increasing costs for both new transportation improvements and maintenance of existing systems. Transportation needs continue to greatly outpace available funding.

The Virginia Department of Rail and Public Transportation (DRPT) is the state agency for rail, transit and congestion management in Virginia. DRPT has the flexibility to provide diverse transportation solutions to move more people and goods statewide by focusing on projects that deliver public benefits for the investment of public funds.

The Commonwealth has made great strides in incorporating forward-thinking planning and improvements to support the creation of a comprehensive, multimodal transportation corridor network. Specific examples of this thinking and the commitment to integrating passenger and freight

rails needs into Virginia's overall transportation network include:

- Establishment of the Rail Enhancement Fund in 2005 created the first dedicated source of funding for passenger and freight rail improvements.
- To move more freight from the Ports of Hampton Roads, the Commonwealth is participating in the Heartland Corridor Project to take more than 150,000 trucks off of the road on an annual basis.
- Virginia has allocated more than \$151.55 million in rail funds for the I-95 and I-81 corridors to relieve congestion; advance freight, commuter and intercity passenger rail; and advance higher-speed rail, including construction of a new bridge over Quantico Creek to eliminate a major congestion point in the Washington, DC to Richmond corridor.

- The Maersk APM Terminal, which opened in July 2007 was the first privately owned and operated port terminal developed in the United States. This project received state rail funding that supported the construction of an on-dock rail yard to support movement of goods on rail rather than on Virginia roads. The first double-stack intermodal train served the terminal in May 2008.

Rail transportation plays an important role in Virginia's evolving transportation network, reducing highway congestion and pollution by redirecting cargo from trucks to rail and diverting people from cars to passenger rail. DRPT, as the leading state agency for rail, periodically identifies and updates rail needs, priority corridors and capacity chokepoints across the state through the development of a Statewide Rail Plan. The 2008 Statewide Rail Plan is a five year update of the 2004 plan. This update addresses new challenges and opportunities for passenger and freight rail in Virginia.

This document represents a summary of the 2008 Statewide Rail Plan and corresponding technical documents, the Statewide Rail Resource Allocation Plan and the Shortline Improvement Program. During the drafting of this plan, DRPT sought public input, this document reflects citizen comment and vision. Moving forward, DRPT will produce comprehensive statewide plans on a five year basis with technical updates in the interim years as necessary to keep pace with emerging trends, priorities, costs and needs. This Statewide Rail Plan has been developed following guidelines set out by the Federal Railroad Administration for state plans in order to ensure that Virginia's rail plans are consistent with federal funding requirements.

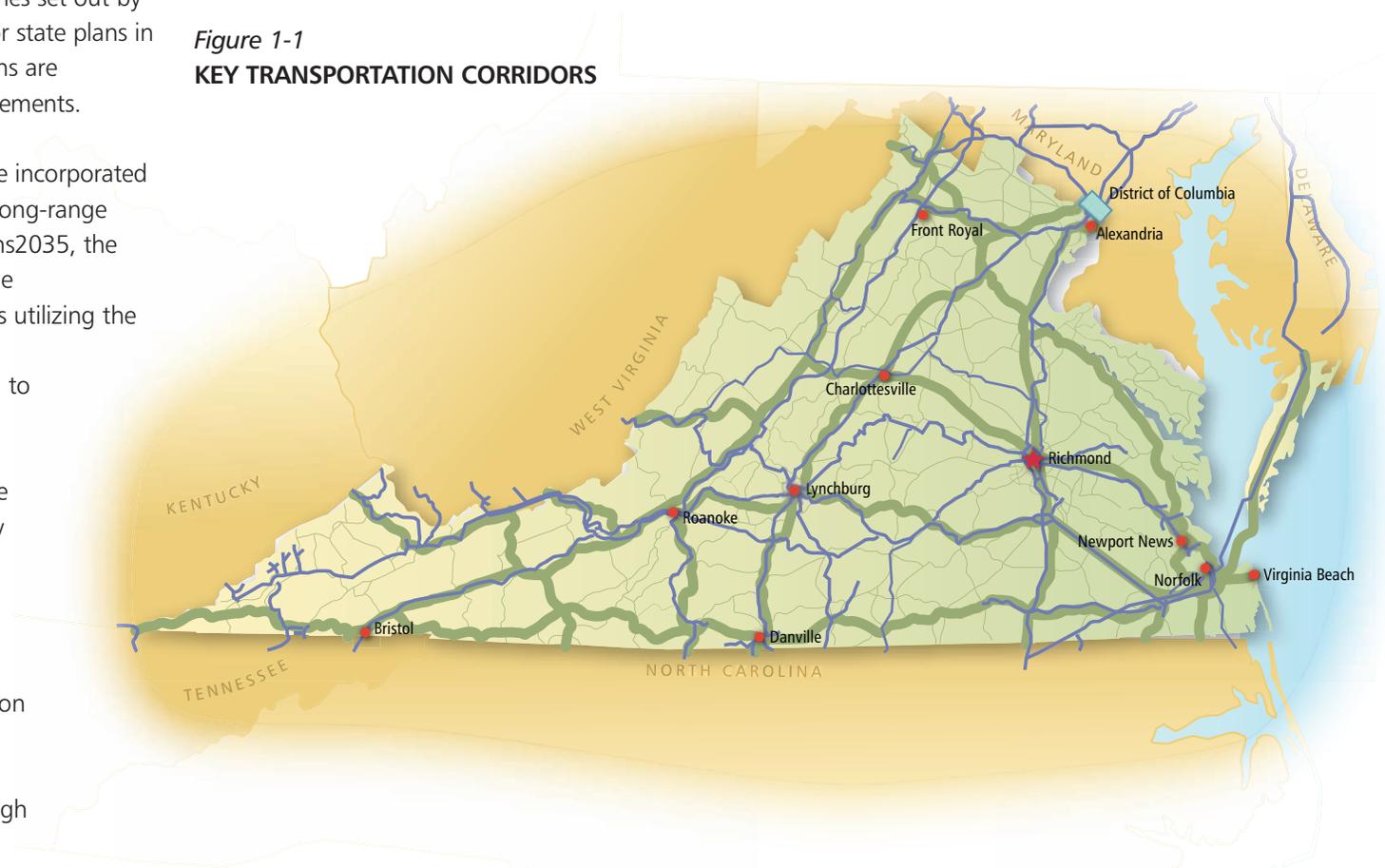
As one of the modal plans that will be incorporated into the Commonwealth's statewide long-range multimodal transportation plan, VTrans2035, the 2008 Statewide Rail Plan addresses the Commonwealth's transportation goals utilizing the state transportation planning process. Specifically, this document is intended to provide high-level information on existing rail conditions and programs in Virginia today and rail needs for the future, with a focus on identifying key corridors (see *Figure 1-1*) and potential investments.

Through the incorporation of the 2008 Statewide Rail Resource Allocation Plan, and the 2008 Shortline Improvement Program, developed concurrently, the Rail Plan identifies high

priority projects, and recommends funding allocations and provides an implementation plan for short term projects. The 2008 Shortline Improvement Program inventories existing conditions on the shortline railroads and identifies a long term improvement process that brings the railroads into a state of good repair. The Shortline Improvement Program also assesses additional projects that build upon the traditional maintenance schedules to improve railroad operations. The

Statewide Rail Resource Allocation Plan outlines a strategy for the allocation of resources between passenger and freight rail projects statewide, with a focus on identifying specific projects for funding and implementation over the next six years. Projects are narrowly defined, with anticipated funding sources for both public and private sector investment. Projects were developed based on the needs and priorities identified in the draft Statewide Rail Plan, and the selection of projects for implementation in

Figure 1-1
KEY TRANSPORTATION CORRIDORS





Freight rail transportation helps people save on the cost of goods by conserving fuel and providing more cost-effective shipping choices for many consumer products.

the next six years will be based upon the achievement of state transportation goals and the determination of public benefits to be achieved through each project.

Ultimately, rail transportation in Virginia will provide more transportation choices for people and goods, congestion relief for the state's highway system, energy savings through reduced fuel consumption and better air quality through reduced emissions.

The rail system is vital for the Commonwealth's economy, connecting Virginia to the global

marketplace both overseas through connections at the Ports of Hampton Roads and in North America through rail connections that extend to the nation's East and West Coasts, north to Canada and south to Mexico.

The Commonwealth is committed to enhancing partnerships with the private sector, including railroads, local governments and regional planning organizations, to attract private capital and to achieve its strategic goals.

The 2008 Statewide Rail Plan has been developed in

coordination with other Commonwealth transportation agencies, including the State Office of Intermodal Planning and Investment, the Virginia Department of Transportation (VDOT), the Virginia Port Authority (VPA) and the Virginia Department of Aviation (DOAV). Input or information was also received from major rail stakeholders including the Federal Railroad Administration (FRA), the Virginia Economic Development Partnership (VEDP), Norfolk Southern (NS), CSX Transportation (CSX), Amtrak, Virginia Railway Express (VRE), Regional Metropolitan Planning Organizations (MPOs), Regional Planning District Commissions (PDCs), Virginia's ten shortline railroads, the U.S. military (U.S. Army Surface Deployment Command) and other organizations. Public input has been included through a comprehensive public involvement program. State resource agencies including the Department of Environmental Quality (DEQ), the Department of Historic Resources (DHR), and the Department of Conservation and Recreation (DCR), also provided input.

Transportation Goals

The Statewide Rail Plan has been developed using the Commonwealth's Transportation Goals, DRPT Strategic Plan Goals and Transportation Goals for Rail.

COMMONWEALTH TRANSPORTATION GOALS

- Safety and Security
- Preservation and Management
- Mobility, Accessibility and Connectivity
- Economic Vitality
- Land Use and Quality of Life

DRPT STRATEGIC PLAN GOALS

- Assist in managing the growth in congestion on Virginia's highways.
- Improve access for the general public and business to alternative transportation (public transportation, carpools, vanpools, human service transportation, passenger rail and freight rail) and telecommuting.
- Provide access and improvements to Virginia's railroads to encourage economic development and reduce truck traffic on Virginia's highways.
- Seek the highest possible return on investment to maximize limited funding.
- Increase communication to the general public, businesses and community decision-makers on alternative transportation choices and telecommuting.
- Implement best practice management tools and techniques to improve customer service and accountability.



Virginia Railway Express provides commuter rail service in the Northern Virginia region.

TRANSPORTATION GOALS FOR RAIL

In accordance with the Governor's Transportation Accountability Commission guidelines, the implementation of this rail plan will be conducted with the following goals:

- Safety and Security:** Rail improvements will be developed to provide a safe and secure transportation system – particularly as high speed rail services are brought online. The railroads in Virginia have strong safety records. However, constant diligence, education in rail safety and security, and improvements at highway-rail grade crossings will continue the Commonwealth's past history of annual reductions in rail-related injuries and fatalities. Metrics include:
 - Number and rate of fatalities (grade crossings and trespassers)
 - Number and rate of injuries (grade crossings and trespassers)
 - Increase in the number of grade separation structures
 - Increase in the number of at-grade crossings closed
- Preservation and Management:** DRPT will work with Virginia's private railroad companies to preserve and manage the existing rail transportation system through technological improvements and more efficient operations. Metrics include:
 - Improve on-time performance for both freight and passenger rail trains
 - Percentage of Virginia's shortline rail system in need of repair
 - Percentage of passenger trainsets that exceed replacement age
 - Farebox revenues of passenger rail operators
- Mobility, Accessibility and Connectivity:** DRPT, through public-private partnerships with the rail industry, will develop projects that facilitate the efficient movement of people and goods and improve interconnectivity of all transportation modes. Metrics include:
 - Increase passenger rail ridership
 - Increase diversion of freight from trucks to
 - Expand rail services to developed markets
- Economic Vitality:** DRPT will develop projects that improve Virginia's economic vitality and facilitate the coordination of rail transportation, land use and economic development planning activities. Metrics include:
 - Use of Rail Industrial Access and Rail Enhancement Funds to retain existing businesses and attract new businesses (number of jobs created, number of jobs maintained and economic impact of projects)
- Land Use and Quality of Life:** Diverting more of trucks to freight rail increasing travel by passenger rail will provide significant environmental benefits with improvements in air and water quality, as well as decreased energy consumption. Metrics include:
 - Tons of transportation-related emissions saved by rail improvements
 - Number of trucks diverted from highways to freight rail
 - Fuel saved by diverting trucks to freight rail and increasing passenger rail travel

Chapter 2

Planning Context and Considerations

Successful planning must take into consideration past accomplishments, current conditions and anticipated trends. For the Virginia Statewide Rail Plan, several demographic and societal trends impacting the rail system are noteworthy:

- By 2030, the population of the United States is expected to grow by 5 percent. In that same period, Virginia's population is expected to increase 30 percent, from the current 7.5 million to 9.8 million.
- Much of that growth will take place in Virginia's major metropolitan areas, which are growing faster than the rest of the state. Two of every three Virginians now live in Northern Virginia, Richmond or the Hampton Roads metropolitan areas.
- Virginia's transportation system, responsible for moving people and goods into, out of, within and through the state via roadways, air, water and rail, is over-crowded. Its major transportation corridors, which are already experiencing congestion-related travel delays will see even more demand. This could jeopardize the Commonwealth's ability to maintain a business environment that has earned it the title of best state in the country for business.
- The Port of Virginia's growth in containerized cargo is expected to increase by 350 percent between 2005 and 2035. By 2011 it will be at full capacity.
- Cargo shipments in the nation are expected to double from 15 billion tons in 2005 to approximately 30 billion tons in 2035. Although this prediction shows that the vast majority of freight is being handled by trucks, highway congestion and the increasing cost of fuel make an increase in the percentage of cargo carried by rail a necessity. Virginia's most recent statewide long-range multimodal plan (VTrans2025) recommends moving more cargo by alternatives other than trucks.
- There is global competition for finite resources of oil and coal, causing the price of a barrel of oil to nearly double in the last year alone. The pressure is on to find ways to become more energy efficient and reduce greenhouse gases.
- Railroads are typically three or more times more fuel efficient than trucks. Every ton-mile of freight that moves by rail rather than by truck reduces greenhouse emission by 67 percent or more.
- After a period of relatively low coal exports, increased global demand for coal has caused a rapid growth in coal exports. In the first quarter of 2008, for example, there was a 62 percent increase over the same period in 2007. Coal is the largest freight commodity in Virginia, comprising 59 percent of tonnage. All coal from the Appalachian coalfields to the Ports of Hampton Roads is carried by trains (none by long haul trucks).
- Various DRPT and Commonwealth transportation corridor studies have identified the need for improved and increased passenger rail services in

Virginia (both by Virginia Railway Express and by Amtrak) to meet the increasing demands that population growth will put on the transportation infrastructure of Virginia's metropolitan areas.

- Capacity is a significant concern for both passenger and freight rail. The U.S. Department of Transportation is predicting that freight railroad demand will increase by 88 percent between 2002 and 2035. In Virginia, VRE ridership is expected to double in the next 20 years.

These trends have been factored into the development of the 2008 Statewide Rail Plan. They are described in more detail in this chapter.

Past Accomplishments

In the past six years, Virginia has worked to incorporate rail planning and improvements into an integrated multimodal transportation corridor network. Significant legislative accomplishments include the creation of the Rail Enhancement Fund (REF) in 2005 and the addition of general funds added to the REF program to address critical needs in Virginia's I-95 and I-81 transportation corridors.

Virginia is a leading state in the implementation of rail improvements to support businesses and shortline railroads viability. Investments to alleviate freight congestion, increase on-dock rail movements from the Ports of Hampton Roads and advance higher-speed rail in the Commonwealth top

the list of rail priorities. To make headway in these crucial areas, the Commonwealth has completed or is in the process of completing the following initiatives:

- Developed the first dedicated source of funding for passenger and freight rail improvements in Virginia's history. Initiated in 2005, the REF supports improvements for passenger and freight rail transportation that deliver public benefits through public private partnerships, such as:
 - Improving the movement of freight from the Ports of Hampton Roads through a public private effort involving Norfolk Southern and several states to construct a double-stack container train corridor between the Ports of Hampton Roads and Columbus, OH. In Virginia, the project includes raising tunnels to accommodate the taller trains and constructing a new intermodal facility in the Roanoke region
 - Improving the movement of double-stack freight to/from the Ports of Hampton Roads through public private partnership efforts with CSX to remove vertical obstructions on the CSX National Gateway system, which extends from Atlanta, GA to the Northeast along the I-95 corridor
 - Doubling the on-dock rail yard to transfer more containers to/from rail at the new Maersk APM Terminal marine facility at the Ports of Hampton Roads, a project utilizing shared public private funding
 - Eliminating 14 at-grade railroad crossings by relocating approximately 4.5 miles of an existing rail line owned by the

Commonwealth Railway shortline from urban neighborhoods in Portsmouth and Chesapeake to the rail-ready highway medians of Route 164 and I-664. This corridor will be used to serve both the planned VPA Craney Island Marine Terminal and the recently completed Maersk APM Terminal.

- Strengthened the shortline railroad industry in Virginia through the Rail Preservation Fund. Major projects recently completed include improvements on portions of the Buckingham Branch railroad that handles Amtrak intercity passenger trains and improvements on the Commonwealth Railway to provide Norfolk Southern and CSX with competitive rail access to the new Maersk APM Terminal and the future Craney Island Marine Terminal.
- Supported the Commonwealth's economic development through the Industrial Railroad Access Track Fund since 1986, providing rail access to businesses in Virginia and supporting the creation of approximately 25,000 new jobs and approximately 181,000 railcar shipments — taking 634,000 trucks per year off the road.
- Provided essential rail congestion relief, including construction of the new railroad bridge over Quantico Creek on I-95 to remove the last single-track section of the Washington, D.C. to Richmond corridor.

Population and Growth Trends

Transportation, including passenger and freight rail, is driven by a number of key factors. The primary factors are population density and growth trends for the future. The U.S. population, currently approximately 300 million, is expected to grow by 21 percent to 378 million by 2035. For Virginia, the projections are even greater. According to the Virginia Employment Commission, between 2007 and 2030, Virginia's current population of 7.5 million will increase to approximately 9.8 million – a 30 percent increase (*Figure 2-1*). The Commonwealth's population growth rate far exceeds the 5 percent rate of the U.S. as a whole.

Most of the growth is generated by people relocating to the Commonwealth to take advantage of Virginia's economic opportunities in urban areas. As a result, Virginia's major metropolitan areas are growing faster than the rest of the state. Two out of every three Virginians now live in Northern Virginia, Richmond or the Hampton Roads metropolitan areas. And one in three Virginians lives in the Northern Virginia area. For the rest of the state, 70 percent of all localities have gained population while only 20 percent have lost population.

Economic Development and Freight Rail Shipping

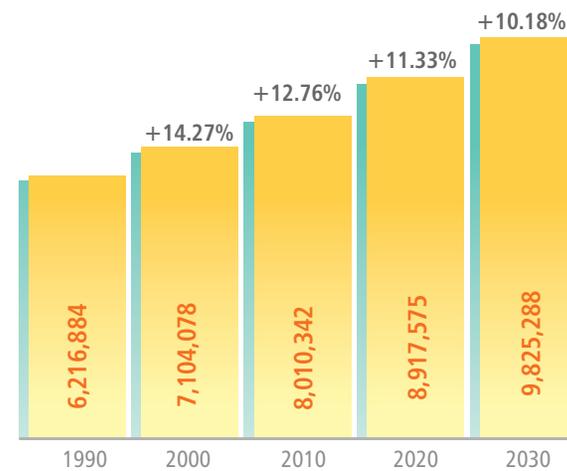
Nearly 11,000 high-tech companies and 30 Fortune 1,000 firms are located in the state, contributing to Virginia's economy. Freight rail transportation improvements provide direct economic benefits by reducing the costs of transportation; expanding the

accessibility of businesses to suppliers, labor and consumer markets; and attracting new entrepreneurial opportunities to a community or region. An efficient transportation network with rail access to major shipping and travel destinations in Virginia and nationwide is a powerful combination for potential economic development. The Virginia Port Authority estimates that over 60 million square feet of additional distribution center space will be needed over the next 25 years to keep pace with containerized exports and imports in Virginia. The Commonwealth's rail and highway transportation system allows companies to locate at distribution centers throughout the state – often in rural areas where land costs are less expensive and an available workforce is nearby.

The business climate is influenced by a number of factors, including the cost of labor, transportation and energy; tax and regulatory burdens placed on businesses; and quality of life. Centrally located on the U.S. East Coast, Virginia's integrated transportation system of highways, railroads, airports and seaports ensures that businesses can reach all global markets and get shipments from suppliers more efficiently. Highlights of Virginia's freight transportation system include:

- Twelve freight railroads operate on more than 3,300 miles of railway in Virginia, of which more than 2,800 miles are Class I railroads (the largest railroads in the U.S.). Two of the nation's largest railroads operate in Virginia: CSX Corporation and Norfolk Southern Corporation, which is headquartered in Norfolk.
- Fourteen commercial airports serve Virginia, including two of the nation's busiest: Washington Dulles International and Ronald Reagan Washington National.
- The Port of Virginia offers world-class shipping facilities and a schedule of approximately 3,000 sailings annually to over 250 ports in 100 foreign countries. The Port, offering one of the largest multimodal networks on the East Coast, handled 2.12 million 20-foot equivalent units (TEUs) in 2007 and moved more than 28 percent of its total business by rail. The new Maersk APM Terminal, the first private terminal in the U.S., at Portsmouth opened in 2007 and will be a major container terminal on the East Coast.

Figure 2-1
POPULATION CHANGE PROJECTIONS FOR VIRGINIA



Source: Virginia Employment Commission

- The Virginia Inland Port in Front Royal serves as a regional intermodal facility and acts as a collection point for containers from West Virginia, Ohio, Pennsylvania, Northern Virginia and elsewhere (*Figure 2-2*).
- The Port of Richmond is a multimodal freight handling and distribution center located on the James River adjacent to I-95, offering service to northern Europe, the United Kingdom, Iceland, the Mediterranean, Canada, South America, Mexico and the Caribbean.

Figure 2-2

ECONOMIC DEVELOPMENT NEAR THE VIRGINIA INLAND PORT



Source: Virginia Port Authority

- Virginia’s highway system features more than 70,000 miles of interstate, primary and secondary roads, including eight major interstate routes: I-95, I-85, I-81, I-77, I-66, I-64, I-495 and I-395.

Virginia offers six foreign trade zones designed to encourage businesses to participate in international trade by effectively eliminating or reducing customs duties. Numerous subzones are also provided and additional zones can be designated to enhance the trade capabilities of specific companies.

Virginia’s economic future depends on its ability to attract jobs, people and businesses. The state must compete to draw top companies, grow the job market and offer an exceptional quality of life that makes people want to call Virginia home. That is why the Commonwealth has identified strategies across all transportation modes to ensure people and goods can move freely throughout the state and continue to feed the economy.

Transportation System Considerations

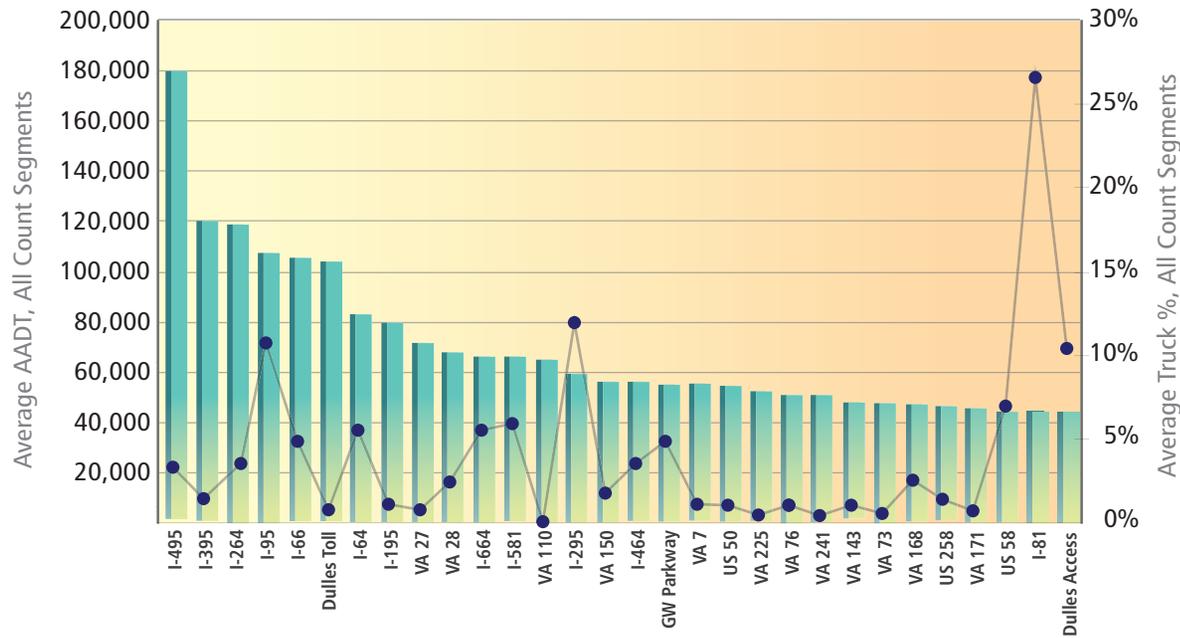
Virginia’s freight and passenger rail networks are part of a statewide transportation system that moves people and goods into, out of, within and through the state via highways, water, air and rail. Planning for rail is a key component of this multimodal system.

Highways. Virginia’s major highway corridors are heavily used by passengers and freight, both for local and long distance travel. *Figure 2-3* shows the average annual daily trips and percentage of truck traffic on Virginia’s major routes. The single occupant vehicle is the predominant mode of choice

for daily commuting (76 percent), followed by carpool (13 percent), public transportation (four percent, including bus and rail) and other (seven percent). This leaves the Northern Virginia, Richmond and Hampton Roads regions struggling with traffic congestion that creates headaches for commuters and negatively impacts the delivery of goods and services. The vast majority of freight (74.2 percent) is moved by truck, followed by rail (19.9 percent), with air and water cargo making up the rest.

- I-95, the major north-south interstate serving the East Coast, runs through Virginia from Washington, D.C. to the North Carolina border. Today the highway is significantly congested in the segment between Washington, DC and the Richmond area.
- The I-81 corridor, in the western half of the state, runs through the mountains from West Virginia, south to Tennessee. Regularly listed as one of the eight top trucking routes in the U.S., I-81 carries tourists, through-travelers, a growing number of commuters and more than a third of all college and university students in Virginia. The entire corridor will be experiencing significant increases in congestion over the next 20 years.
- I-64 traverses the state from east to west, linking Hampton Roads to the western part of the state and to West Virginia. It is significantly congested today in the segment between Richmond and Hampton Roads.
- Route 460 parallels I-64 and serves more local communities. However, to avoid the congestion

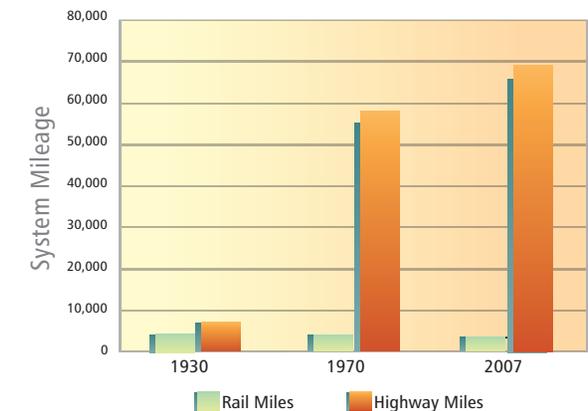
Figure 2-3
AVERAGE TOTAL AADT AND TRUCK PERCENTAGES ALL COUNT SEGMENTS —
TOP 30 ROUTES (2005)



Since 2007, the cost of a gallon of airline fuel has increased by approximately 73 percent. In the last two years, 10 airlines have filed for bankruptcy and seven have gone out of business.

Given these issues airlines are reducing the frequency of service, increasing travel times and increasing fares; in some instances air service in certain markets may be eliminated. Enhanced passenger rail service for short- to medium-distance trips of 100 to 500 miles may prove more advantageous than air travel forwarding the future. Amtrak's intercity services — particularly in large markets for trips between major destinations such as Los Angeles to San Diego, Washington, DC to Philadelphia and New York to Philadelphia — already enjoy an air-rail market share greater than 90 percent. Selected corridors within the Commonwealth may prove to be viable markets for

Figure 2-4
VIRGINIA HIGHWAY AND RAIL MILES



on I-64, more vehicles are using Route 460, especially to access areas south of Richmond.

- The I-66 corridor runs from Northern Virginia west to I-81, allowing access to suburban and rural areas west of Washington, DC. Most of this corridor is significantly congested.

Figure 2-4 shows the significant increase in highway miles in Virginia over 77 years while rail miles have actually decreased in that same period.

Aviation. The aviation industry as it relates to passenger travel in the United States is struggling, and fundamental changes are underway that will impact future travel in all modes. In addition to the negative impact of September 11, 2001, competition and significantly rising fuel costs are forcing airlines to look for new revenue sources (adding baggage handling charges, for example) in order to keep up with costs. Historically, fuel represented approximately 25 percent of the airline industry costs; today it represents 30-50 percent.

air-to-rail diversions, assuming investments are made to improve travel time and reliability. *Figure 2-5* shows some of the aviation routes, along with their travel time and cost, versus the same trip via Amtrak passenger rail service. Other than some selected cities, there are few direct flights, so airline travelers must first fly to a hub airport in another state and then return to Virginia by connecting flight.

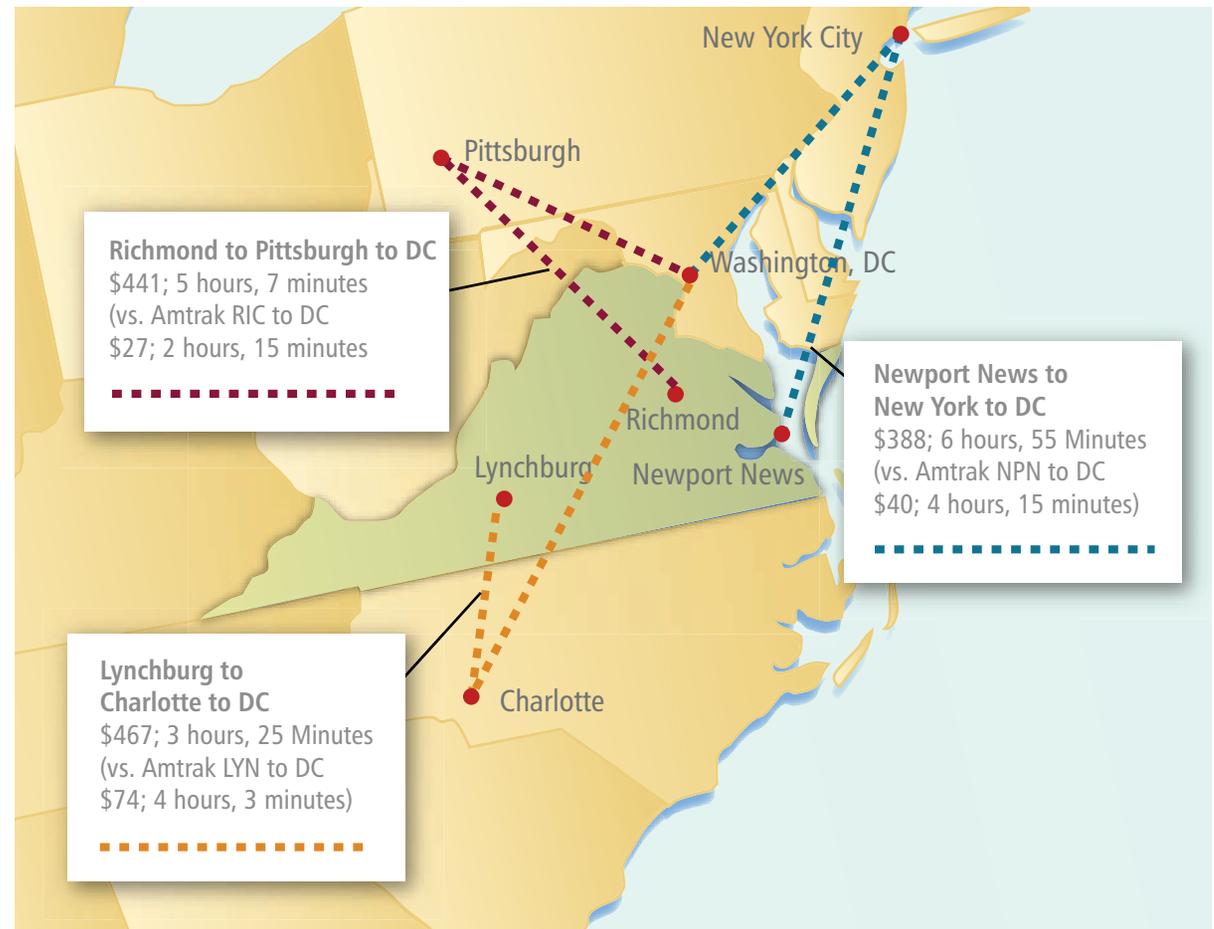
Ports. The Port of Virginia is the second largest port on the East Coast. The Port has three general cargo marine terminals: Norfolk International Terminals, Portsmouth Marine Terminal and Newport News Marine Terminal. In 2007, the Port handled 2.1



Freight rail helps connect domestic and international goods shipped to and from the Port of Virginia to markets nationwide.

Figure 2-5

SAMPLE TIME AND COSTS FOR AIRLINE TRIPS TO WASHINGTON, DC AND RICHMOND FROM SELECTED VIRGINIA CITIES (JUNE 2008)



million (five percent) of the nation’s 45 million 20-foot equivalent units (TEUs), the standard measure of container terminal capacity.

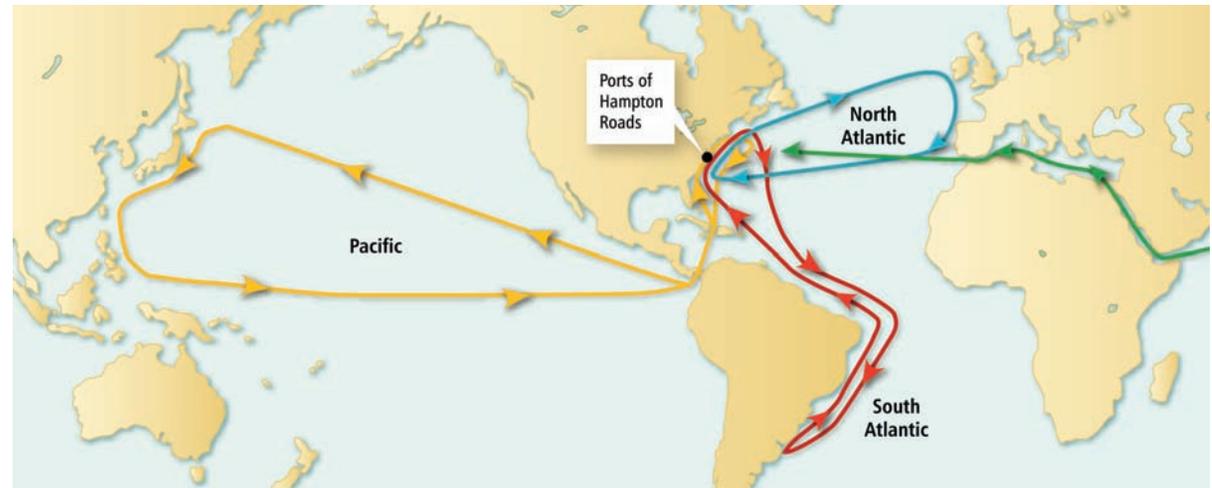
Since its introduction in 1956, loading cargo into

standardized boxes – known as containerized cargo – has revolutionized global shipping and economic development by reducing the cost of transportation between countries. The evolution of transporting containerized cargo with larger and larger specialty

ships has brought economies of scale and the ability of “just-in-time” shipment of goods to companies in the U.S. and around the world.

The new generation of container ships can carry 8,000 to 10,000 TEUs per vessel but are so large that they can only be accommodated by port facilities with deepwater (50-55 foot deep channels) and large specialized container cranes to rapidly load and unload the vessels. Virginia is fortunate with its easy access to the Atlantic sea lanes, deepwater channels and world class terminals at Norfolk International Terminals operated by the Virginia Port Authority and the recently opened private Maersk APM Terminal in Hampton Roads. Global trade routes for the Ports of Hampton Roads are shown in *Figure 2-6*.

Figure 2-6
GLOBAL SHIPPING ROUTES WITH THE PORTS OF HAMPTON ROADS

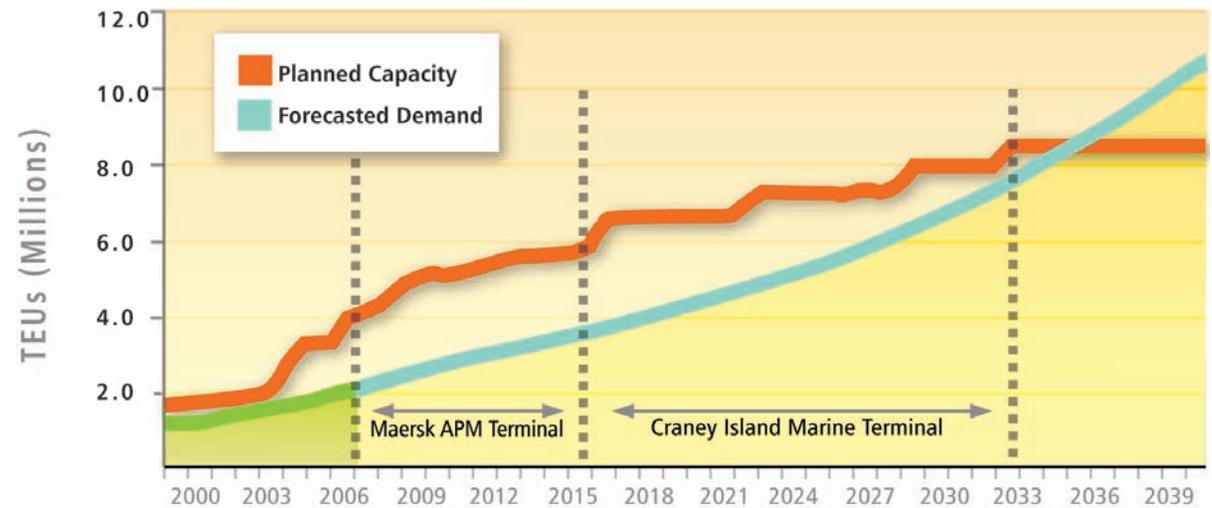


Source: Virginia Port Authority

According to the Virginia Port Authority, TEU growth in containerized cargo is expected to increase by 350 percent between 2005 and 2035 (*Figure 2-7*). During the last 10 years (1998-2007), the total volume of container traffic through the Port of Virginia marine terminals has increased at an average annual rate of 5.74 percent. With the scheduled opening of the Heartland Corridor in early 2010, the recent clearance of the CSX double-stack (standardized cargo container boxes stacked two high on rail cars) rail route to Atlanta, GA and the planned addition of a third series of locks in the Panama Canal by 2015, growth is expected to continue.

The use of rail is a significant part of the Port of Virginia’s plan to enhance the efficiency and cost

Figure 2-7
INCREASE OF CONTAINERIZED CARGO (TEUS) AT VIRGINIA PORTS



Source: Virginia Port Authority



Containers at the Port of Virginia are sorted and classified for shipment.

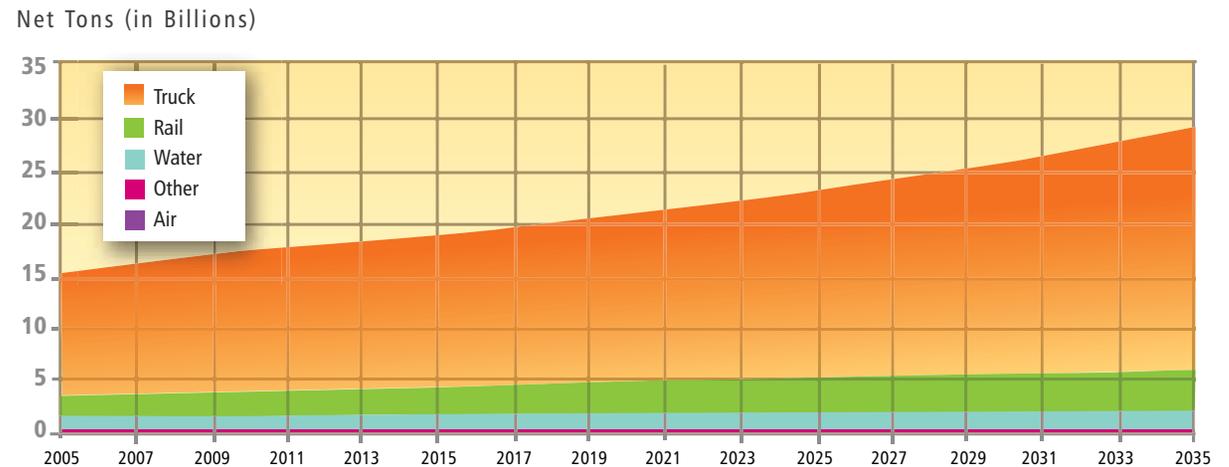
effectiveness of shipping. In fact, the Port already moves a higher percentage of containers by rail than any other East Coast port. Rail volume in 2007 increased 20 percent and remains the fastest growing sector of the Port's growth.

Freight

Freight transportation has grown dramatically, fueled by the growth and spread of population and economic activity within the U.S. and the increasing interdependence of economies across the globe brought about by foreign trade. A significant impact on transportation patterns and economic development has been brought about by the global use of containerized cargo for the shipment of goods by trucks, rail and large specialty container

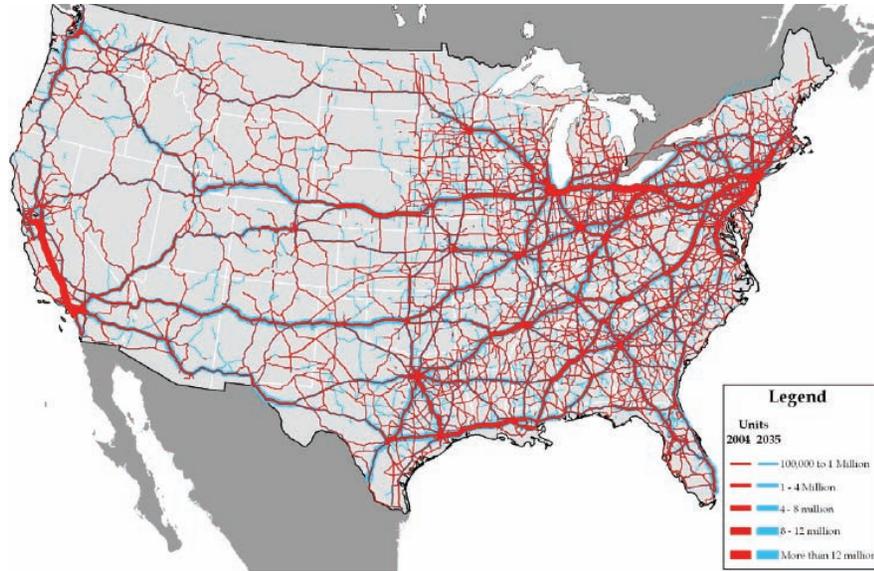
ships calling at major ports. *Figure 2-8* shows the projected growth in cargo by transport modes. Cargo in the nation is expected to double from 15 billion tons in 2005 to approximately 30 billion tons in 2035. Although the prediction shows the vast majority of freight being handled by trucks, highway congestion and the increasing cost of fuel make an increase in the percentage of modal shift between trucks and rail a necessity. *Figure 2-9* indicates the projected growth patterns in truck flows between 2005 and 2035 and *Figure 2-10* indicates the projected growth patterns in rail flows in the same period. As seen in *Figure 2-9*, the I-95, I-81 and I-64 highways between Richmond and Hampton Roads will carry an increasing number of trucks in future years.

Figure 2-8
U.S. FREIGHT TONNAGE BY MODE 2005 – 2035



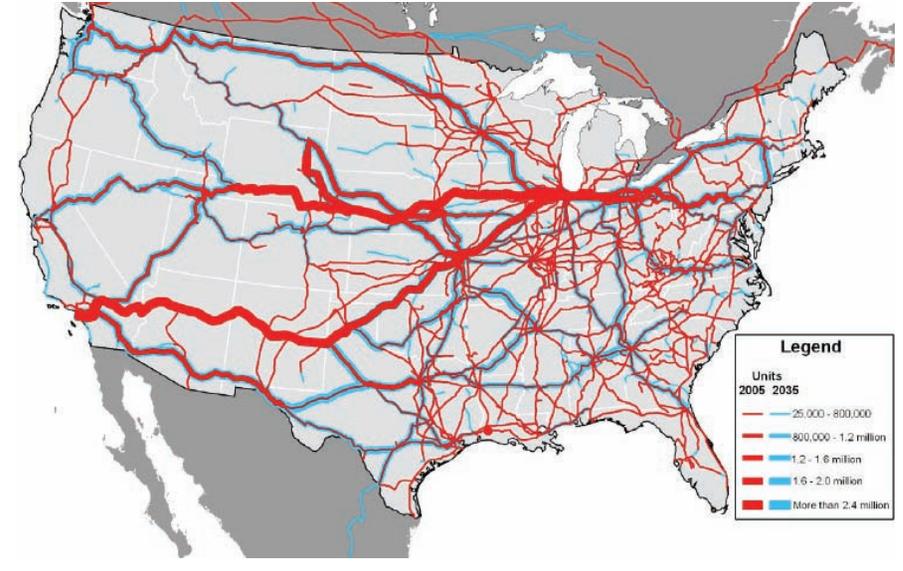
Source: Cambridge Systematics

Figure 2-9
U.S. TRUCK FREIGHT FLOWS 2005 – 2035



Source: Cambridge Systematics

Figure 2-10
U.S. RAIL FREIGHT FLOWS 2005 – 2035



Source: Cambridge Systematics



Intermodal trains have specially designed railcars that enable containers to be loaded directly from ship to rail.

Figure 2-11
RAIL CURRENT VOLUMES COMPARED TO CURRENT CAPACITY

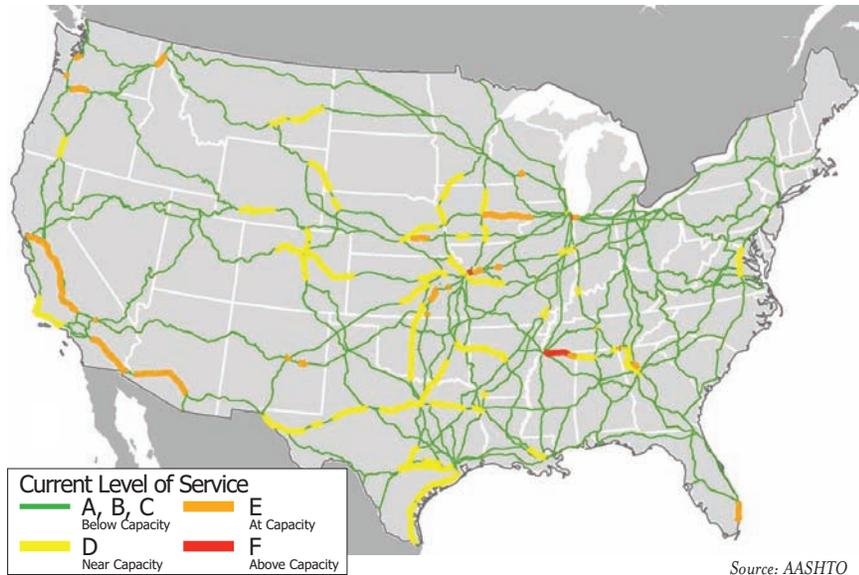
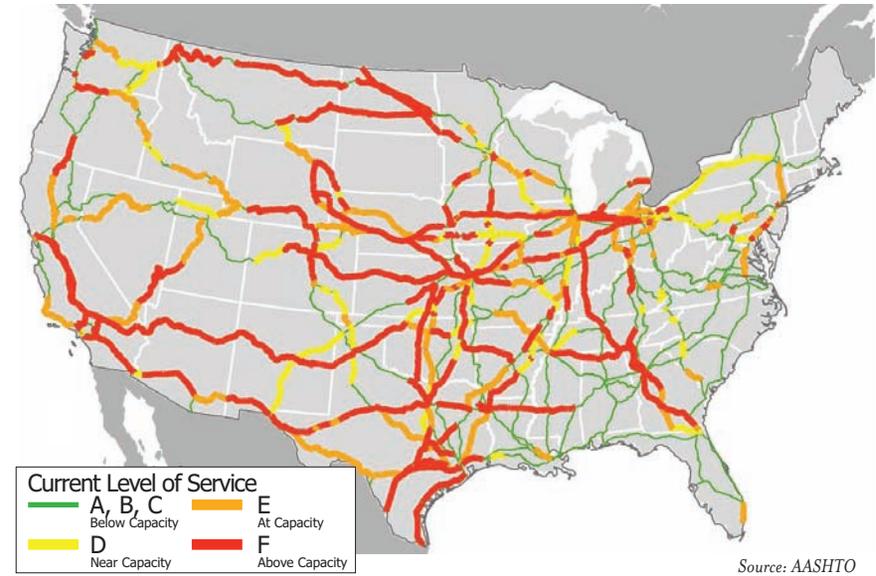


Figure 2-12
RAIL FUTURE VOLUMES IN 2035 COMPARED TO UNIMPROVED CAPACITY



Figures 2-11 and 2-12 show the current and projected 2035 rail volumes compared to current rail capacity. Note that the Statewide Multimodal Freight Study indicates that the I-95 corridor is expected to be significantly impacted. Therefore, the CSX National Gateway project incorporated in the statewide rail plan projects a greater modal shift from highway to rail, reflecting the goals of this rail plan.

According to this study, the movement of freight – raw materials, intermediate products and finished goods – currently supports over \$350 billion of Virginia’s Gross State Product annually. To accommodate the movement of freight, Virginia hosts one of the nation’s leading seaports, two

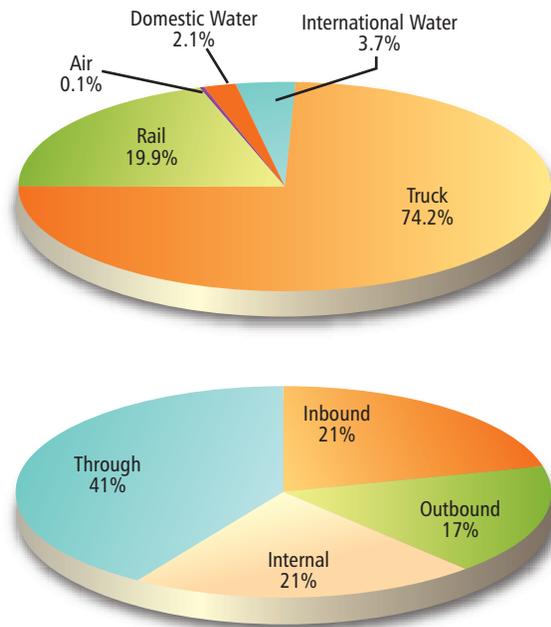
national freight railroads, numerous local and regional railroads, four major cargo airports and some of the nation’s most heavily used truck corridors.

Over the next two decades, the forecast is for significant growth in the demand for freight movement into, out of, within and through Virginia. Some of the Commonwealth’s freight infrastructure is well positioned to accommodate this growth, but much of its infrastructure will be challenged – from normal wear and tear; from growth in the amount, type and location of freight movement; from increased passenger traffic over shared highway and rail corridors; and from environmental pressures associated with higher freight volumes and/or

denser development patterns in and around major freight facilities and corridors. Almost 80 percent of Virginia’s freight tonnage has an origin or a destination in another state – including 40 percent which is simply passing through Virginia on its way to and from other states – so growth and freight improvements in other states, or the lack thereof, could significantly affect conditions in Virginia.

Today, approximately 50 percent of Virginia’s total output, 28 percent of its Gross State Product and 34 percent of its employment are from freight-related industries that depend heavily on the movement of raw materials, intermediate goods and/or finished products. The movement of existing freight tonnage

Figure 2-13
VIRGINIA FREIGHT TONNAGE BY
MODE AND DIRECTION



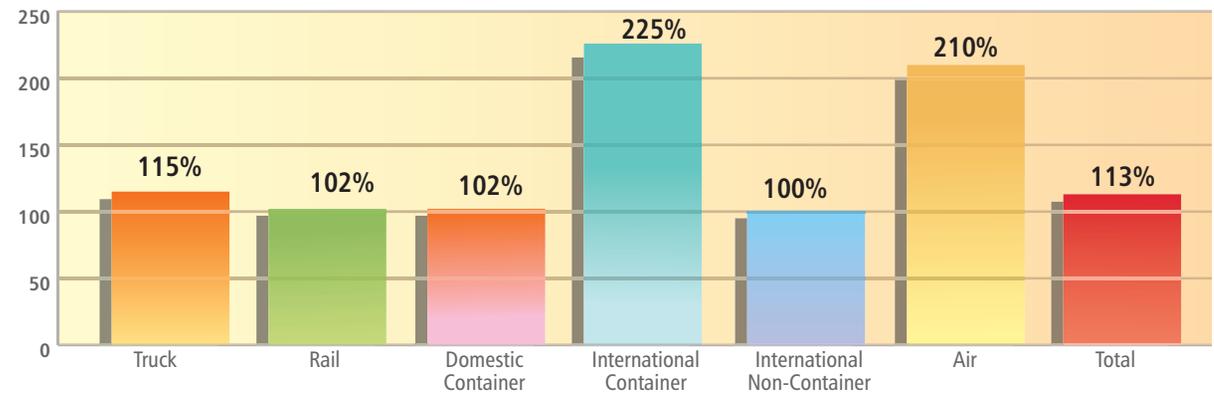
Source: Cambridge Systematics

by mode and direction is shown in *Figure 2-13*. A projection of the increase in tonnage associated with each mode to 2035 is shown in *Figure 2-14*.

Coal

Rail is the major mode of transportation for the movement of coal from mines to domestic industries or for export. After a period of relatively low coal exports, recent years have seen rapid growth in coal exports due to increased global demand for coal for electricity generation, spurred by soaring petroleum

Figure 2-14
VIRGINIA FREIGHT PROJECTIONS BY MODE (2035)

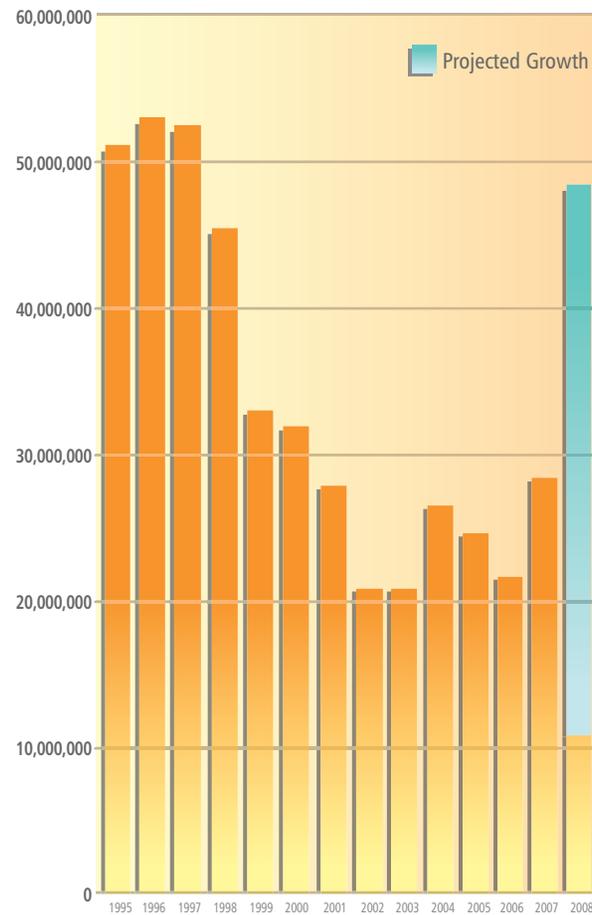


Source: Cambridge Systematics



Freight-related industries comprise approximately 28 percent of Virginia's Gross State Product.

Figure 2-15
COAL SHIPMENTS 1995 - 2008



Source: Virginia Maritime Association

costs. Historical coal movements through Hampton Roads terminals are shown in Figure 2-15. The first quarter of 2008 saw a 62 percent increase over the same period in 2007. This increased demand

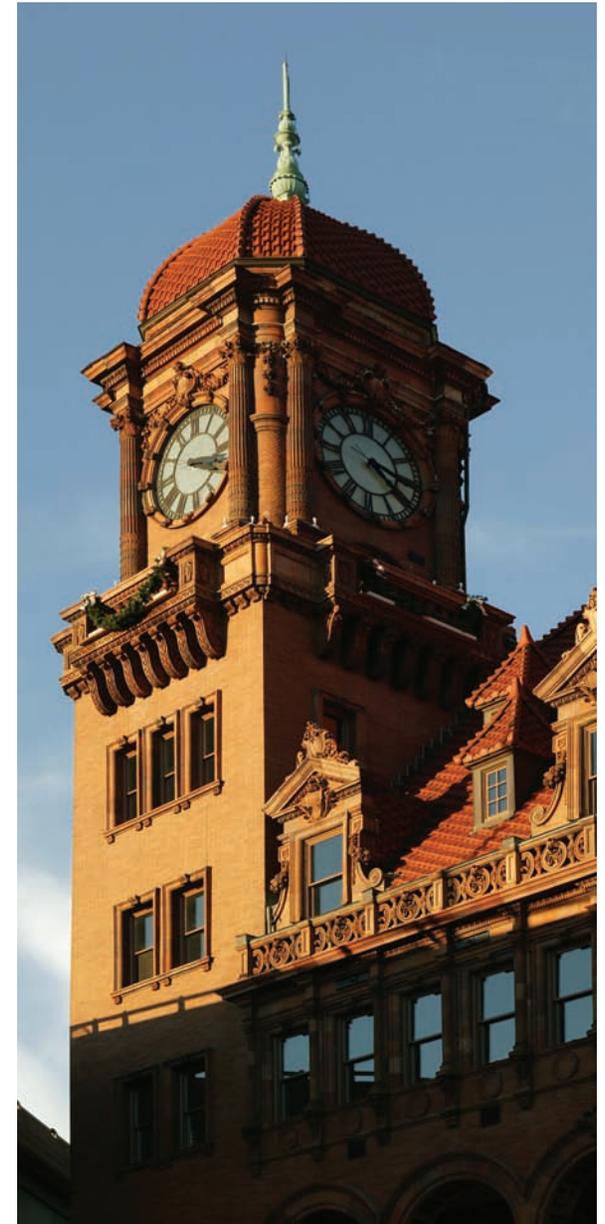
requires a corresponding increase in the number of freight trains needed to transfer the cargo.

According to the most recent data from the Association of American Railroads (2005), the largest commodity carried by tonnage was coal (59 percent). A significant portion of the freight tonnage impacting the state rail system is coal from the Appalachian coalfields in Southwest Virginia to Norfolk Southern and CSX marine terminals in Hampton Roads for export.

Passenger Rail

For nearly two centuries, railroads have been part of this country's heritage and history. Trains enabled the development of our major inland cities, the settlement of our rural areas and the opening of the West for expansion. However, trains are not just part of our past, they are a significant part of our present and a critical part of our future for effective passenger and freight transportation, particularly as energy costs and fuel prices continue to rise.

- On a local level, passenger rail is a proven engine of economic development and growth. Studies show that when passenger rail service is introduced into a community, retail establishments flourish, commercial and residential property values increase and people enjoy the transportation choices they are able to make in their daily lives.
- On a regional level, passenger trains can provide cost-effective and convenient multimodal connections between communities and other modal choices, such as bus, trolley, light rail,



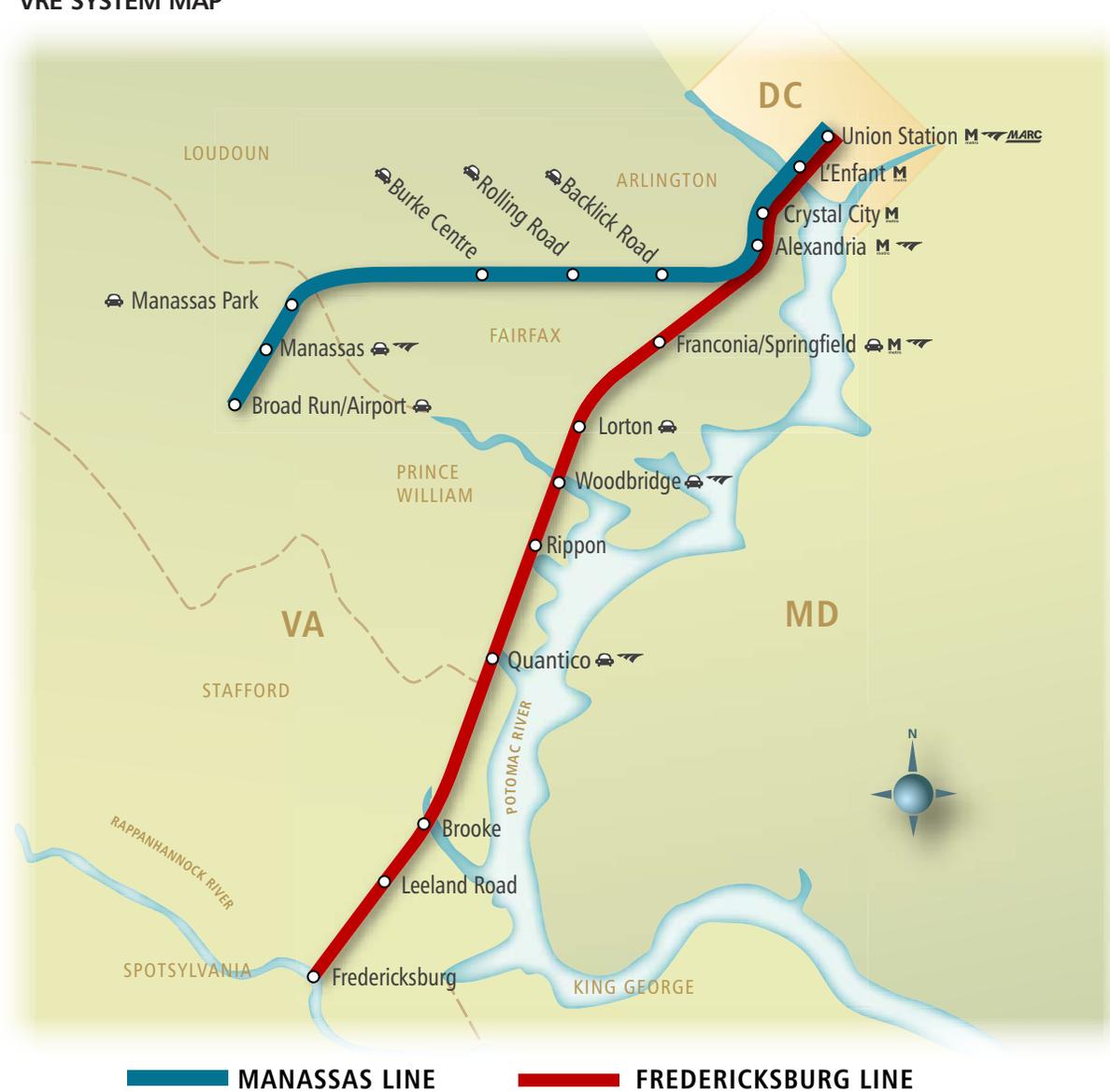
Richmond's newly renovated Main Street Station brings together the best of today's rail travel for passengers in and around Virginia.

bicycle, airport and park-and-ride facilities, and expand economic development opportunities.

- On a national level, passenger trains provide an economic means of expanding capacity, transportation options and connectivity, mobility for underserved populations, congestion mitigation, local air quality improvements and jobs — not just in the railroad industry but also in secondary support industries — which enable and stimulate economic development activity.
- On a global level, passenger rail conserves energy, helps reduce greenhouse gas emissions, reduces airborne particulate and toxic emissions and provides an environmentally friendly land use alternative to the impermeable asphalt surfaces that contribute to the pollution of our waterways.

There are currently two passenger railroads operating in Virginia on approximately 616 miles of track owned primarily by CSX and Norfolk Southern. Collectively, these two passenger railroads, Amtrak and VRE, carried nearly 5.4 million passengers in and through Virginia during 2007. Since 2003, there has been a steady increase in Amtrak Virginia ridership, averaging about five percent per year. VRE (*Figure 2-16*), which provides service to Washington, DC from the Northern Virginia suburbs, has experienced explosive growth. Ridership increases have averaged 16 percent per year and are expected to double in the next 20 years. Both VRE and Amtrak have been and will be challenged by capacity constraints as a result of increased freight rail operations and other capital

Figure 2-16
VRE SYSTEM MAP



Source: VRE

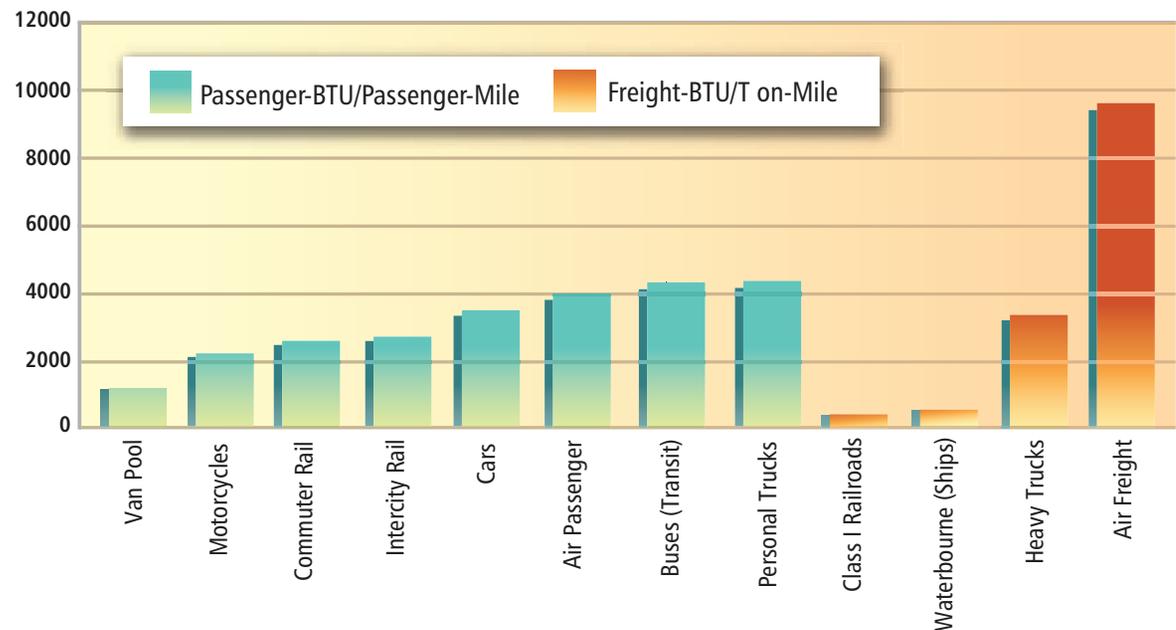
needs related to equipment and station facilities. Metrorail and light rail are not considered to be part of the rail system since they rarely operate in railroad right-of-way and these modes are under the jurisdiction of the Federal Transit Administration.

Natural Resources and Environmental Influences

According to the Association of American Railroads, greater use of freight and passenger rail offers a simple and relatively immediate way to reduce greenhouse gas emissions. The fuel efficiency of commuter rail is 27 percent greater than the automobile for passenger travel, Class I railroads are 90 percent more efficient than trucks for freight movement and railroads have a smaller carbon footprint. Every ton-mile of freight that moves by rail instead of by truck reduces greenhouse emissions by at least 67 percent. Based on data from the American Association of State Highway and Transportation Officials, diverting just one percent of long-haul freight that currently moves by truck to rail would result in annual savings of 110 million gallons of fuel, and annual greenhouse gas emissions would fall by approximately 1.2 million tons. Benefits of improvements in the rail system are summarized in *Figure 2-17*.

Railroads are the most fuel efficient mode of ground transportation. In 2007, freight railroads moved a ton of cargo an average of 436 miles for each gallon of fuel used. According to the Association of American Railroads, railroad fuel efficiency has risen 85 percent between 1980 and 2007 due to new locomotive technologies, advanced research and

Figure 2-17
FUEL EFFICIENCY IN TRANSPORTATION



Source: U.S. Department of Energy

development, innovative operating practices, employee training and diligence in complying with environmental laws and regulations. In 2007, Class I railroads used 3.5 billion fewer gallons of fuel and emitted 39 million fewer tons of carbon dioxide than they would have if their fuel efficiency and operating procedures had remained at 1980 levels.

Land Use and Rail Transportation

Transportation investments and local land use decisions are integrally related. New development creates demand for enhanced transportation infrastructure and services. At the same time,

transportation investments can help shape and direct growth. The Commonwealth has taken steps to improve coordination between transportation and land use over the past several years through traffic impact analyses and other initiatives.

Passenger rail stations and freight truck to rail intermodal facilities serve as anchors for more dense population and industrial development, which support more efficient travel patterns. As the Commonwealth works to implement the 2008 Statewide Rail Plan, it will evaluate state, regional and local transportation benefits and work to

coordinate investments with local land use decisions. It is in the interest of the Commonwealth to ensure that complementary land uses accompany the investment of limited state resources. This coordination will help maximize the benefit of enhanced transportation infrastructure and services.

Investments in rail and transit will help provide the necessary infrastructure for local governments to consider alternatives to low density and inconsistent land use. In 2007, the General Assembly directed high growth local governments to establish urban development areas in their comprehensive plans by 2011. These growth areas are intended to accommodate reasonably dense development and the principles of new urbanism. These principles help to:

- ⚡ Reduce reliance on the automobile;
- ⚡ Create an integrated community atmosphere;
- ⚡ Increase mobility and accessibility;
- ⚡ Reduce crime;
- ⚡ Increase economic vitality and sustainability; and
- ⚡ Maximize public investment in infrastructure such as sewer, water, police and fire protection.

This type of walkable development will complement and help promote state transit and rail investments. High density housing can provide enough passengers for efficient passenger rail service, and when rail and transit service is matched with appropriate land use, traffic congestion can be reduced.

The Commonwealth has implemented requirements to ensure that local and/or regional governments understand the impact of their land use decisions. In the development of the 2008 Statewide Rail Plan, DRPT provided significant support to local governments regarding the potential transportation and economic benefits of dense, mixed-use development around multimodal passenger rail stations. Higher density development and land use will lead to increased usage of transit and passenger rail. Accordingly, local or regional governments that desire state assistance to construct multimodal stations should commit to land use that is supportive of the Commonwealth's goal to increase rail and public transportation usage.



Train travel is 17 percent more energy efficient than domestic airline travel and 21 percent more efficient than traveling by car.

Chapter 3

Overview of the Virginia Rail System

In 2007, Virginia marked the 400th anniversary of the Jamestown Settlement, and freight and passenger transportation remains a critical part of the Commonwealth's economy today. Factors that impact the state's rail system are:

- Fourteen different railroads coordinate passenger and freight service over 3,200 miles of private track, most of which is operated by the state's two Class I railroads – CSX and Norfolk Southern.
- Much of the rail system is single track, creating natural bottlenecks in high traffic areas.
- The largest commodity (by tonnage) carried by rail is coal (59 percent). The increased global appetite for coal that is shipped from Virginia ports is placing greater demand on Virginia's east-west rail corridors.
- Shortlines often provide the critical first or last link in the business-to-business delivery of goods or materials by providing the intensive switching operations that are not profitable for the Class I railroads. Years of deferred maintenance and the

trend toward the use of newer and heavier 286,000 pound railcars have created a need to invest in shortline infrastructure.

- Both Amtrak and VRE use CSX and Norfolk Southern owned tracks. Given the increases in freight demand and the desire to expand passenger rail, Amtrak, VRE and the freight railroads will need to collaborate to share the costs and benefits of improvements.
- VRE is already at capacity and ridership is expected to double in the next 20 years.

These factors have been considered in the development of the 2008 Statewide Rail Plan. They are described in more detail in this chapter.

Virginia's rail system dates from the 1800's and has been evolving continuously since then. Today, it consists of more than 3,200 miles of private track (excluding trackage rights), most of which are operated by two Class I railroads – the Norfolk Southern Corporation (2,020 miles) and CSX (850

miles). Major rail lines run north-south and east-west and converge at key nodes: Norfolk, Richmond, Lynchburg, Roanoke and Alexandria. *Figure 3-1* shows the State Rail Map with the various freight and passenger lines noted.

Twelve freight railroads (shown in *Figure 3-2*) and two passenger railroads operate the Commonwealth's rail system. Two are Class I national railroads (defined as line-haul freight railroads exceeding \$319.3 million in annual operating revenue). The remaining 10 freight railroads are Class III (shortline) railroads (defined as line-haul carriers with annual revenues less than \$25 million). Two of these are primarily switching railroads serving marine terminals and industrial facilities. There are no Class II Railroads in Virginia. Two passenger systems – Amtrak and VRE – utilize this private track freight railroad system.

Much of the rail system in Virginia is single track. Single track railroads are natural bottlenecks, operating like a one-lane highway that must

Figure 3-1
 EXISTING STATE RAIL MAP (2007)



accommodate two-way traffic. Just as cars would need to stop and take turns on a stretch of single-lane road, trains must stop to allow other trains to pass. This type of operation requires careful dispatching procedures for safety reasons and can cause significant capacity constraints and on-time performance delays.

Virginia Rail Tonnage*

The Virginia Statewide Multimodal Freight Study includes data from a national freight database known as TRANSEARCH, which included a set of rail network flow maps, based on model assignments and freight data from 2004. Review of this TRANSEARCH rail flow data reveals that:

- ⚡ For existing Virginia-based tonnage (moving inbound, outbound or within the Commonwealth), the highest volume flows are east-west and focused on the Ports of Hampton Roads. Coal represents a large share of current rail tonnage in this corridor, as well as intermodal movements on the Heartland Corridor. The north-south movement of Virginia rail traffic is a lesser share of rail business. (*Figure 3-3*).
- ⚡ Rail tonnage that has both an origin and a destination outside of Virginia and passes through Virginia mirrors that of trucking. As shown in *Figure 3-4*, pass-through traffic is primarily utilizing the north-south network. North-south rail movements should increase significantly as major rail chokepoints on the I-95

* Freight data discussed in this report was obtained primarily from the Virginia Statewide Multimodal Freight Study, April 2008.

(CSX National Gateway) and I-81 (Norfolk Southern Crescent Corridor) are removed and system improvements are completed in Virginia and adjacent states.

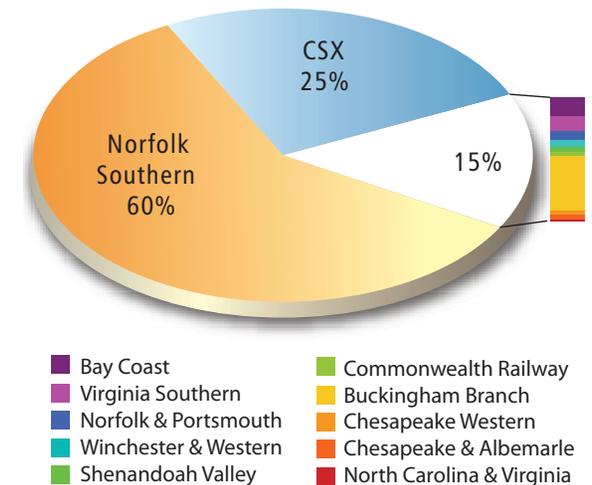
According to data from the Association of American Railroads (2005), there are a total of 2,426,523 annual carloads of freight carried in Virginia with a total tonnage of 178,423,334 tons. The largest commodity carried by tonnage is coal (59 percent). According to the most recent data available from the USDOT (2004), Virginia’s multimodal transportation system handles around 915 million tons of freight worth more than \$2.1 trillion. This includes freight carried by truck, rail, air, domestic water and international water. It also includes freight moving inbound to, outbound from, within and through the Commonwealth. On the basis of tonnage, trucking handles approximately 74 percent, followed by rail at 20 percent (183 million tons), water at 14 percent and air at less than one percent. On the basis of value, trucks handle approximately 94 percent, rail handles approximately four percent and air and water handles approximately two percent.

Rail Types and Services

Virginia’s freight rail traffic includes one of three types of trains (*Figure 3-5*):

- ⚡ **Unit Trains** (trains of 7,500 to 10,000 feet consisting of a single commodity, often coal). Coal trains most often move east-west, between the coalfields of Appalachia and Hampton Roads or between the coalfields and Tennessee/North

Figure 3-2
VIRGINIA'S CURRENT RAIL SYSTEM PRIVATELY OWNED BY FREIGHT RAILROADS



Carolina. About half of the coal moving over Virginia’s rail system is through traffic, traveling to a non-Virginia destination.

- ⚡ **General Merchandise Trains** (trains of varying lengths, consisting of different car types, such as tank cars, hopper cars, flatcars or traditional boxcars). Carloads carry varied commodities (agricultural products, chemicals, paper, lumber, food, etc.) and represent more than 25 percent of Virginia tonnage. They move primarily in the north-south direction, paralleling I-95 and I-81. Like coal, about half of this type of train service is through-traffic.

Figure 3-3
VIRGINIA RAIL TONNAGE - INBOUND, OUTBOUND AND INTERNAL (2004)

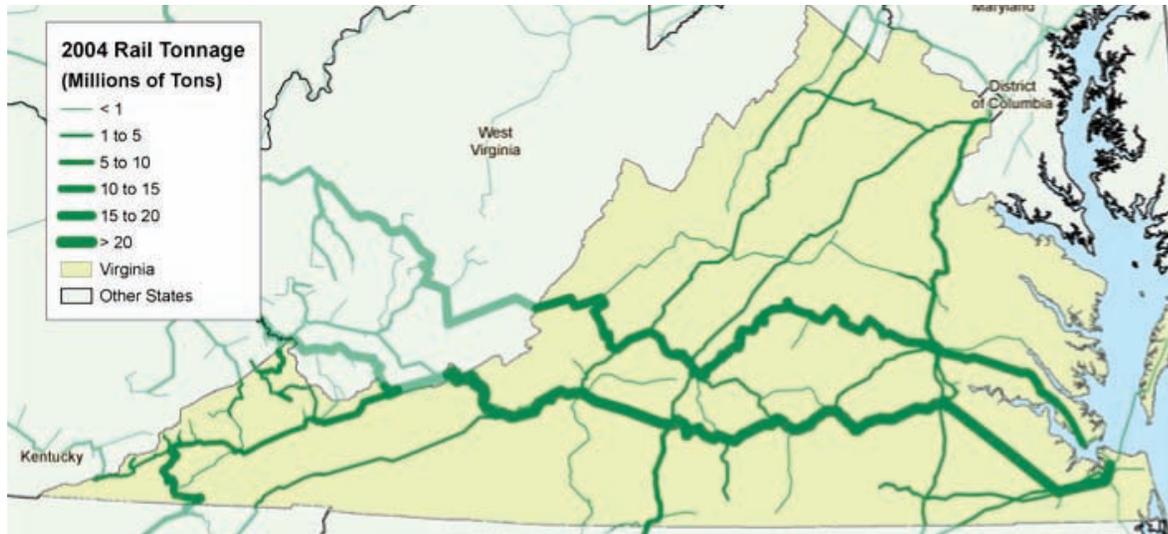
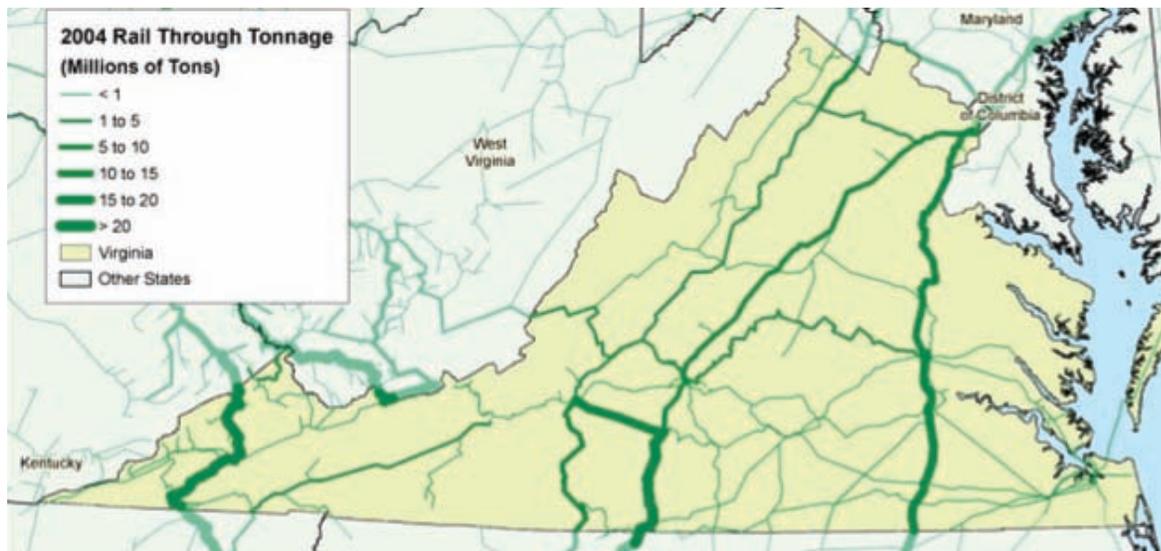


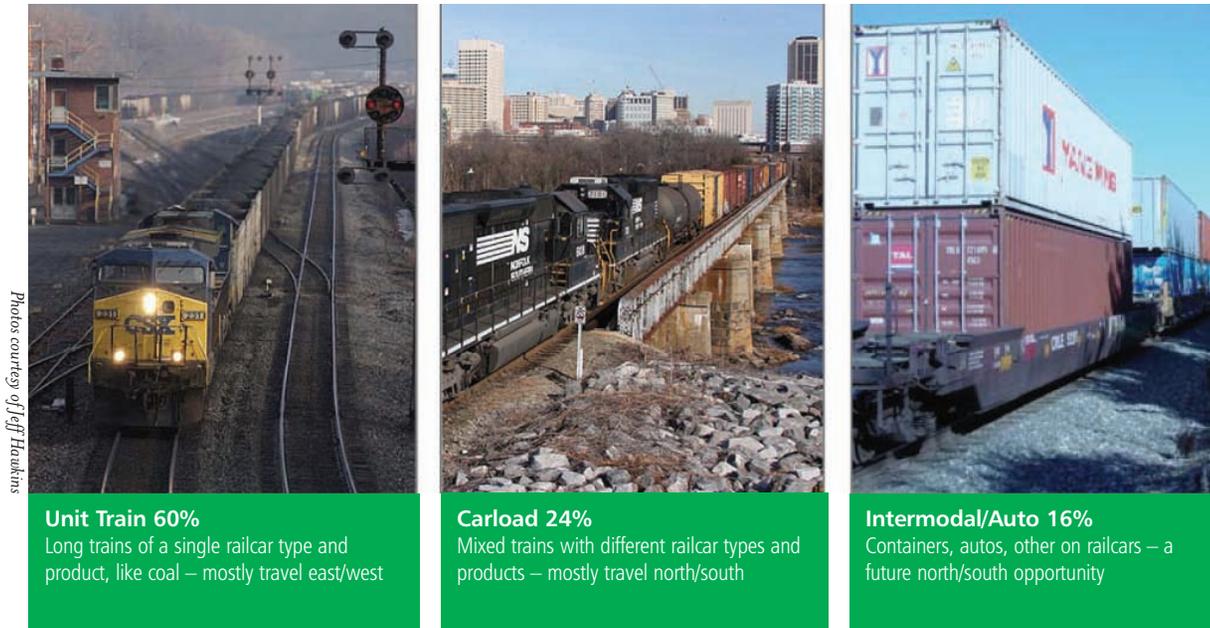
Figure 3-4
RAIL TONNAGE PASSING THROUGH VIRGINIA (2004)



■ Intermodal/Auto Trains (trains of 6,000 to 13,000 feet consisting of specialized railcars designed to carry intermodal shipping containers or automobiles). Intermodal containers represent approximately 19 percent of Virginia’s freight rail traffic on a per-unit basis but only three percent on a per-ton basis because containers tend to carry lower weight, higher value commodities. Intermodal traffic moves both north-south and east-west over Virginia’s rail network. Around one-half is moving between Virginia origins and destinations (Virginia Port Authority facilities and other intermodal terminals) and Illinois, where it may interchange with the western Class I carriers. The remainder consists mostly of through traffic in the Florida-New Jersey and Illinois-North Carolina corridors.

The movement of general merchandise and intermodal trains has been significantly improved as a result of double-stack technology. In 1984, container trains began using specially engineered railcars that could carry two tiers of containers instead of one, significantly reducing the locomotive power, track capacity and train crews required to move trains. The implementation of this technology is largely dependent on the railroad being able to sufficiently raise the height of tunnels, bridges and other structures to allow double-stack trains to operate. The Heartland Corridor Initiative between Norfolk Southern, the federal government and the states of Ohio, West Virginia and Virginia represents a major initiative to support freight rail movement through improvements to support double stack operations. The Heartland Corridor project doubles

Figure 3-5
PERCENT OF FREIGHT RAIL TONNAGE (2005)



freight rail capacity along Route 460 through Virginia and significantly improves the freight shipping time between the Ports of Hampton Roads and markets in the Midwest.

Class I Railroads (CSX and Norfolk Southern)

The two Class I railroads operating in Virginia are Norfolk Southern and CSX Transportation. Norfolk Southern’s corporate headquarters is located in Norfolk. *Figure 3-6* depicts the Norfolk Southern and CSX freight lines in Virginia. Interconnectivity of the overall system is shown in *Figure 3-7*, with system maps for Norfolk Southern and CSX shown

in *Figures 3-8 and 3-9*, respectively. The vast majority of Virginia’s freight rail track infrastructure is in the possession of the two Class I railroads, Norfolk Southern (approximately 60 percent) and CSX (approximately 30 percent), with the remaining 10 percent operated by the shortline railroads.

Virginia’s freight rail network is comprised of tracks, bridges, sidings and terminals. Both Class I railroads offer major east-west connections between Hampton Roads and West Virginia/Kentucky/Tennessee and north-south connections along the I-95 and I-81 corridors to adjacent states and national regions. The majority of Virginia’s freight rail lines

that are connected to the national network run roughly north-south, while the major lines carrying Virginia only tonnage run east-west.

Norfolk Southern

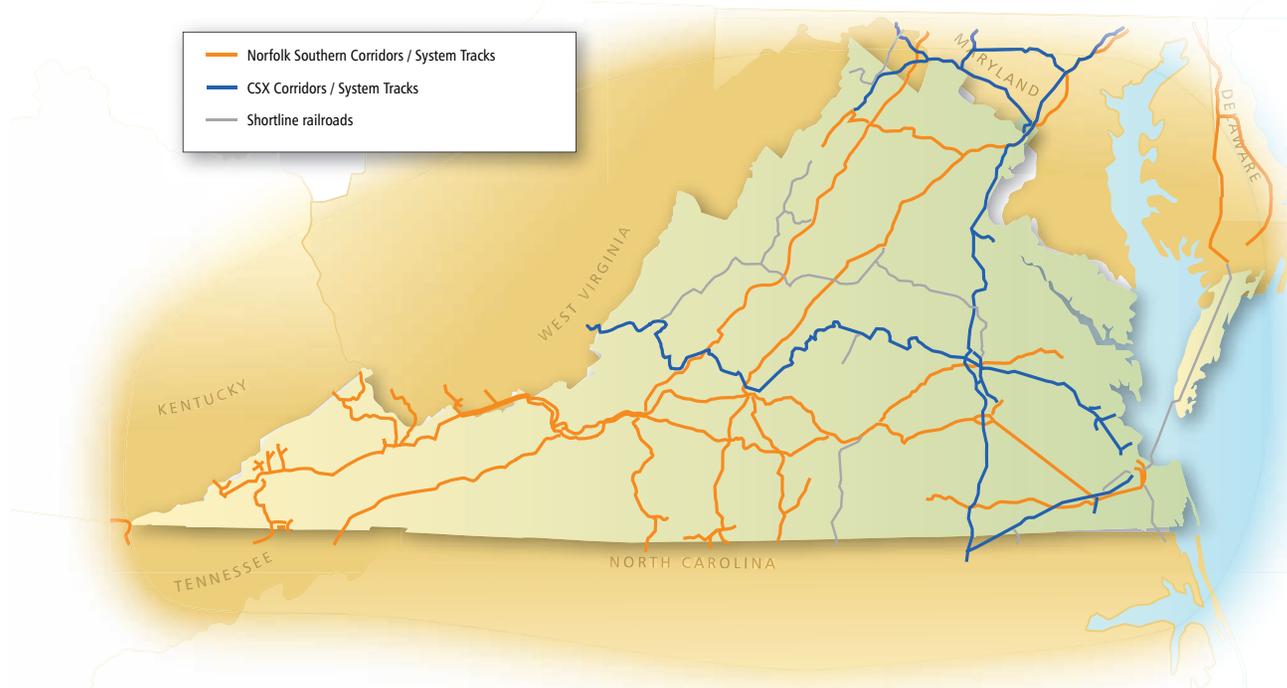
According to the company’s profile, Norfolk Southern Corporation is a Norfolk, VA-based company that controls a major freight railroad, Norfolk Southern Railway Company. The railway operates approximately 21,000 route miles in 22 eastern states and Washington, DC, serves all major eastern ports and connects with rail partners in the West and Canada, linking customers to markets around the world. Norfolk Southern provides comprehensive logistics services and offers the most extensive intermodal network in the East. In 2007, the principal operating revenue sources were coal, coke and iron ore (25 percent); intermodal containers (21 percent); metals and construction (12 percent); chemicals (12 percent); agricultural, consumer products and government (11 percent); automotive (10 percent); and paper, clay and forest products (nine percent). In 2007, rail revenue ton miles equaled \$196 billion and rail shipments (including containers and trailers) equaled approximately 7.6 million rail carloads.

Norfolk Southern’s Virginia routes are:

- **The Crescent Corridor.** These are Norfolk Southern north-south routes in Virginia. One segment runs from Alexandria to Danville and then south to Atlanta, GA via Greensboro and Charlotte, NC and Spartanburg, SC (the Piedmont line). The second route parallels I-81 between Front Royal and Bristol, VA (the Shenandoah line)

Figure 3-6

CLASS I RAILROADS IN VIRGINIA (NORFOLK SOUTHERN AND CSX)



and serves the Commonwealth's Virginia Inland Port (VIP) near Front Royal. The principal train types on the Crescent Corridor are intermodal, general merchandise and auto trains.

- **The Heartland Corridor.** This heavily used line runs from the Ports of Hampton Roads to the West Virginia border in Southwest Virginia and then to Midwest markets in Ohio, Illinois and other states along Route 460. The Heartland Corridor is Norfolk Southern's primary intermodal train system connecting the Ports of Hampton Roads to national markets and is currently being improved in order to handle heavier double-stack intermodal trains.

- **The Coal Corridor.** This is the line with the heaviest use, carrying unit trains of coal from the Appalachian coalfields to the Norfolk Southern Coal Marine Terminal at Lamberts Point in Norfolk. The Coal Corridor is a dual line route consisting of the former Virginian Line and the former Norfolk and Western Line from the coalfields to Abilene, VA, where both lines merge to continue eastward to Norfolk on the former Norfolk and Western Line.

CSX Transportation

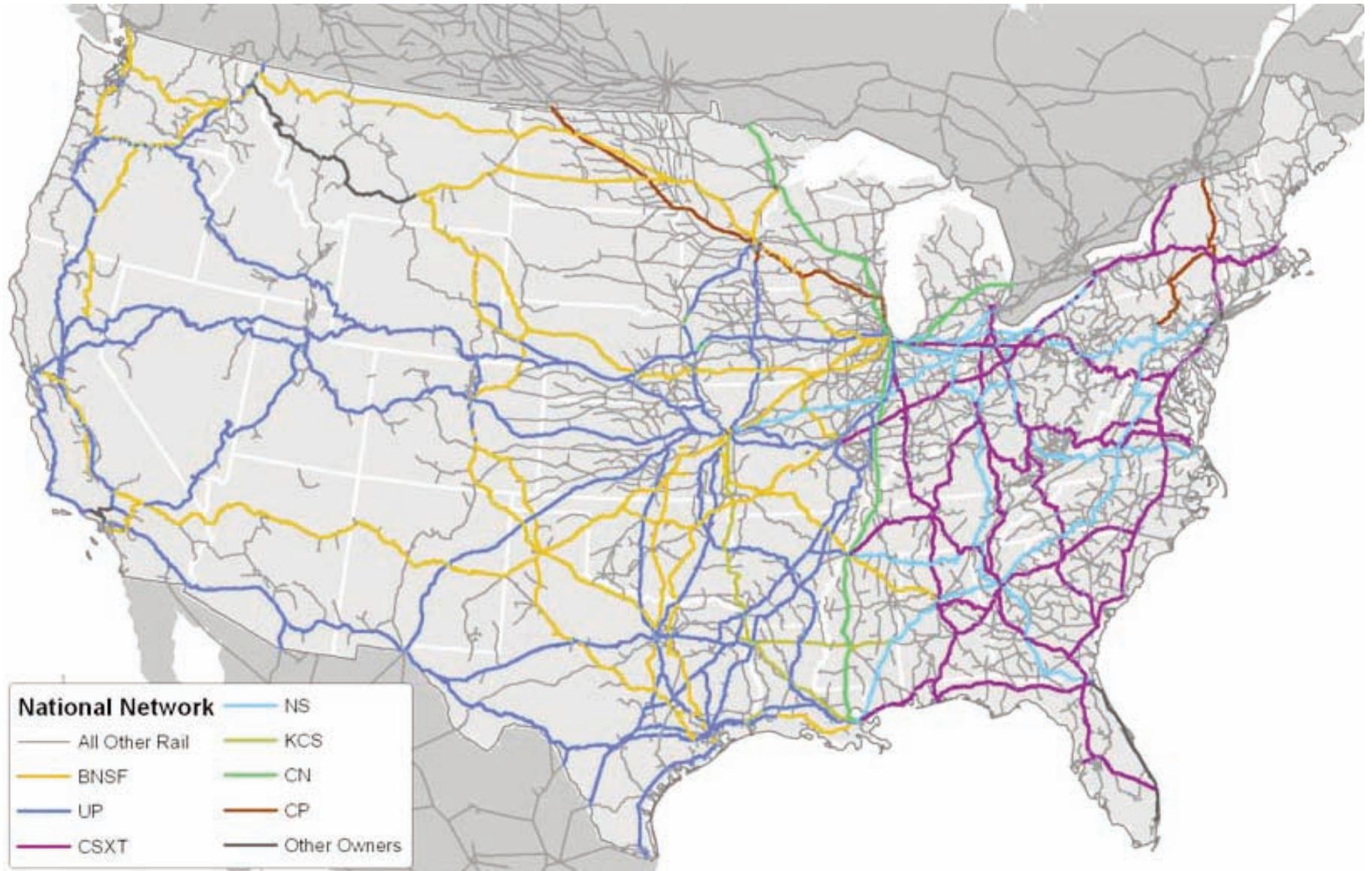
According to the company's profile, CSX Corporation, based in Jacksonville, FL, owns

companies providing rail, intermodal and rail-to-truck transload services that are among the nation's leading transportation companies, connecting more than 70 river, ocean and lake ports, as well as more than 200 shortline railroads. Its principal operating company, CSX Transportation Inc., operates one of the largest railroads in the eastern U.S. with a 21,000-mile rail network linking commercial markets in 23 states, Washington, DC and two Canadian provinces. In 2007, the principal operating revenue sources were merchandise containers/trailers (58 percent); coal, coke and iron ore (30 percent); automotive (10 percent); and other miscellaneous freight (two percent).

CSX's Virginia routes are:

- **The National Gateway Corridor.** This north-south route runs from Alexandria to Richmond, then continues further south via Petersburg and Emporia, generally paralleling I-95. At Weldon, NC just below the Virginia-North Carolina border, the route has an eastward extension to the Ports of Hampton Roads. The National Gateway Corridor is CSX's primary intermodal train system connecting the Ports of Hampton Roads to national markets and is currently being improved to handle double-stack intermodal trains.
- **The Coal Corridor.** One of the most heavily used CSX lines, this route carries unit trains of coal from the Appalachian coalfields through Richmond and the Peninsula to two Coal Marine Terminals in Newport News.

Figure 3-7
NATIONAL RAIL NETWORK



Source: Cambridge Systematics

Figure 3-8
NORFOLK SOUTHERN SYSTEM MAP



Source: Norfolk Southern

Shortline Railroads

Shortline railroads (defined as line-haul carriers with annual revenues less than \$25 million) have become a critical component of the rail industry, providing benefits to shippers and local communities to support economic development. Shortlines act as the originating and terminating railroads for approximately one-third of all rail shipments, often providing the first or last link in business-to-business delivery by providing the intensive switching operations that are not profitable for the Class I railroads. Shortline tracks must handle 286,000 pound capacity railcars and container shipments in order to interface effectively with the Class I railroads.

In Virginia, the shortlines consist of 10 railroads (plus rail operations to the Port of Richmond) with approximately 489 route miles. *Figure 3-10* shows the shortline system in the Commonwealth and *Figure 3-11* shows the number of carloads carried in 2007 by the shortline operators.

Many of the shortlines were built over 100 years ago using lighter weight rails and less ballast (gravel bed) than the Class I railroads, and in many cases have experienced track and operational problems due to postponement of regular maintenance. Many of the lines were previously owned by some of the major Class I railroads, which divested them as a result of low traffic volumes or declining revenues. Maintenance of a railroad is a costly, continual operation and the shortline railroads are constrained by the financial challenges of balancing the cost of operations and track maintenance.

Figure 3-9

CSX TRANSPORTATION SYSTEM MAP



Source: CSX

Over the past decade, the rail industry has generally moved from railcars with a weight capacity equaling 256,000 pound railcars, to the current standard of 286,000 pound railcars for transporting heavy bulk materials like coal, grain and lumber.

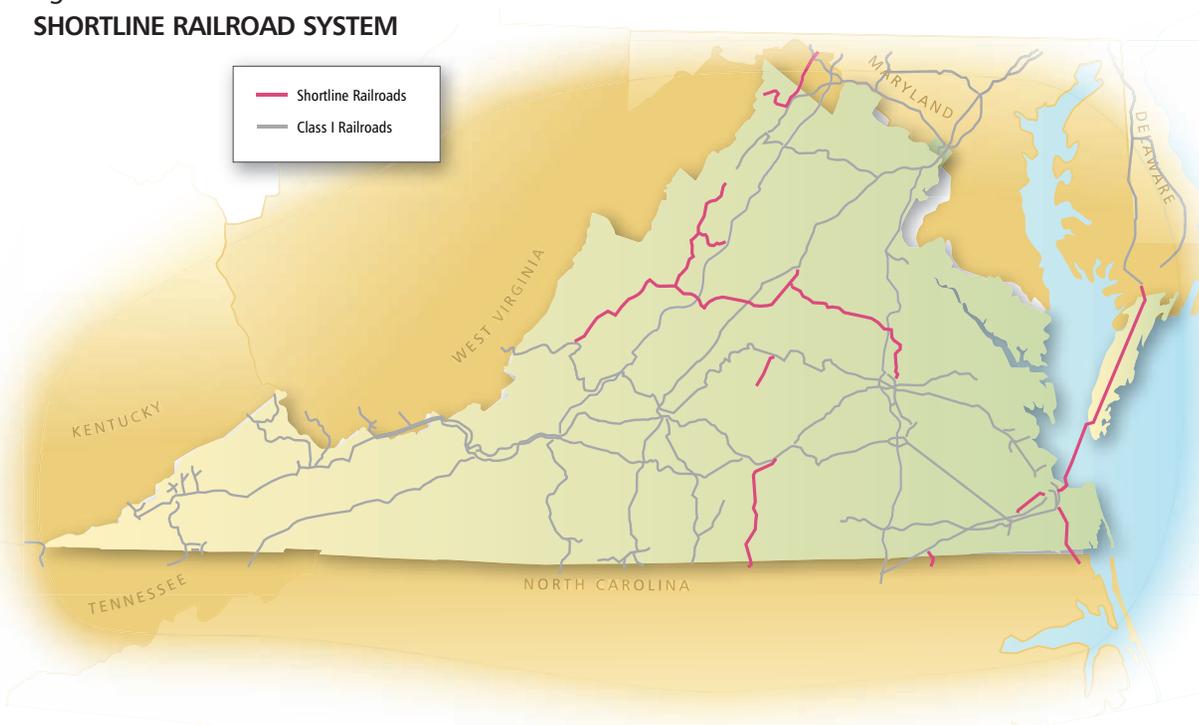
The combination of deferred maintenance and the trend towards the use of newer and heavier 286,000 pound railcars has created a need to invest in shortline infrastructure.

All of Virginia’s shortlines are classified by the Federal Railroad Administration (FRA) as Class III railroads (line-haul carriers with annual revenues less than \$25 million), except for the Deepwater Terminal Railroad owned by the City of Richmond. This railroad has no official FRA designation. A brief description of the existing shortline railroads follows.

Bay Coast Railway

Bay Coast Railway operates the former Eastern Shore Railroad line, providing service from Pocomoke City, MD, to Norfolk, VA. This north-south route on the Delmarva Peninsula remains the most direct route between the Northeast and Norfolk. The rail line is unique in its ability to handle special over-height rail shipments – shipments that cannot be accommodated on the Norfolk Southern and CSX corridors due to tunnel and bridge restrictions (particularly in urban city areas). Bay Coast uses a rail ferry service to span the 26-mile water route across the Chesapeake Bay between Cape Charles and Norfolk. This float operation is one of only two remaining in the Eastern United States and is the longest water route in the country.

Figure 3-10
SHORTLINE RAILROAD SYSTEM



Bay Coast interchanges with Norfolk Southern and the Norfolk and Portsmouth Belt Line Railroad in Norfolk and Norfolk Southern in Pocomoke City, MD.

Buckingham Branch Railroad

Buckingham Branch is a family-owned shortline railroad operating over 219 miles of historic and strategic track in Central Virginia. The railroad also leases and operates a 200-mile route from Richmond to Clifton Forge and a 19-mile route from Dillwyn in Buckingham County northward to the CSX connection.

Buckingham Branch transports railcars from CSX, Norfolk Southern and the Shenandoah Valley

Railroad. Amtrak operates the Cardinal passenger train route three days a week over approximately 130 miles of Buckingham Branch tracks.

Chesapeake and Albemarle Railroad

This shortline is operated by the North Carolina and Virginia Railroad and is owned by RailAmerica. It operates on 82 miles of track leased from Norfolk Southern from Chesapeake to Edenton, NC. The Chesapeake and Albemarle Railroad interchanges with both Norfolk Southern and CSX.

Chesapeake Western Railroad

This shortline began as an intrastate railroad in west-central Virginia. Through many changes in

ownership and the extent of its lines, today it operates as the Chesapeake Western Railroad of Norfolk Southern.

Commonwealth Railway, Inc.

Commonwealth Railway, owned by Rail Link Inc., operates 16.5 miles of track of the former Norfolk, Franklin and Danville Railway line from Suffolk to Portsmouth. In May 2008, the shortline purchased the remaining interest in the line from Norfolk Southern with funding from DRPT’s Rail Enhancement Program.

Commonwealth Railway is the primary rail carrier to the new Maersk APM Terminal in Portsmouth, providing double-stack rail service to the new container terminal and the future Craney Island Marine Terminal. Existing industries, such as the BASF chemical plant in the West Norfolk area of Portsmouth, are also served by this shortline.

Commonwealth Railway provides dual Class I railroad access to the marine terminals and industries in Portsmouth, with rail connections to both Norfolk Southern and CSX near Suffolk. The shortline also operates a new rail marshalling yard in Suffolk to assemble intermodal train segments from the Maersk APM Terminal into unit trains for shipping to outlying areas.

Norfolk and Portsmouth Belt Line

Norfolk and Portsmouth Belt Line has been operating in Norfolk, Portsmouth and Chesapeake since 1898. Its ownership is 57 percent Norfolk Southern and 43 percent CSX Transportation. The

Belt Line interchanges with Chesapeake and Albemarle Railroad, CSX Transportation, Bay Coast Railway and Norfolk Southern. The Belt Line is a terminal switching company that owns 36 miles of track (plus 27 miles of track rights) and links commerce around the deepwater port from Sewells Point to Portsmouth Marine Terminal, including the Southern Branch of the Elizabeth River. All locomotives are leased from Norfolk Southern.

North Carolina and Virginia Railroad

The North Carolina and Virginia Railroad started in 1987 on the former Seaboard Coast Line Railroad. It interchanges with CSX Transportation in Boykins. The line is owned by RailAmerica.

Shenandoah Valley Railroad

This shortline extends northward from Staunton to Pleasant Valley. The shortline was formed in 1993 by several major shippers and adopted the old historic name which was not in use. Shenandoah Valley Railroad is operated under contract by the Durbin and Greenbrier Valley Railroad and interchanges with Buckingham Branch and Norfolk Southern railroads.

Virginia Southern Railroad

Virginia Southern Railroad is a 75-mile line that runs from Burkeville to Oxford, NC. A portion of the line between Clarksville and Oxford, NC has not been in use for more than a decade. The shortline is operated by the North Carolina and Virginia Railroad and owned by RailAmerica. It is headquartered in Keysville and interchanges with Norfolk Southern. The route is leased from Norfolk Southern.

Figure 3-11

SHORTLINE RAILROADS – SUMMARY OF ANNUAL CARLOADS (2007)

COMMODITY	Bay Coast Railroad	Buckingham Branch Railroad	Chesapeake & Albemarle Railroad	Chesapeake Western Railroad	Commonwealth Railway, Inc. *	Norfolk & Portsmouth Belt Line	North Carolina & Virginia Railroad	Shenandoah Valley Railroad	Virginia Southern Railroad	Winchester & Western Railroad Co.
Base Metals						X	X			X
Milled Grain Products	X	X	X	X		X	X	X		
Gravel and Crushed Stone	X	X	X			X				X
Plastic and Rubber	X	X				X	X			X
Wood Products	X	X	X				X	X	X	
Waste and Scrap						X	X	X		
Misc. Manufactured Products			X			X				
Nonmetallic Minerals		X				X				
Paper	X	X					X		X	X
Basic Chemicals	X				X	X	X		X	
Transportation Equipment						X				
Metallic Ore & Concentrates		X								
Machinery	X					X	X			
Cargo – Not Otherwise Specified	X	X	X		X	X	X	X	X	X
TOTALS	3,027	542,888	6,329	N/A	839*	21,470	23,974	1,305	3,878	6,277

* Does not include containerized cargo from the new Maersk APM Terminal in Portsmouth which opened in late 2007 and will generate many new carloads in the future (as will the future VPA Crane Island Marine Terminal to open in 2017). ** DWT is not classified by FRA.

Figure 3-12

AMTRAK NATIONAL PASSENGER RAIL ROUTES



Source:Amtrak

Winchester and Western Railroad Company

Winchester and Western Railroad Company is the oldest operating shortline in Virginia. The 54-mile railroad operates between Gore and Winchester and from Winchester to Hagerstown, MD. The shortline is exclusively a freight line with connections to CSX Transportation and Norfolk Southern.

Deepwater Terminal Railroad

The Port of Richmond Deepwater Terminal Railroad owns approximately four miles of track from downtown Richmond to the Port of Richmond on the west side of the James River. DWT is a terminal and switching railroad served directly by CSX and indirectly by Norfolk Southern. Deepwater Terminal Railroad extends south between the James River and I-95 within Richmond and primarily serves the Port's containers and miscellaneous bulk cargo. Although The shortline is not a Surface Transportation Board authorized railroad, it is recognized by the Commonwealth for its importance to operations at the Port of Richmond and industries along the line.

Passenger Rail

AMTRAK INTERCITY RAIL

When established in 1971, Amtrak was required to operate a basic system of corridor and long distance routes as designated by the U.S. Department of Transportation. Amtrak's enabling legislation (Rail Passenger Service Act) provided for states to contract for additional service. Under this provision, known as Section 403(b), the percentage of costs paid by states changed many times. Section 403(b) of the Rail Passenger Service Act was repealed in 1997 and subsequent legislative directives and current funding

levels preclude Amtrak from operating additional services unless those services are state-supported. Therefore, any expansion of intercity passenger rail service in Virginia has to be funded by the Commonwealth.

Amtrak provides state-supported passenger rail service in 14 states, generally offering a turnkey operation that may include rolling stock, on-board operating crews, station staff, management and administrative support, maintenance of equipment,

maintenance of way (tracks and signals), marketing and advertising, reservation sales and ticketing. These services are provided to the state transportation agency or other relevant authority at costs based on services rendered. In total, state-supported services comprise approximately 45 percent of Amtrak's average weekday departures.

Figure 3-12 depicts the existing Amtrak national passenger service map and Figure 3-13 depicts the eight existing Amtrak routes serving Virginia.

Figure 3-13
AMTRAK PASSENGER ROUTES SERVING VIRGINIA

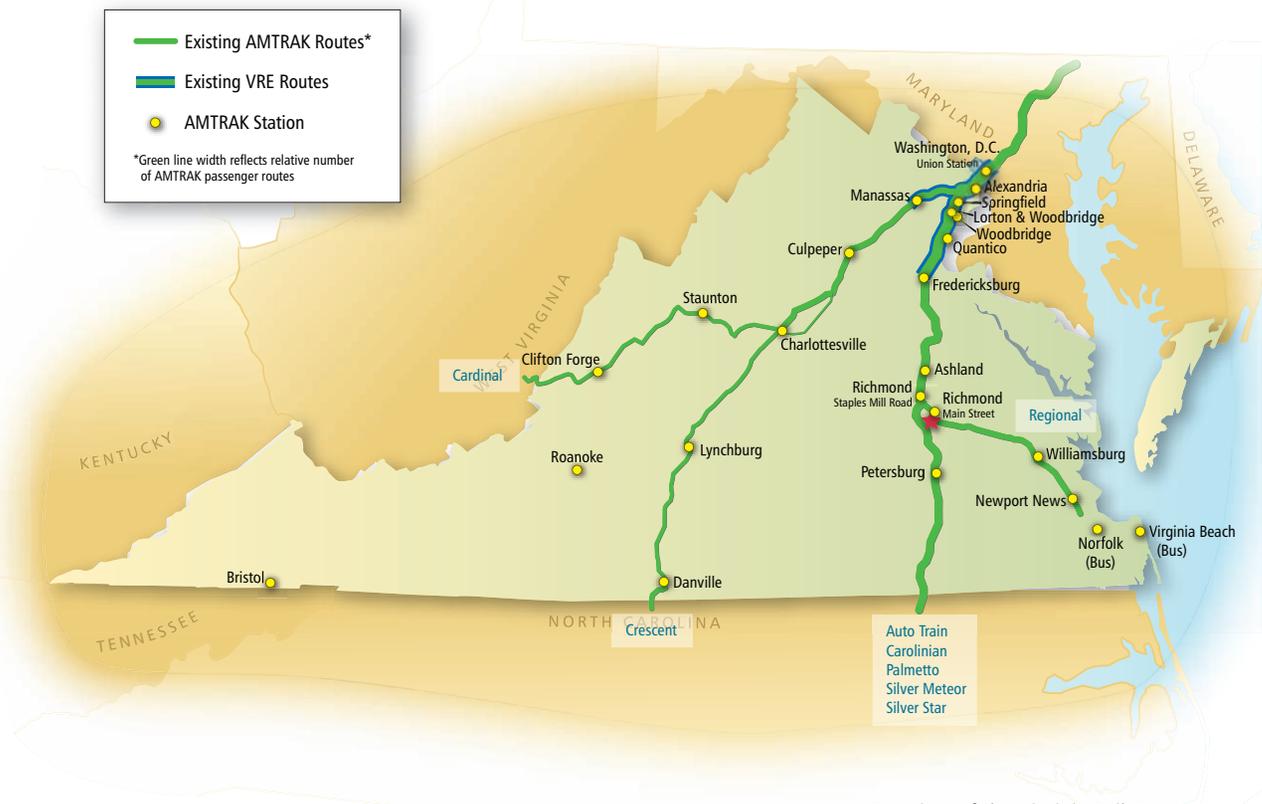


Figure 3-14

ANNUAL AMTRAK RIDERSHIP BY STATION – VIRGINIA (2007)

	Station	Northeast	79/80	89/90	91/92	97/98	53/52	19/20	50/51	TOTALS	
		Corridor Regional	Carolinian	Palmetto	Silver Star	Silver Meteor	Auto Train	Crescent	Cardinal		
Boardings	Alexandria	26,390	7,689	4,161	3,351	2,091		3,148	1,343	48,173	
	Woodbridge	7,269	68							7,337	
	Quantico	11,897	1,892	2						13,791	
	Fredericksburg	26,057	3,974	11						30,042	
	Ashland	6,059								6,059	
	Richmond (Main St. + Staples Mill)	78,926	18,959	13,222	6,937	5,096				123,140	
	Williamsburg	20,490								20,490	
	Newport News	48,126								48,126	
	Manassas							2,410	1,058	3,468	
	Culpeper							1,367	557	1,924	
	Charlottesville							13,457	8,874	22,331	
	Lynchburg							8,971		8,971	
	Danville							2,242		2,242	
	Staunton								2,925	2,925	
	Clifton Forge								1,621	1,621	
	Other Virginia	580	3,533	2,385	2,539	802	113,545			123,384	
	Outside Virginia	175,716	220,097	137,217	316,305	283,746	104,277	226,013	78,776	1,542,147	
	Alightings	Alexandria	24,609	7,544	4,542	4,096	2,888		4,218	1,664	49,561
		Woodbridge	7,956	68							8,024
		Quantico	12,564	1,700	23						14,287
Fredericksburg		27,361	4,191	21						31,573	
Ashland		6,850								6,850	
Richmond (Main St. + Staples Mill)		74,393	14,231	11,087	15,842	8,734				124,287	
Williamsburg		20,531								20,531	
Newport News		48,347								48,347	
								2,625	1,265	3,890	
Culpeper								1,487	740	2,227	
Charlottesville								15,359	8,995	24,354	
Lynchburg								9,395		9,395	
Danville								2,420		2,420	
Staunton									3,371	3,371	
Clifton Forge									1,595	1,595	
Other Virginia		1,115	2,592	2,539	2,743	1,592	104,277			114,858	
Outside Virginia		177,784	225,886	138,786	306,451	278,521	113,545	222,104	77,524	1,540,601	
*Only includes Regional trains operating south of Washington											
Virginia Boardings & Alightings		449,520	66,441	37,993	35,508	21,203	217,822	67,099	34,008	929,594	
Virginia Ridership		224,760	33,221	18,997	17,754	10,602	108,911	33,550	17,004	464,797	
Outside Virginia Boardings & Alightings		353,500	445,983	276,003	622,756	562,267	217,822	448,117	156,300	3,082,748	
Outside Virginia Ridership		176,750	222,992	138,002	311,378	281,134	108,911	224,059	78,150	1,541,374	
Total Route Boarding & Alightings		803,020	512,424	313,996	658,264	583,470	435,644	515,216	190,308	4,012,342	
Total Ridership		401,510	256,212	156,998	329,132	291,735	217,822	257,608	95,154	2,006,171	

Source: Amtrak

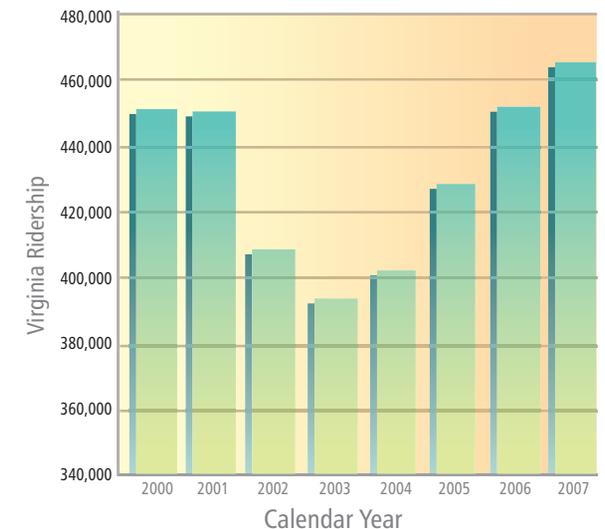
Ridership by station is shown in *Figure 3-14* and *Figure 3-15* depicts the annual ridership on Amtrak routes between 2000 and 2007. As can be seen

from *Figure 3-15*, there has been a steady increase in passenger rail ridership in Virginia since 2003, averaging approximately five percent per year. This

has been lower than Amtrak’s 12 percent national annual average increase since 2002. However, recent increases in fuel and energy prices have generated a higher demand for passenger rail that should result in higher annual ridership increases than those experienced over the past few years.

In 2007, Amtrak operated 20 daily intercity trains and two tri-weekly trains in the Commonwealth with 929,594 passengers either boarding or alighting within Virginia (state ridership of 464,797). Including passengers on the routes from other states that are passing through Virginia, the total ridership was 2,006,171 passengers. Additionally, Amtrak estimates that of the 3.7 million Amtrak passengers

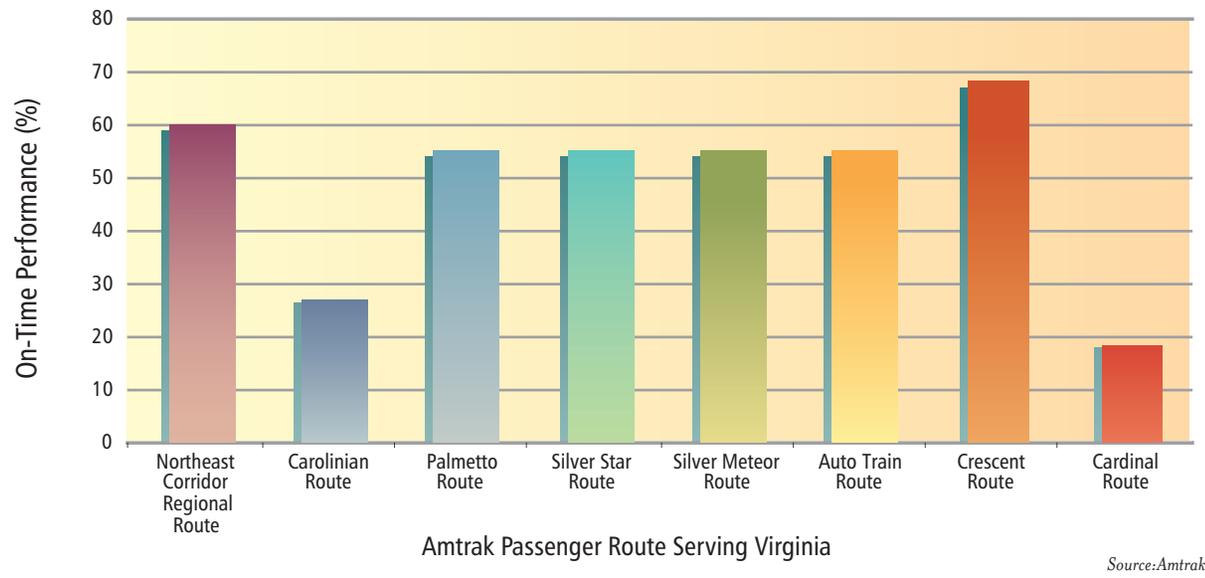
Figure 3-15
AMTRAK ANNUAL VIRGINIA RIDERSHIP (2000 – 2007)



Source: Amtrak

Figure 3-16

AMTRAK ON-TIME PERFORMANCE OF PASSENGER ROUTES SERVING VIRGINIA



who annually use the Washington, DC Union Station, well over one million reside in Virginia.

Amtrak expended more than \$50 million for goods and services in Virginia in FY2007 employing 760 Virginia residents.

Unfortunately, according to Amtrak’s 2006 Annual Report, one key performance indicator that has not moved in the right direction is the relatively poor on-time performance of many long-distance and non-Northeast Corridor trains. Where Amtrak owns the track and controls the dispatching of trains (the Northeast Corridor), on-time performance is generally good. However, on routes where Amtrak operates over rail infrastructure owned, operated

and dispatched by freight railroad companies (as is the case in Virginia), on-time performance is often poor. In FY2006, only 30 percent of Amtrak’s long-distance trains arrived on time. *Figure 3-16* shows Amtrak on-time performance for 2007.

Amtrak delays are usually due to insufficient rail capacity and the need for additional infrastructure investment by freight railroads. There is also a fundamental contradiction between freight and passenger rail. Freight rail succeeds when demand is greater than capacity. Passenger rail, on the other hand, succeeds when capacity is greater than demand. Bridging this operational gap is critical to resolving the dilemma of on-time performance for passenger rail.

A brief description of Amtrak’s eight passenger routes serving Virginia follows.

Northeast Corridor Regional Route

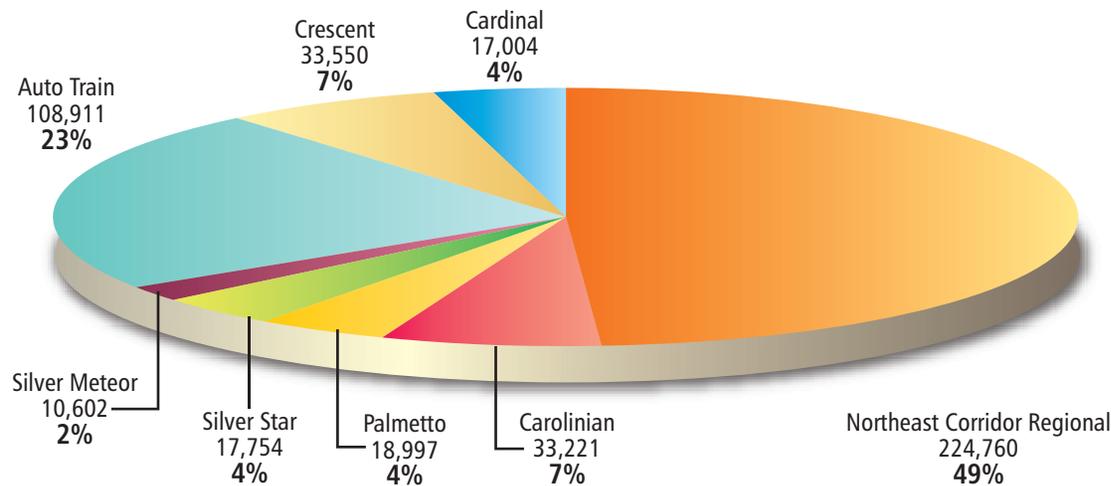
- Daily passenger rail service from Newport News to Boston, MA.
- Amtrak station stops in Virginia include Newport News, Williamsburg, Richmond (Main Street and Staples Mill), Ashland, Fredericksburg, Quantico, Woodbridge, Springfield, Alexandria and Washington, DC.
- Service is provided on CSX tracks.
- Currently there are four daily round trips to Richmond with two continuing to Newport News.
- Annual ridership in 2007 was 224,760 passengers from Virginia, with total ridership of 401,510 including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 60 percent.
- This regional service (which includes the I-95 and I-64 corridors) carried approximately 49 percent of all Amtrak passengers in Virginia in 2007 as shown in *Figure 3-17*.

Carolinian Route

- Daily passenger rail service from Charlotte, NC to New York City.
- Amtrak station stops in Virginia include Petersburg, Richmond (Staples Mill), Fredericksburg, Quantico, Alexandria and Washington, DC.
- Service is provided on a combination of Norfolk Southern, CSX and Amtrak tracks.

Figure 3-17

AMTRAK - VIRGINIA RIDERSHIP - VIRGINIA ROUTES (COMMONWEALTH PASSENGERS ONLY = 464,797)



Source: Amtrak

- Annual ridership in 2007 was 33,221 passengers from Virginia, with total ridership of 256,212, including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 27 percent.
- This rail service is part of the I-95 corridor.

Palmetto Route

- Daily passenger rail service from Savannah, GA to New York City.
- Amtrak station stops in Virginia include Petersburg, Richmond (Staples Mill), Alexandria and Washington, DC.
- Service is provided on a combination of CSX and Amtrak tracks.

- Annual ridership in 2007 was 18,997 passengers from Virginia, with total ridership of 156,998, including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 55 percent.
- This rail service is part of the I-95 corridor.

Silver Star Route

- Daily passenger rail service from Miami and Tampa, FL to New York City.
- Amtrak station stops in Virginia include Petersburg, Richmond (Staples Mill), Alexandria and Washington, DC.
- Service is provided on a combination of CSX and Amtrak tracks.

- Annual ridership in 2007 was 17,754 passengers from Virginia, with total ridership of 329,132, including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 55 percent.
- This rail service is part of the I-95 corridor.

Silver Meteor Route

- Daily passenger rail service from Miami, FL to New York City.
- Amtrak station stops in Virginia include Petersburg, Richmond (Staples Mill), Alexandria and Washington, DC.
- Service is provided on a combination of CSX and Amtrak tracks.
- Annual ridership in 2007 was 10,602 passengers from Virginia, with total ridership of 291,735, including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 55 percent.
- This rail service is part of the I-95 corridor.

Auto Train Route

- Direct daily passenger rail service and automobile transfers between Lorton and Sanford, FL (no station stops in between).
- Service is provided on CSX tracks.
- Annual ridership in 2007 was 108,911 passengers from Virginia, with total ridership of 217,822, including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 55 percent.
- This rail service is part of the I-95 corridor.

Crescent Route

- Daily passenger rail service from New Orleans, LA to New York City.
- Amtrak station stops in Virginia include Danville, Lynchburg, Charlottesville, Culpeper, Manassas, Alexandria and Washington, DC.
- Service is provided on a combination of Norfolk Southern and Amtrak tracks.
- Annual ridership in 2007 was 33,550 passengers from Virginia, with total ridership of 257,608 including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 68 percent.
- This rail service is part of the I-81 and Route 29 transportation corridors.

Cardinal Route

- Passenger rail service three times a week from Chicago, IL to New York City.
- Amtrak station stops in Virginia include Clifton Forge, Staunton, Charlottesville, Culpeper, Manassas and Washington, DC
- Service is provided on a combination of Norfolk Southern, CSX, Buckingham Branch and Amtrak tracks.
- Annual ridership in 2007 was 17,004 passengers from Virginia, with total ridership of 95,154, including out-of-state passengers.
- On-time performance for the first quarter of 2008 was 18 percent.
- This rail service is part of the I-81 and Route 29 corridors.



Passengers assemble to board the Virginia Railway Express commuter rail service.



Virginia Railway Express provides the equivalent capacity of one lane of traffic on I-95 and I-66 during peak travel periods in the Northern Virginia region.

VIRGINIA RAILWAY EXPRESS

VRE was founded in 1992 with a vision to provide a safe, convenient, energy-efficient public transportation alternative to driving congested highways from the Northern Virginia suburbs to the business districts of Alexandria, Crystal City and Washington, DC. Organizationally, VRE is a joint operation of two commissions – the Northern Virginia Transportation Commission (NVTC) and the Potomac and Rappahannock Transportation Commission (PRTC) – which represent the Northern Virginia counties and municipalities in the service area. Members of both entities sit on the VRE Operations Board, which governs VRE. Daily operations and capital projects are financed from a combination of federal, state and local grants and through the sale of tickets (often referred to as farebox revenue).

In 2007, VRE reported total ridership of 3,435,561 passengers as follows:

- An average of 15 trains per day on the Fredericksburg Line with 1,816,826 passengers per year (I-95 corridor), operated on CSX tracks.
- An average of 16 trains per day on the Manassas Line with 1,618,735 passengers per year (I-66 and Route 29 corridors), operated on Norfolk Southern tracks.

As illustrated in *Figure 3-18*, VRE has been successful in providing an alternative to driving. Since 1992, daily trips have increased from 6,500 to upwards of 15,000 passenger trips per day today. Each weekday, VRE's 29 revenue trains operate over two branch

Figure 3-18

VRE RIDERSHIP, OCTOBER 2001 – MAY 2008

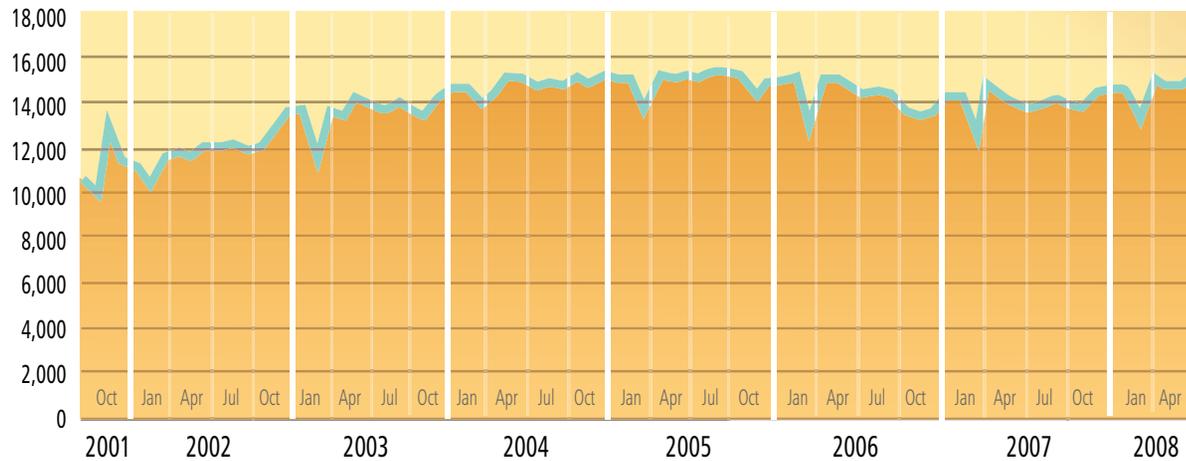
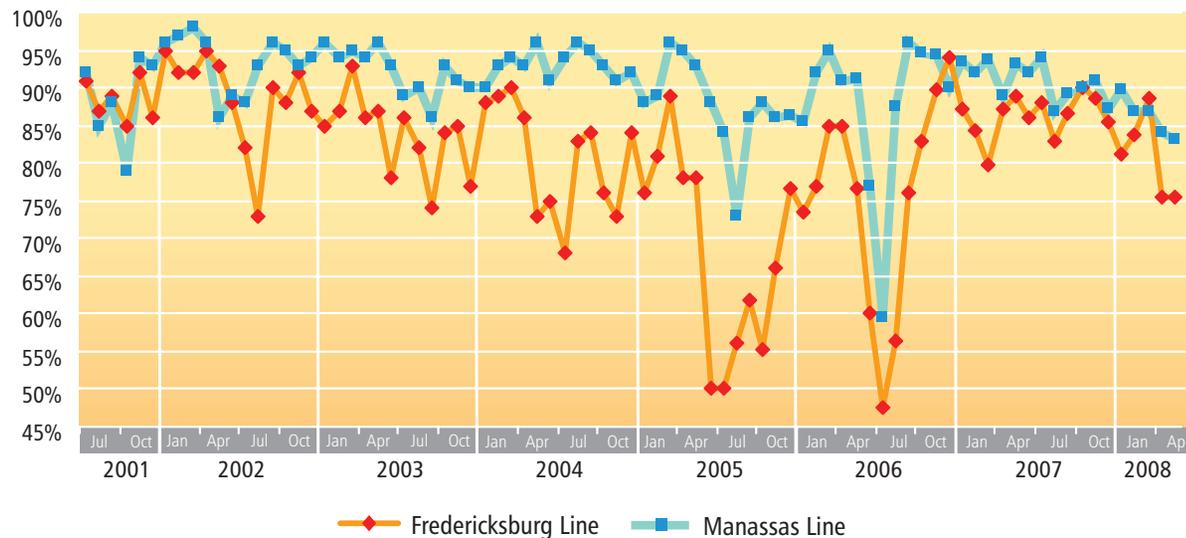


Figure 3-19

VRE ON-TIME PERFORMANCE, JULY 2001 – MAY 2008



lines, covering 90 route miles and serving 18 stations in eight Northern Virginia jurisdictions. From 2005 to 2007, VRE experienced some declines in ridership due to lowered on-time performance brought about by equipment breakdowns, train traffic congestion, heat and other weather delays. Increasing fares and service cutbacks also impacted VRE ridership during this three-year period. The summer of 2006 marked the worst extended on-time performance in the history of VRE. *Figure 3-19* illustrates on time performance trends while *Figure 3-20* illustrates delay causes for FY2007.

VRE’s improved performance today can be attributed in part to investments made by the Commonwealth that provided funding for projects to add capacity and improve operational efficiency in VRE’s I-95 corridor service area. These improvements, totaling \$77.45 million of state funding, supported the costs of adding a third track, improving signals and building a new bridge over Quantico Creek. In exchange for these investments, the Commonwealth was able to secure four round trip train slots to operate expanded passenger rail service. In addition, CSX performed significant rail infrastructure improvements, including the replacement of over 80,000 ties, several miles of rail, and re-ballasting the track. On-time performance was improved by mitigating heat related slow orders, as required by the Commonwealth, and increased capacity. This resulted in zero heat related slow orders for August 2008. For future projects, CSX and DRPT will design improvements to minimize heat related delays on improved or new track sections. Additional information regarding the past problems of heat

Figure 3-20
VRE CAUSES OF DELAY

- ⚡ Amtrak Trains
- ⚡ Freight Trains
- ⚡ VRE Trains
- ⚡ Mechanical
- ⚡ Late Turns
- ⚡ Passengers
- ⚡ Weather
- ⚡ Crew
- ⚡ Other
- ⚡ Signal and Switch
- ⚡ Slow Orders/Restricted Speeds/Stop Signals
- ⚡ Maintenance of Way

restrictions and the resolution of those problems is set out in a Technical Memorandum available from DRPT. The Commonwealth has also allocated \$20 million for the purchase of 50 VRE railcars and \$15 million for the purchase new locomotives.

VRE commuter trains are operated by Amtrak.

The Business of Freight Railroads Railroads' Capital Investment

U.S. railroads are private corporations that own their rail rights-of-way, including the tracks. These companies are large, publicly traded companies with a fiduciary responsibility to conduct their business in a manner that maximizes shareholder returns. To develop effective public private partnerships, DRPT and the railroads work together to create win-win situations where the railroads can meet their responsibility to minimize risk and maximize profit for their shareholders, the public need for effective and efficient passenger rail service is met, and freight is diverted from trucks to rail on crowded

highways. Due to the highly competitive industry, some railroad operations data is proprietary information and is not shared with the public when developing these projects.

Norfolk Southern and CSX operate in many states other than Virginia and their corporate decisions on which rail improvement projects are to be financed within any particular year are based on the best interests of the respective railroads after considering the business climate, risk and return on investment. Rail projects that are important to the Commonwealth compete with projects in other states.



Double-stack containers literally double the capacity of freight trains, delivering twice the amount of freight on just one train and removing an average of 200 trucks at a time from highways.

Passenger Rail Service on Property Owned by Freight Railroads

The position of the freight industry with respect to passenger rail service has been clear and consistent:

- Passenger rail service must be complementary to, not in conflict with, freight rail development.
- Freight railroads should be fully compensated for the use of their property by passenger trains.
- Absent voluntary negotiated agreements, freight railroads should not be forced to give passenger rail operators access to their property.
- Freight railroads should not be expected to subsidize passenger rail.
- Freight railroads do not want exposure to any liability associated with passenger rail service. At a minimum, freight railroads expect some enforceable limits on liability. Without such limits set at a policy level by the federal government, liability issues will remain a major obstacle in the growth of passenger rail service.

The nation's privately-owned freight railroads want passenger rail to succeed, and at present, freight railroads are successful partners with passenger rail operators across the country, including Virginia. Amtrak is the only continental U.S. intercity passenger railroad. Approximately 97 percent of the 22,000 miles of track over which Amtrak currently operates is owned by freight railroads. Many new passenger rail routes are being considered in Virginia and throughout the nation to relieve highway traffic congestion, improve travel mobility and protect the environment; most of these are on tracks owned by freight railroads.

In 1970, for permission to exit the passenger rail business, freight railroads agreed to a number of Amtrak terms:

- Freight railroads must give Amtrak access to their tracks upon request.
- Freight railroads must charge heavily discounted rates for that access.
- Freight railroads must give Amtrak trains priority over all other trains.

Amtrak pays fees to freight railroads to cover some of the costs associated with Amtrak corridor and long-distance intercity passenger rail operations on freight tracks, but according to the freight industry, these do not come close to the full costs incurred by freight railroads for hosting Amtrak trains. However, passenger rail runs at higher speeds on rigorous schedules and requires certain track standards and designs to do so. Freight rail benefits because a higher grade track enables them to run their trains at higher speeds and on even better schedules. These tighter schedules improve the freight railroads' ability to operate intermodal freight service.

Based on Association of American Railroads (AAR) data, the issue of full compensation has become more important in recent years as rail capacity has become increasingly constrained. When Amtrak was created in 1970, there were few passenger trains providing corridor services. Since then, average freight rail density has increased 379 percent, with the result that available train "slots" on major rail corridors have become scarce. If passenger trains fill these slots at below-market prices, the result is a

major subsidy from freight to passenger rail. If slots are not available to freight trains, this also limits the ability of freight railroads to serve those areas.

Freight railroads are not required to allow commuter rail operators like VRE to operate over their rail lines. Lacking Amtrak's statutory rights of access to freight railroads, commuter railroads must negotiate with freight railroads. These negotiations often are very difficult because commuter rail is typically operated in larger metropolitan areas along corridors where intermodal trains and other high priority scheduled freight trains also operate. The freight railroads' key negotiation requirement is the provision of sufficient capacity to support the desire for new and/or expanded commuter rail service.

Commuter rail operators have learned that capacity is just one of the issues that needs to be negotiated with the rail line owner. Issues related to passenger priority, slow orders on the railroad and maintenance needs and practices also impact the ability to provide efficient commuter rail service. The current VRE operating agreement that allowed VRE access to CSX rail lines requires the replacement of track capacity through the addition of a third track between Fredericksburg and Washington, DC. This requirement must be fulfilled to generate the additional train capacity necessary to operate increased commuter rail service in the corridor. Since VRE's inception in 1992, VRE and its funding partners have invested over \$100 million toward capital improvements associated with the third track requirement. Improvements to-date will be dwarfed by future costs for improvements associated with major bridges such as the Potomac

River, Aquia Creek, Powell's Creek, Neabsco Creek, the Rappahannock River and the Occoquan River.

While all commuter rail operators share their rail lines with freight railroads to different degrees, they have the option to avoid negotiations with freight railroads by electing to acquire dedicated rights-of-way and facilities to support commuter rail service. However, commuter rail operators have not chosen this option due to land use considerations, efficiency and cost. From a land use perspective, in dense metropolitan areas it would be nearly impossible to acquire the land needed to support rail right-of-way — consider the difficulty of acquiring right-of-way for a new line or interstate through Hampton Roads, Richmond and the Northern Virginia regions. It would also be inefficient to have a dedicated right-of-way for most commuter rail operations since these are typically designed and operated to accommodate peak hour travel only. Finally, the cost of acquiring right-of-way in metropolitan regions is expensive, ranging from \$32 - \$95 per square foot in Northern Virginia and \$0.75 - \$1.50 per square foot in agricultural areas, based on VDOT right-of-way costs. Together with the expense of constructing rail (ranging from \$5 to \$6 million per mile), the cost is prohibitive to construct dedicated commuter rail infrastructure.

Preemptive Rights: The Railroad's Right to Build Facilities

Class I railroads are regulated by the Surface Transportation Board, not by local or state governments. The ICC Termination Act of 1995 shields freight railroad operations and facilities from the application of most state and local laws. This is

known as the federal preemption provision and is contained in 49 U.S.C. 10501(b). While railroads can be required to comply with some local health and safety rules, such as fire and electrical codes, this provision exempts freight railroads from local land use and zoning requirements. Preemptive rights, however, do not exempt freight railroads from certain federal environmental statutes, such as the Clean Air Act (locomotive emissions) and the Clean Water Act (e.g., wetlands protection).

Projects that utilize federal funds must be in compliance with appropriate National Environmental Policy Act (NEPA) requirements as administered by the Federal Railroad Administration (FRA), the Federal Transit Administration (FTA) and/or the Federal Highway Administration (FHWA). Since most rail improvement projects are within existing rights of way with minimal environmental impacts, the majority of rail projects qualify for a "Categorical Exclusion" in accordance with federal NEPA requirements and regulations. In situations where the anticipated environmental impacts might be moderate, FRA and/or FHWA may require the preparation of an "Environmental Assessment"; or for large projects with portions of the project outside existing rail rights of way and where the anticipated environmental impacts might be significant, an "Environmental Impact Statement" may be required. The preemptive rights of freight railroads exempt them from local land use and zoning requirements. However, these rights do not exempt the freight railroads from these environmental requirements.

Indemnification

It is standard practice for freight railroads to request indemnification and hold harmless contractual language in their access or operating agreements with public entities related to accidents or incidents that occur as a result of allowing passenger rail operations on freight rail. The request to be indemnified and held harmless is often broad and includes coverage for events that are attributable to gross negligence or unsafe practices by the host railroad. This language is problematic for special transportation districts and can be a deal breaker for state governments that are unwilling to waive sovereign immunity. Typically, a state requires action by its legislature before allowing a state agency to enter into an agreement that holds a private company harmless from liability for damages, loss or injuries caused by the sole or joint negligence of the private company.

The cost for insurance for public entities that enter into these agreements is typically very expensive, especially in the early years of operation, since there is insufficient accident information for an insurance carrier to assess risk. The request for indemnification has been exacerbated by concerns associated with acts of terrorism, for example. VRE has experienced significant increases in insurance premiums since 2001. Its insurance premium has increased by 86 percent since 2001 and totals approximately \$3.9 million (FY2008) annually, representing 6.6 percent of its FY2008 operating budget.

High Speed Rail

Background

In the late 19th and early 20th centuries, passenger rail was the major form of mass transportation. Rail companies in the U.S. and Europe used streamlined trains from the early 1930's for high speed services with an average speed of up to 80 mph and top speeds of more than 100 mph. With this service they were able to compete with airline travel at that time.

Following World War II, significant improvements to automobiles and aircraft placed personal transport within the means of most Americans. With severe antitrust restrictions on railroads and with government subsidization of interstate highways and airports, automobile travel surged and passenger rail travel experienced a significant decline. In Europe and Japan, emphasis was given to rebuilding the railways after WWII, whereas in the U.S., emphasis was given to building a vast national interstate highway system and airports. Urban mass transport systems in the United States were largely abandoned in favor of road expansion. Compared to Europe and Japan, U.S. passenger rail services have been less competitive partly because the federal government has tended to encourage and fund road and air transportation. But today — as population grows and population density increases in major urban corridors, as highway and airline congestion increase and as energy costs increase — passenger rail ridership is increasing across the country.

It is instructive to compare U.S. passenger and freight rail service with other major countries in the world. For other developed nations of the world, there is significantly more passenger rail ridership on rail lines than freight. Inversely, for the United States, there is significantly more freight hauled by rail than passenger rail ridership. India has one of the highest

uses of passenger rail (251 billion passenger-miles) and among the lowest usage of freight rail (175 billion ton-miles per year). The opposite is true for the U.S., where passenger rail use is low when compared with developed countries (six billion miles per year) but freight rail usage is the highest in the world (1,390 billion ton-miles per year).



High speed rail service offer travelers a competitive choice to air travel with lower ticket costs and a 90 mile-per-hour trip to their destinations.

High speed rail is primarily a type of passenger rail service that operates significantly faster than the normal speed of rail traffic. In the U.S., the FRA has established a threshold of 90 mph for high speed rail, whereas in Europe the threshold has been set at 124 mph. There are no single standards and lower speeds are often required even on a high speed corridor due to local constraints.

The world's first high speed rail service occurred in Japan, in 1964 with trains speeds of approximately 125 mph on the Tokyo–Nagoya– Kyoto–Osaka route. In Europe, the first high speed rail was Italy's 125 mph service in 1969. The only high speed rail service at present in the U.S. is Amtrak's Acela Express, which operates in the Northeast Corridor between Boston, MA, New York City and Washington, DC; it uses tilting trains to achieve speeds of up to 150 mph on existing tracks. While high speed rail is designed mainly for passenger travel, it also offers possibilities for freight service such as mail, overnight deliveries and other types of cargo.

High speed rail tracks must have high-turn radii, be welded together and be extremely well-supported and anchored to avoid vibrations and other damage. The track itself in most cases is uninterrupted, with roads and other tracks crossing over bridges. Although most existing forms of high speed rail are electrically driven via overhead cables, other forms of propulsion, such as diesel locomotives, may be used – particularly the new generation of environmentally friendly and fuel-efficient diesel-electric locomotives. Magnetic

levitation (maglev) trains are considered high speed rail; however, due to their unique track-oriented vehicles and their inability to operate on conventional railroads, they are usually considered a separate type of high speed transport system.

In 2002, the FRA designated 10 high speed corridors under Section 1010 of the Intermodal Surface Transportation Act of 1991 (ISTEA) and Section 1103(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. This designation allows a corridor to receive specially targeted funding for highway-rail grade crossing safety improvements and recognizes the corridor as a potential center of high speed rail activity. These designated corridors are shown in *Figure 3-21*. They include a high speed rail corridor from Washington, DC to Richmond and the Southeast High Speed Rail Corridor between Richmond and Charlotte, NC and a spur east from Richmond to Hampton Roads.

According to FRA, a number of states are planning high speed rail systems and making the necessary improvements. The technologies these states are planning to use typically involve upgrades of existing rail lines, rather than entirely new rail lines exclusively devoted to 150 to 200 mph trains. Amtrak has also offered to operate "Acela Regional" type service in other state-sponsored corridors if funds are made available for the necessary capital upgrades. In addition to upgrading a number of rail lines, California has prepared a business plan to construct a 200 or 300 mph system.

High Speed Rail in Virginia

Fast, efficient passenger rail service is important for Virginia. The Commonwealth has initiated studies and preliminary design associated with high speed rail corridors passing through Virginia and has participated in multi-state coalitions to examine improvements for passenger rail service in the mid-Atlantic region. Due to the high capital cost associated with high speed rail systems, the Commonwealth has been following an incremental approach in past years to construct rail improvements that eliminate key rail chokepoints and to increase rail speeds and on-time performance on existing passenger rail corridors – particularly the I-95 and I-81 corridors. Virginia, like all states, has been awaiting federal legislation that would provide a national policy and funding framework (similar to the development of the interstate and airport system) to allow high speed passenger rail services to become a reality in Virginia in the not-to-distant future. Bordering Virginia from Washington, DC to the north is Amtrak's 165 mph high speed Northeast Corridor. The Northeast Corridor has recently been extended northward from New York City to Boston, MA. This extension has proven that high speed passenger rail in the United States is a new stakeholder in the growth of America's surface transportation system. Key considerations for high speed rail will be available funding and the development of capacity to support increased freight flows and safe operations.

The I-95 corridor has been identified as a priority corridor for high speed rail. The Southeast High Speed Rail (SEHSR) corridor would extend high



Rail safety is a top priority in Virginia. DRPT works cooperatively with VDOT to provide safer at-grade highway/rail crossings.

speed rail service south from Washington, DC, to Richmond and on to Raleigh and Charlotte, NC. The SEHSR corridor would later expand further south from Charlotte, NC to New Orleans, LA via Atlanta, GA and from Raleigh, NC to Jacksonville, FL and east from Richmond to Hampton Roads. DRPT and the North

Carolina Department of Transportation have joined forces to support the planning and engineering of this project in Virginia and North Carolina.

The project length is approximately 168 miles, of which 99 miles are in Virginia. The capital cost of

implementing the SEHSR will likely be a multi-billion dollar project. The Tier I Environmental Impact Study (EIS) of SEHSR identified the preferred alternative and included potential ridership and operating costs. While the Tier I EIS ridership and revenue forecasts are overall positive, DRPT will take a more

conservative approach in estimating ridership and revenue as the project progresses through the planning and engineering process. The next phase of the EIS preparation is currently underway and includes preliminary design of the system. This should be completed by 2011 at which time final design and construction could be initiated.

In addition to the SEHSR Tier I EIS, DRPT is working to select the corridor's route alignment between Richmond's Main Street Station and Doswell. The

actual route selection was not made in the SEHSR Tier I EIS and FRA requires environmental documentation to select one of the two route options in order to continue through the federal planning process. Analysis to select the high speed rail route between Main St. Station and Doswell compares the Eastern route along the Buckingham Branch line and the Western route along the CSX line sections. This analysis is scheduled for completion in summer 2009.

Rail Safety

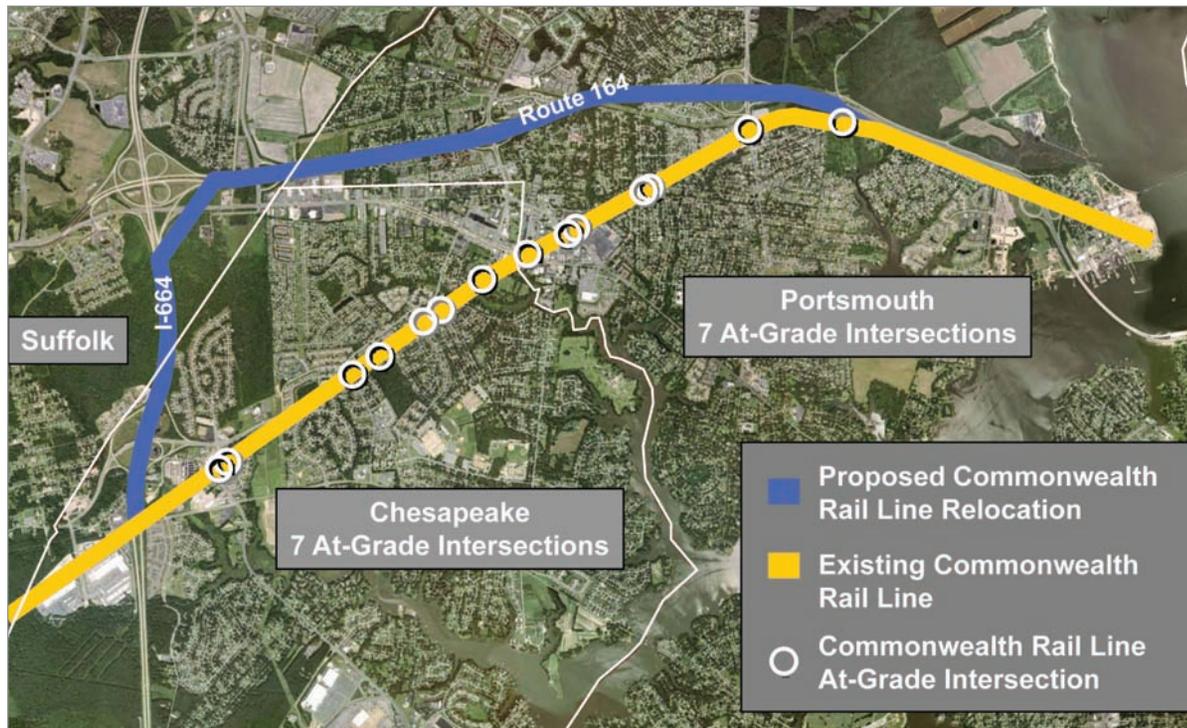
Highway-rail grade crossing safety is a critical rail safety issue. According to AAR, from 1980 through 2007 the number of grade crossing incidents fell 74 percent, while the grade crossing incident rate (incidents per million train-miles) fell 77 percent. Based on accident data, 2007 was the safest year ever in terms of grade crossing safety.

AAR estimates that there are approximately 145,000 public grade crossings in the U.S. and that improving grade crossing safety represents an enormous challenge that will take the combined efforts of railroads; state, local and federal governments; public safety officials; and the public. A freight train moving at 55 miles per hour can take a mile or more to stop. According to a June 2004 report issued by USDOT's Inspector General, 94 percent of all grade crossing accidents are caused by risky driver behavior and about half of all grade crossing accidents occur at crossings that are already equipped with active warning devices such as bells, gates and lights.

- National: At the national level there were 2,728 collisions, 986 injuries and 330 fatalities associated with highway-rail grade crossings. There were 393 injuries and 486 fatalities associated with trespassers on railroad rights of way.
- Virginia: Within the Commonwealth, there were 64 injuries and no fatalities associated with highway-rail grade crossings. There were six injuries and five fatalities associated with trespassers on railroad rights of way.

Figure 3-22

COMMONWEALTH RAILWAY MAINLINE SAFETY RELOCATION



In Virginia, DRPT and VDOT have responsibilities involving grade crossing safety. VDOT administers the Federal Section 130 Grade Crossing Safety Funds, but often DRPT Rail Preservation Funds are used to improve grade crossings as part of a series of improvements in a stretch of shortline railroad. The Commonwealth through VDOT has received approximately \$6.7 million in federal funds under Section 1103(f) since 1993 for its portion of the designated Southeast High-Speed Corridor. These funds have been used to install lights, gates and constant warning time devices at 36 crossings, construct a pedestrian overpass over the high speed corridor in Prince William County and support design and construction of three grade separations completed with Section 148 funds.

Under the FHWA Section 148 Highway Safety Improvement Program (HSIP), the Commonwealth receives \$4.4 million per year for highway-rail grade crossing safety projects. These Section 148 funds are not restricted to passenger rail lines, but can be used for freight rail crossings as well. By designating additional federal safety funds for railroads, VDOT has been able to complete between 15 and 40 projects per year. Support is also provided for grade separations that will be paid for by other funds. Closures of existing at-grade crossings are made where possible under this funding program.

A recent rail safety project example is the Commonwealth Railway Mainline Safety Relocation project currently under construction and scheduled for completion by the end of 2009. The project consists of relocating approximately 4.5 miles of

existing shortline rail tracks (Commonwealth Railway) to the median of the Western Freeway (Route 164 and I-664) through Portsmouth, Chesapeake and Suffolk. In the early 1980s, both roadways were built to accommodate a dual set of rail tracks within their medians. This rail-ready corridor will be used to serve both the planned Craney Island Marine Terminal and the Maersk APM Terminal. Rail traffic from these two facilities is expected to exceed one million TEUs annually. As shown in *Figure 3-22*, relocation of the existing rail line to the Route 164/I-664 Median Rail-Ready Corridor will:

- Move the rail line away from densely populated areas of Chesapeake and Portsmouth to a secure, guard-rail protected rail corridor away from pedestrian and motorist traffic.
- Eliminate the potential for rail-related accidents at the 14 at-grade crossings currently used by motorists and pedestrians.
- Limit the noise levels and pollution emissions from automobiles idling at railroad crossings as well as from trains passing through the neighborhoods in the vicinity of the existing lines.
- Divert containerized cargo traffic away from regional highways, thereby reducing highway congestion and improving highway safety.

As the number and frequency of trains continue to increase in Virginia, concern has been raised by municipalities and communities where past land use decisions have allowed residential neighborhoods to be built near mainline rail tracks and where the

crossing of rail tracks by automobiles is an accepted practice to access highways.

A recent study by the Hampton Roads Planning District Commission identified a number of at-grade crossings in the Suffolk area where communities have been adversely impacted by the increase in the number of trains carrying coal and intermodal cargo. Where significant impacts occur, VDOT serves as the Commonwealth's agency with the responsibility to evaluate the need for crossing improvements or the elimination of the crossing by constructing a grade separating bridge to carry the highway over the existing rail tracks.

Chapter 4

Potential Improvements to the Rail System

Based on current conditions and anticipated trends, this chapter presents potential rail investments in the Commonwealth. They are presented in four categories:

- Class I and Shortline Railroad Improvements, including the Norfolk Southern Heartland Corridor and CSX National Gateway Corridor
- Rail Improvements to Virginia Ports
- Passenger Rail Improvements for VRE and Amtrak
- Southeast High-Speed Rail



A huge surge in demand for coal is benefiting Virginia's economy.

Figure 4-1
POTENTIAL RAIL INVESTMENT LOCATIONS

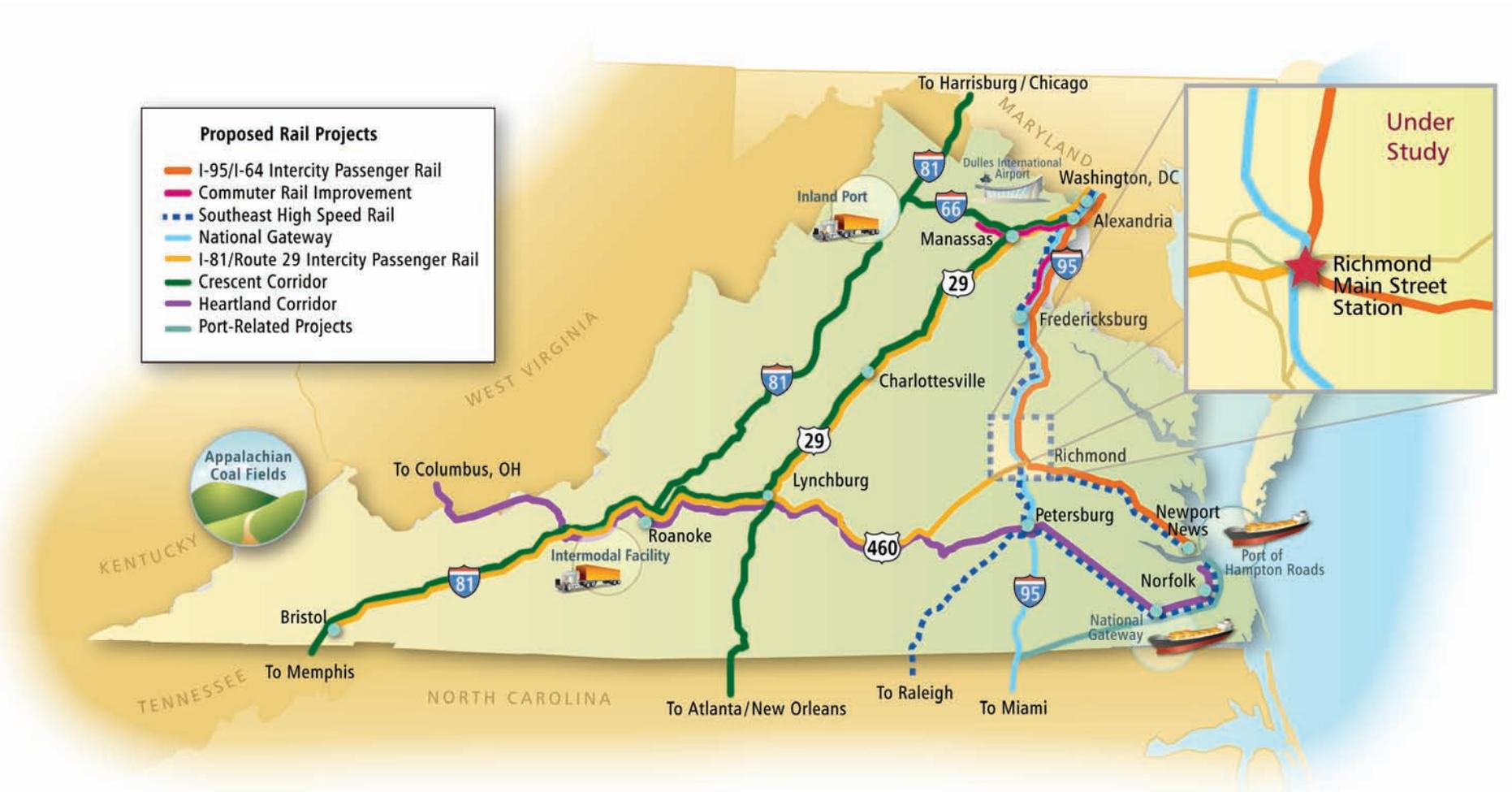


Figure 4-1 shows the location of these improvements throughout the Commonwealth.

All improvements address one or more of the following:

- Reducing passenger car and truck freight traffic to alleviate highway congestion, reduce energy demands and reduce pollutants
- Increasing freight capacity throughout the Commonwealth to support greater demand for freight rail shipping, growth in the coal industry and improved capacity at Virginia's ports
- Improving passenger rail by enhancing system performance and adding capacity

The total rail needs identified also provide the foundation for a six year funding plan, which in turn supports the long-range vision for rail in Virginia through the 2035 planning horizon.

Methodology

Rail improvement needs have been identified by the Commonwealth through previous and ongoing major investment studies, including:

- I-95 Corridor Coalition: Mid-Atlantic Rail Operations Study - MAROPS Phase I (2002)
- Southeast High Speed Rail Corridor – Tier I Environmental Impact Statement (2002)
- The Northeast – Southwest – Midwest Corridor Marketing Study (2003)
- Governor's Commission on Rail Enhancement for the 21st Century Report (2004)

- Washington, DC to Richmond Third Track Feasibility Study (2006)
- TransDominion Express (TDX) Update Report (2007)
- I-81 Corridor Improvement Study Tier I Final Environmental Impact Statement (2007)
- Roanoke Region Intermodal Facility Summary Report (2008)
- Shortline Improvement Program (2008)
- Opportunities for Truck to Rail Diversion in Virginia's I-81 Corridor (Ongoing)
- Southeast High Speed Rail Corridor Tier II EIS (Ongoing)
- Richmond/Hampton Roads Passenger Rail Tier I Environmental Impact Statement (Ongoing)
- Richmond Area Rail Improvement Project environmental documentation (Ongoing)
- I-95 Corridor Coalition: Mid-Atlantic Rail Operations Study - MAROPS Phase II (Ongoing)

Summaries of the above reports and studies are available on the DRPT website at <http://www.drpt.virginia.gov>. Also reviewed were strategic plans developed by the Virginia Port Authority, Amtrak, VRE, the Heartland Corridor Initiative and DRPT's Public Transportation and Transportation Demand Management (TDM) plans. The freight railroads are private, for-profit businesses and, in accordance with federal policies concerning competitiveness, do not release certain information. The Statewide Rail Plan provides general information about Class I freight rail improvement projects.

Project cost estimates for Norfolk Southern and CSX have been provided by the respective railroads and are being evaluated by the Commonwealth.

In the case of shortline railroads, DRPT assisted in the development of cost estimates for future capital needs and projects. For passenger rail projects, DRPT and North Carolina are conducting separate but coordinated detailed planning and engineering analysis that, while not yet complete, provides the best estimate of costs to date.

Due to market uncertainties and significant recent cost increases associated with railroad construction, these are conservative cost estimates. It is the Commonwealth's standard practice to execute project agreements with the railroads that allocate 100 percent of the risk of cost escalation to the private sector in delivering capital projects. Any rail project that receives public funding from the Commonwealth must represent the best value for the taxpayer's dollar and procurement of design and construction services must be in accordance with Commonwealth policies. This requires the bidding of construction contracts to insure competitiveness and opportunities for small, woman and minority owned businesses (SWaM) to participate.

These improvements are those projects within identified transportation corridors that will increase the freight shipments to and from ports, improve commuter and intercity rail within regions of the Commonwealth and other freight improvement projects identified by Class I and shortline railroads in Virginia. The total cost for all rail transportation

Figure 4-2

RECOMMENDED PRIORITIZATION OF RAIL PROJECTS (CAPITAL COSTS ONLY)

Project and Priority	Total Cost In Millions 2008 \$	Year of Expenditure In Millions \$	Supports Moving People & Goods	Meets CTB Goals	Implements Within Proposed FY09-FY15 Plan	Includes Elements Eligible for Federal Rail Programs
I-95/I-64 Transportation Corridor	\$5,527.4					
I-95/I-64 Intercity Passenger Rail Service	3,580.7					
Phase I	215.5	222.3	●	●	●	●
Phase II	406.8	440.8	●	●	○	●
Phase III	91.0	118.7	●	●	○	●
Phase IV	231.3	310.9	●	●	○	●
Phase V	2,636.1	3545.1	●	●	○	●
Commuter Rail	303.4	340.5				
Phase I	18.2	18.7	●	●	●	●
Phase II	197.0	221.3	●	●	○	●
Phase III	88.2	100.5	●	●	○	●
Southeast High Speed Rail (SEHSR)	1,717.7	2,080.6				
Phase I	4.0	4.0	●	●	●	●
Phase II	1,601.2	1,934.1	●	●	○	●
Phase III	112.5	142.5	●	●	○	●
National Gateway	188.0	202.9				
Phase I	135.7	149.1	●	●	●	●
Phase II	5.9	6.8	●	●	○	NA
Phase III	46.4	47.0	●	●	○	NA
I-81 Transportation Corridor	\$724.8	813.5				
I-81/Route 29 Intercity Passenger Rail Service	210.6	274.1				
Phase I - Lynchburg	40.7	41.3	●	●	●	●
Phase II - Roanoke	105.9	117.2	●	●	○	●
Phase III Bristol & IV - Richmond	64.0	115.6	●	●	○	●
Crescent Corridor	514.2	539.4				
Phase I	38.0	38.0	●	●	●	●
Phase II	82.2	82.7	●	●	○	●
Phase III	394.0	418.7	●	●	○	●
Route 460 Transportation Corridor	\$27.7	28.5				
Heartland Corridor	27.7	28.5				
Phase I	18.1	18.1	●	●	●	NA
Phase II	9.6	10.4	●	●	○	NA
Port Related Projects	\$64.1	64.8				
Port of Virginia	64.1	64.8				
Ports Phase I	2.2	2.2	●	●	●	●
Ports Phase II	41.7	41.8	●	●	○	NA
Ports Phase III	20.2	20.8	●	●	○	●
TOTAL	\$6,606.5	8,168.6				

- Meets requirements or can be achieved during planning period.
 - Does not yet meet the requirements, cannot be achieved during the planning period.
- P Passenger Rail
 F Freight Rail
 C Combined

improvements is approximately \$7.06 billion using the upper end cost estimates for projects that are presented within a range. This total cost represents an average annual expense of approximately \$262 million for the 27-year period beginning 2009 through 2035. All costs are stated in 2010 dollars and include escalation to potential year of expenditure (YOE). *Figure 4-2* shows the recommended prioritization of rail projects.

The total cost estimate includes long term rail needs that contain significant public benefits associated with improving passenger rail, reducing highway congestion and fostering economic development. Some needs could be met within current state funding streams consistent with the development of the Six Year Improvement Plan. These projects represent the short-term needs identified in the Statewide Rail Resource Allocation Plan, with all or some portion of the remaining projects to be programmed into the 2035 long range plan based on public benefits and available funding. This document does not address the allocation of costs among public (federal, state, local) and private potential project partners. The allocation of costs were determined through the Six Year Improvement Plan Process and the Statewide Rail Resource Allocation Plan, published in December 2008.

I-95/I-64 Intercity Passenger Rail Project

(I-64, I-95, I-295 and Route 460) Project Cost: \$3,580.7 million [YOE: \$4,637.9 million]

Figure 4-3 is a location map of the project and Figure 4-4 shows the estimated passengers over the project timeline.

The I-95/I-64 Intercity Passenger Rail Project will:

- ❑ Enhance passenger and freight rail operations with more frequent service, capacity and travel time savings between Hampton Roads, Richmond and Washington, DC, including service to the Northeast Corridor.
- ❑ Construct or expand passenger rail stations to provide multimodal connections and encourage transit-oriented development.
- ❑ Improve passenger platforms at Richmond’s Main Street Station to accommodate long distance Amtrak trains and increase customer access.
- ❑ Provide passenger rail improvements in anticipation of high speed rail development in the Commonwealth.

Project Management

- ❑ DRPT will complete federal environmental documentation to determine the service route between Main Street Station in Richmond and Doswell for potential high-speed rail service.
- ❑ The Commonwealth, Amtrak, CSX and VRE will coordinate all project-related rail improvements and operations.
- ❑ The project will be managed through a public-private partnership between the Commonwealth, CSX, Amtrak and federal partners.

Annual Benefits



Removes over 1.15 million cars from Virginia highways



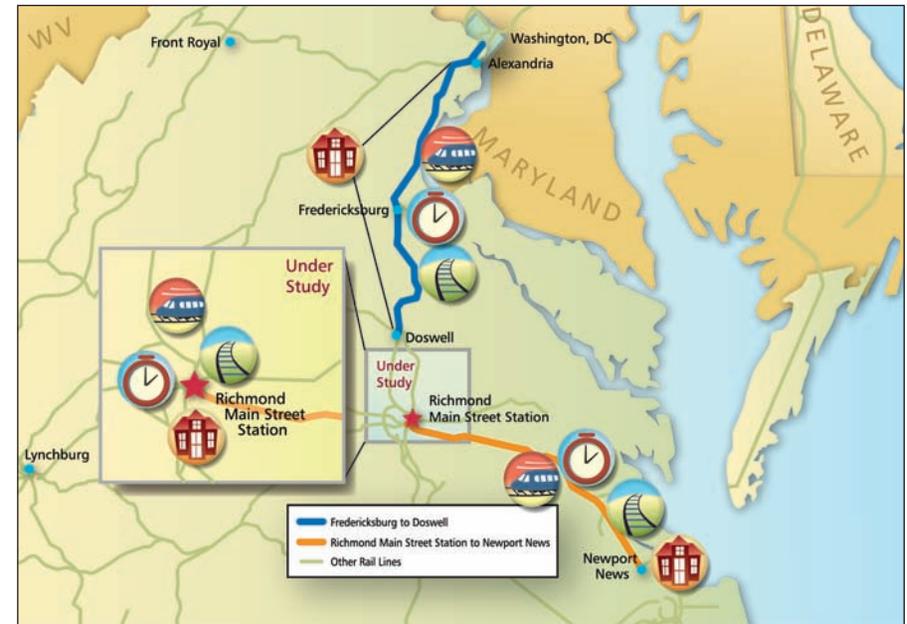
Saves over 6.3 million gallons of fuel



Saves 51 thousand tons of CO2 emissions

Figure 4-3

I-95/I-64 INTERCITY PASSENGER RAIL PROJECT LOCATION MAP



Increased Frequency or Speed



Increased Track Capacity



Improved Reliability



Station & Facilities Improvements

KEY FACTS

- The I-95/I-64 transportation corridor connects major Virginia population and employment centers and contributes significantly to the Commonwealth's economy.
- This project will provide highway congestion relief and increase transportation choices through freight and passenger rail improvements between Washington, DC, Richmond and Newport News.
- With the vast majority of the state's population and employment centers along this corridor, the I-95/I-64 Intercity Passenger Rail Project presents the best ridership opportunity for increasing rail ridership in the Commonwealth.
- Annual Amtrak ridership in this corridor totaled 531,000 in 2007. This project could increase ridership by a minimum of more than 80 percent (980,700) up to more than 110 percent (1,130,400) in seven years (2015). By 2030, ridership could increase to between 1,570,100 and 1,817,600 passengers per year.

Project Phasing

Phase I- (Completed by 2015)

Capacity/Station Improvements

\$215.5 M [YOE: \$222.3 M] total project cost (\$152.7 M state)*

- One new daily round trip train from Richmond to Washington, DC as a demonstration project for three years beginning in FY2010, station improvements at Staples Mill Station and the rehabilitation of one train set.
- Design and construction of capacity improvements from Washington, DC to Richmond and Newport News, including third main track sections and enhancements to increase on-time performance.
- Completion of environmental study to select the route for future high speed passenger trains between Richmond and Doswell, as required in the federal planning process.

Phase II

Regional Trains to Newport News

\$406.8 M [YOE: \$440.8 M] total project cost (unfunded)*

- Complete capacity improvements from Phase I and extend three regional trains from Staples Mill Station to Newport News for a total of five daily trains to serve Newport News, Richmond and Washington, DC. Enhance passenger rail stations.

Phase III

Additional Trains/Rolling Stock

\$91 M [YOE: \$118.7 M] total project cost (unfunded)*

- Four additional trains with half-hour service between Newport News, Richmond and Washington, DC for a total of nine daily trains.

Phase IV

Reroute Long Distance Trains

\$231.3 M [YOE: \$310.9 M] total project cost (unfunded)*

- Capacity improvements between Centralia and Main Street Station to allow long distance trains to serve Main Street Station. New service to Caroline County and other station improvements.

Phase V

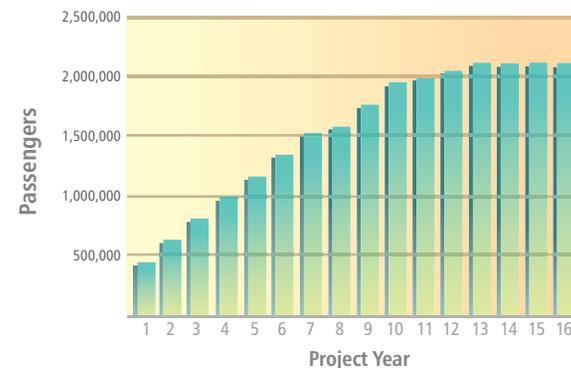
New Bridge/Track Capacity

\$2,636.1 M [YOE: \$3,545.1 M] total project cost (unfunded)

- Bridge capacity improvements between Newport News and Washington, DC, including a new Potomac River bridge.
- Connect third track sections in the I-95 corridor and second main line sections between Richmond and Newport News.

Figure 4-4

I-95/I-64 INTERCITY PASSENGER RAIL PROJECT RIDERSHIP PROJECTIONS



Project Finance

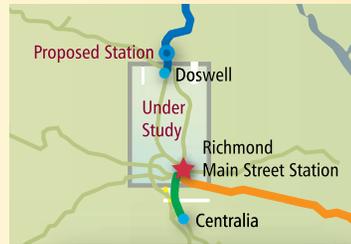
Total project cost: \$3,580.7 million (\$2010) [YOE: \$4,637.9 million]

- ❑ Proposed FY2009 – FY2015 Improvement Plan— \$215.5 M total project cost for Phase I to be completed from FY09-FY15 (\$152.7 M state).
- ❑ Phases II, III, IV and V are unfunded needs identified in the Statewide Rail Resource Allocation Plan, which are proposed for funding in future years.
- ❑ Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources.
- ❑ Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners. All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ❑ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

The I-95/I-64 Intercity Passenger Rail Project will represent a public private partnership between the Commonwealth, CSX, Amtrak, local/regional bodies and the private sector as it relates to station development.

Additional Improvements with Federal Funding



The ongoing environmental documentation must be completed to choose the high speed rail line section between Richmond and Doswell for full corridor eligibility for federal funding.

- > Capacity and reliability improvements between Richmond and Centralia
- > New equipment for Virginia regional service
- > Increased train speeds

**All marked items require operating funds in addition to the capital costs noted in this document.*

Commuter Rail Improvement Project

Project Cost: \$308.4 million [YOE: \$340.5 million]

Improvements in the Virginia Railway Express service area will:

- ⚡ Increase the on-time performance of passenger trains and upgrade the signal system.
- ⚡ Expand service and passenger stations between Manassas and Gainesville/Haymarket.
- ⚡ Construct a new station at Cherry Hill in the I-95 corridor.
- ⚡ Provide an automatic train control system to reduce potential accidents through advance warning and collision avoidance technology.
- ⚡ Add new platforms at several existing stations to increase customer access.
- ⚡ Encourage transit-oriented development.

Project Management

- ⚡ The Commonwealth, Amtrak, CSX, Norfolk Southern and VRE will coordinate all project-related rail improvements and operations.
- ⚡ The project will be managed through a public-private partnership between the Commonwealth, CSX, Norfolk Southern, VRE and federal partners.

Total VRE Annual Benefits for all projects



Removes over .6 million cars from the I-95 corridor



Saves over 2.1 million gallons of fuel



Saves 9.7 thousand tons CO2 emissions

Figure 4-5
COMMUTER RAIL IMPROVEMENT PROJECT



Increased Frequency or Speed



Increased Track Capacity



Improved Reliability



Station & Facilities Improvements

KEY FACTS

- Population growth and commuter patterns have expanded westward along the I-66 corridor and the I-95 corridor continues to grow in population and employment.
- This project will provide congestion relief and new transportation choices in both the I-95 and I-66 corridors.
- Previous investments include Rail Enhancement funding in FY2005 to conduct preliminary engineering and design for a new third main track and station at Cherry Hill in the I-95 corridor and a major investment study to determine the viability of extending service from Manassas to Gainesville/Haymarket in the I-66 corridor.
- VRE provides the equivalent capacity of one highway lane during peak travel periods.
- In 2008, VRE set numerous ridership records as the demand for commuter rail continues to grow.

Project Phasing

Phase I

Capacity/Stations (I-95/I-66)

\$18.2 M [YOE: \$18.7 M] total project cost (\$12.3 M state)

- Automatic train control and cab signals from Arlington to Washington, DC to improve safety.
- Final design of the Cherry Hill Third Track in Prince William County.
- Preliminary engineering for the service expansion from Manassas to Gainesville/Haymarket.
- Track and bridge upgrades between Alexandria and Manassas.

Phase II

Capacity/Stations (I-95/I-66 Part 2)

\$197 M [YOE: \$221.3 M] total project cost (unfunded)

- Final engineering and construction of the Cherry Hill Third Track in Prince William County.
- Station capacity and additional platform improvements.

Phase III

Capacity/Stations (I-66 Part 3)*

\$88.2 M [YOE: \$100.5 M] total project cost (unfunded)

- Construction of tracks and stations for an average of four daily trains serving Gainesville/Haymarket. Only track construction, not stations, is included.

Project Finance

*Total project cost- \$303.4 million (\$2010)
[YOE: \$340.5 million]*

- Proposed FY2009 – FY2015 Improvement Plan – \$18.2 M total project cost for Phase I to be completed from FY09-FY15 (\$12.3 M state).
- Stations for Phases II and III are unfunded needs identified in the Statewide Rail Resource Allocation Plan, which are proposed for funding in future years.
- Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental sources.
- Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners. All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

The Commuter Rail Improvement project will require a public private partnership between the federal government, the Commonwealth, CSX, NS, VRE, and the private sector as it relates to the construction of stations.

**All marked items require operating funds in addition to the capital costs noted in this document*

Southeast High Speed Rail Project

(I-95, I-295, I-85, I-64 and Route 460) Total project cost: \$1,717.8 million [YOE: \$2,080.6 million]

The Commonwealth's contributions toward the Southeast High Speed Rail Project will:

- ▣ Evaluate a high speed rail connection between Hampton Roads and Richmond's Main Street Station.
- ▣ Evaluate high speed passenger rail service on the designated high speed rail corridor from Raleigh, NC through Richmond to Washington, DC.
- ▣ Provide passengers with a more cost-effective, competitive alternative to air travel.
- ▣ Connect Virginia to the Northeast Corridor, the only active high speed rail corridor operating in North America.

Project Management

- ▣ The Commonwealth, Amtrak, CSX and Norfolk Southern will coordinate all project-related rail improvements and operations.
- ▣ The project will be managed through a public-private partnership between the Commonwealth, North Carolina, CSX, Norfolk Southern and federal partners.

Annual Benefits



Removes over 1.1 million cars from Virginia and North Carolina Highways

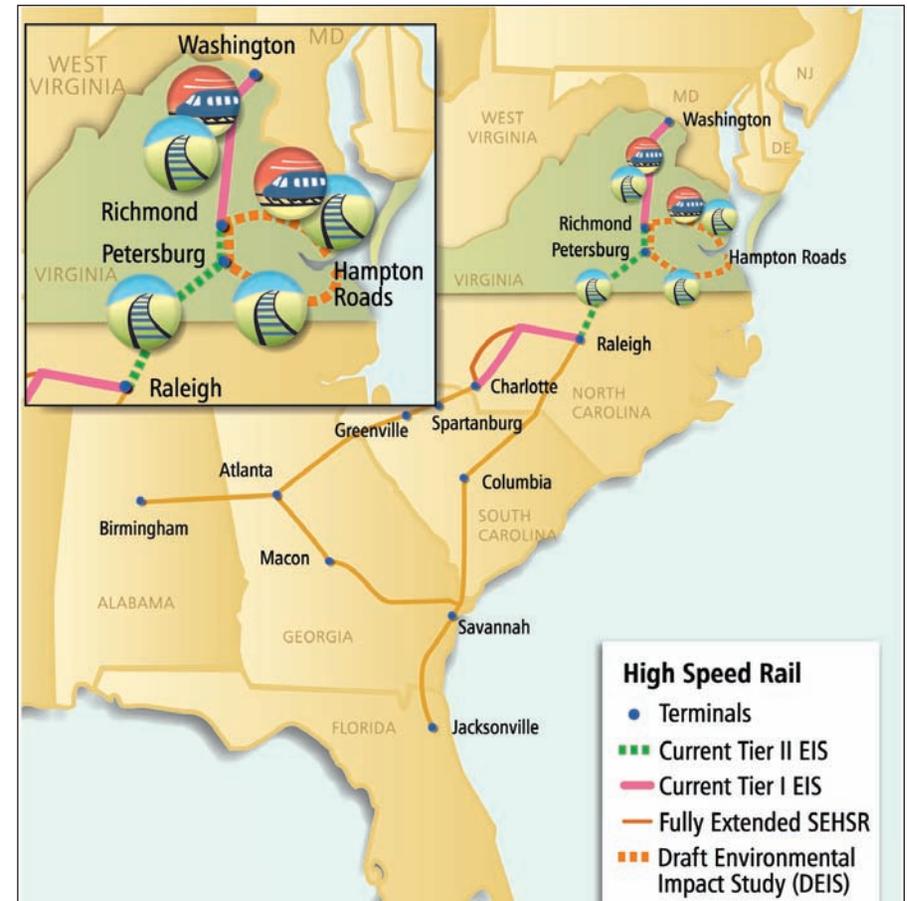


Saves over 5.6 million gallons of fuel



Saves 34 thousand tons CO2 emissions

Figure 4-6
SOUTHEAST HIGH SPEED RAIL PROJECT



KEY FACTS

- ❑ As population grows in major urban corridors, as highway and airline congestion increase and as energy costs rise, rail ridership is increasing across the U.S., creating demand for higher speed rail services.
- ❑ The I-95 corridor has been identified as a priority corridor for high speed rail in the U.S.
- ❑ The Southeast High Speed Rail corridor will extend high speed rail service south from Washington, DC to Richmond and on to Raleigh and Charlotte, NC. It will also expand east from Richmond to Hampton Roads.
- ❑ Virginia and North Carolina continue to advance high speed rail in the Southeast High Speed Rail corridor. In October 2002, the Tier I Environmental Impact Statement (EIS) was completed from Washington, DC to Charlotte, NC. In December 2005 Virginia and North Carolina began the Tier II EIS through the allocation of Virginia Rail Enhancement funds to extend the project work from Raleigh, NC to Richmond. As this project advances through the environmental process, additional work is necessary for the completion of the Tier II EIS for railway and associated highway improvements for the proposed 168-mile corridor between Richmond and Raleigh, NC.

Project Phasing

Phase I

Environmental Studies

\$4 M [YOE: \$4 M] total project cost (\$2.3 M state)

- ❑ Complete the Tier II Environmental Impact Statement (EIS) and seek a federal Record of Decision for railway and associated highway design in the corridor from Richmond Main Street Station to Raleigh, NC.
- ❑ Complete the Richmond/Hampton Roads Tier I Draft EIS.

Phases II and III

Construction and Improvements

*\$1,713.8 M [YOE: \$2,076.6 M] total project cost (unfunded)**

- ❑ Engineering, track construction and improvements from Washington, DC to the North Carolina state line for high speed rail service.
- ❑ The scale of improvements will be determined by segment, including: Washington, DC to Richmond, Richmond to Petersburg, Petersburg to the North Carolina state line.

Project Finance

Total project cost: \$1,717.8 million (\$2010) [YOE: \$2,080.6 million]

- ❑ Proposed FY2009 – FY2015 Improvement Plan – \$4 M total project cost for completion of Phase I from FY09-FY15 (\$2.3 M state).
- ❑ Phases II and III are unfunded needs identified in the Statewide Rail Resource Allocation Plan, which are proposed for funding in future years.
- ❑ Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources.
- ❑ Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners. All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ❑ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.
- ❑ Not included in this project cost is the funding necessary for the Richmond to Hampton Roads passenger rail service. These costs will be completed in the Richmond to Hampton Roads Tier I EIS, and are estimated at approximately between \$431.9 million to \$695.3 million in 2008 dollars.

Partnership Opportunities

The Southeast High-Speed Rail project will require a public private partnership between the Commonwealth, North Carolina, Amtrak, CSX, Norfolk Southern and Federal partners.

**All marked items require operating funds in addition to the capital costs noted in this document.*

Southeast High-Speed Rail Project Status

Task	Proposed Completion Dates
Planning and Analysis	2011
Preliminary Engineering	2011
Final Design	TBD
Construction	TBD
Operation	TBD

National Gateway Project

Total project cost: \$188 million [YOE: \$202.9million]

To improve the efficiency of freight rail shipping for the mid-Atlantic ports of Baltimore, MD, Virginia and Wilmington, NC and markets in Pennsylvania, West Virginia, Ohio and other Midwestern states, the National Gateway Project will:

- ⚡ Divert freight traffic from highway to rail and double the capacity for freight shipments in the I-95 corridor by providing double-stack clearances for freight containers.
- ⚡ Increase capacity and service reliability through Washington, DC to allow more trains to operate in this heavily congested part of the corridor.
- ⚡ Support the enhancement of VRE and Amtrak service in the I-95 corridor.
- ⚡ Add a new freight yard to support increased container traffic originating at Virginia's Ports.

Project Management

- ⚡ The Commonwealth, CSX and VRE will coordinate all project-related rail improvements and operations.
- ⚡ The project will be managed through a public-private partnership between the Commonwealth, CSX, federal partners and other states.

Annual Benefits for Virginia



Removes 260,000 trucks from I-95 corridor



Saves 32 million gallons of fuel



Saves 62 thousand tons of CO2 emissions

Figure 4-7
NATIONAL GATEWAY PROJECT



KEY FACTS

- ⚡ The multi-state National Gateway Project extends from North Carolina to Ohio and parallels I-95 through Virginia, with a connection to the Port of Virginia.
- ⚡ The diversion of freight from highway to rail will benefit from a multi-state initiative involving federal, state, local and private partners.
- ⚡ The project plan focuses on improving clearances to enable double stack intermodal train operations.

CSX National Gateway Corridor Project Development Status

Task	Proposed Completion Dates
Planning and Analysis	2008
Preliminary Engineering	2009
Final Design	2010
Construction	2013
Operation	2013

Project Phasing

Phase I

Capacity Improvements

\$135.7 M [YOE: \$149.1 M] total project cost (\$25 M state)

- ⚡ Adds corridor double stack clearance capacity by removing or modifying five bridges that obstruct the vertical clearance needed for double stack rail operations on the I-95 Corridor between the North Carolina state line and Washington, DC.
- ⚡ Environmental studies and preliminary engineering for two new highway grade-separated bridges.
- ⚡ Engineering, design and construction of the new double stack Virginia Avenue Tunnel.

Phase II

Clearance Completion

\$5.9 M [YOE: \$6.8 M] total project cost (unfunded)

- ⚡ Completes Virginia Avenue Tunnel double stack clearance and bridge clearance work.

Phase III

Freight Yard Capacity

\$46.4 M [YOE: \$47.0 M] total project cost (unfunded)

- ⚡ Additional yard capacity at Kilby Yard in Suffolk to enhance container shipping service.
- ⚡ Federal and multiple state partnerships are required to reach project objectives.

Project Finance

Total project cost: \$188 million (\$2010 dollars) [YOE: \$202.9million]

- ⚡ Proposed FY2009 – FY2015 Improvement Plan – \$135.7 M total project cost for Phase I completion from FY10-FY15 (\$25 M state).
- ⚡ Phases II and III represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- ⚡ Assuming no availability of federal funds other than those assumed by CSX, the total project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- ⚡ All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ⚡ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

The National Gateway project will require a federal, multi-state and private partnership given the project's potential benefits of supporting increased passenger and freight rail operations along the I-95 Corridor. The public benefit analysis included all of CSX's proposed projects for the multi-state initiative, including the cost of the Virginia Avenue Tunnel. In order to advance the project in Virginia, the Commonwealth and CSX will have to reach an agreement on project scope, costs and allocation of costs between partners.

I-81/Route 29 Intercity Passenger Rail Project

Total project cost: \$210.6 million [YOE: \$274.1 million]

To enhance passenger rail service along the Route 29, Interstate 81 and Route 460 corridors, the I-81/Route 29 Intercity Passenger Rail Project will:

- ⚡ Add new passenger rail service to Lynchburg, Roanoke and Bristol with connections to Richmond and Washington, DC.
- ⚡ Construct new stations to support the new service.
- ⚡ Increase capacity through new passing tracks.
- ⚡ Reduce travel time by improving rail infrastructure for higher speeds.

Project Management

- ⚡ The project will be managed through a public-private partnership between the Commonwealth, Norfolk Southern, Amtrak and federal partners.
- ⚡ The Commonwealth, Amtrak, Norfolk Southern and VRE will need to coordinate improvements and operations in the corridor.

Annual Benefits



Removes 203 thousand cars from I-81 & Rte 29 corridors



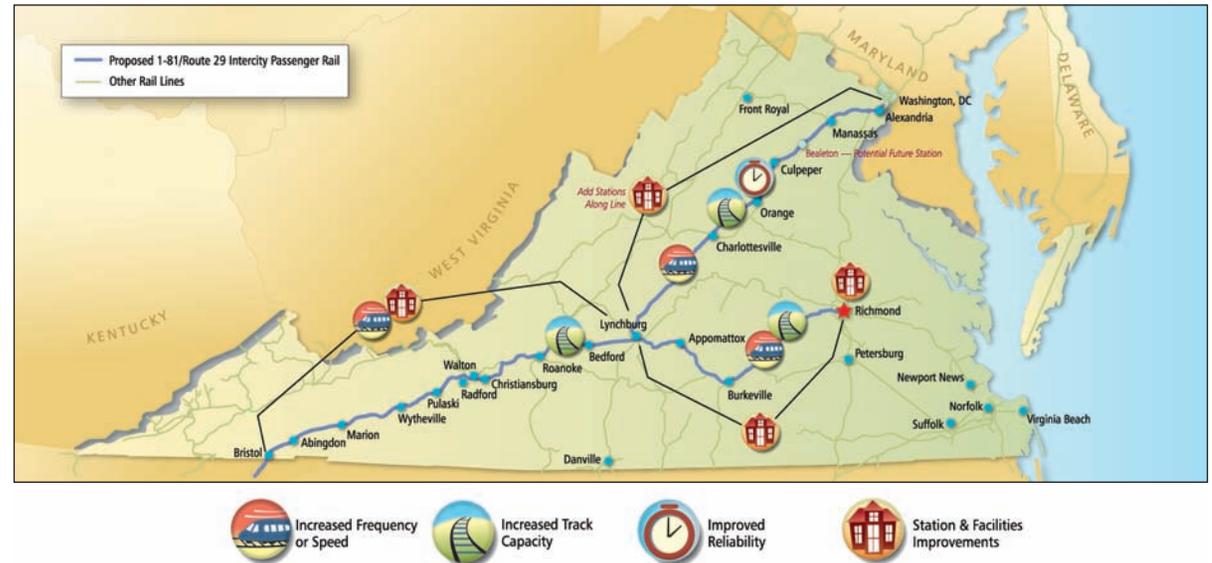
Saves 2 million gallons of fuel



Saves 15 thousand tons CO2 emissions

Figure 4-8

I-81/ROUTE 29 INTERCITY PASSENGER RAIL PROJECT



KEY FACTS

- ⚡ This project provides incremental service improvements to enhance passenger rail service in Central and Southwestern Virginia.
- ⚡ Annual Amtrak ridership in this corridor totaled 50,554 in 2007. With this new regional service, annual ridership could increase by between 185,400 and 243,500 annual passengers by 2030.

Project Phasing

Phase I

Washington, DC/Lynchburg

*\$40.7 M [YOE: \$41.3 M] total project cost (\$30.6 M state share)**

- ⚡ Add one daily train between Washington, DC and Lynchburg Kemper Street Station as a demonstration project for three years beginning in 2009.
- ⚡ Increase commuter capacity in the VRE service area.
- ⚡ Complete the capacity study for the entire project corridor from Washington, DC to Bristol and Lynchburg.
- ⚡ Increase capacity for a second train to Lynchburg with construction of second main line track between Nokesville and Calverton.

Phase II

Capacity/Stations Roanoke

*\$105.9 M [YOE: \$117.2 M] total project cost (unfunded)**

- ⚡ Add one additional train to extend service to Roanoke.
- ⚡ Increase capacity and service reliability from Lynchburg to Roanoke.
- ⚡ Improve the Roanoke Train Station and train storage facility.

Phases III and IV

Capacity/Stations Bristol/Richmond

*\$64 M [YOE: \$115.6 M] total project cost (\$45.5 M state)**

- ⚡ Add one train to Bristol from Roanoke, including one train set and capacity improvements.
- ⚡ Provide train service from Bristol to Richmond and from Bristol to Washington, DC.

Project Finance

*Total project cost: \$210.6 million (\$2010)
[YOE: \$274.1 million]*

- ⚡ Proposed FY2009 – FY2015 Improvement Plan – \$40.7 M total project cost for completion of Phase I from FY10-FY15 (\$30.6 M state).
- ⚡ Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- ⚡ Phases II, III and IV represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- ⚡ All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ⚡ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

The I-81/Route 29 Intercity Passenger Rail Project will require a public private partnership between the Commonwealth, Norfolk Southern, Amtrak and federal partners, given that this project is located within the area of freight rail projects identified by Norfolk Southern for the Heartland, Crescent and Coal corridors.

**All marked items require operating funds in addition to the capital costs noted in this document.*

Crescent Corridor Project (I-81, I-20, I-40, I-75 and I-85)

Total project cost: \$514.2 million [YOE: \$539.4 million]

To improve the efficiency of freight rail shipping and provide highway congestion relief in Virginia, the Crescent Corridor Project will:

- ⚡ Divert freight shipments from highway to rail along I-20, I-40, I-75, I-85, I-81 and Route 29.
- ⚡ Expand rail capacity.
- ⚡ Facilitate the expansion of Amtrak service to Charlottesville, Lynchburg, Roanoke and Bristol.
- ⚡ Support the enhancement of VRE service from Manassas to Gainesville/Haymarket.

Project Management

- ⚡ The Commonwealth, Norfolk Southern and the I-81 corridor states will need to coordinate resources to fully develop this project. A multi-state agreement and a federal funding partner are essential to advance this initiative.
- ⚡ The project will be managed through a public-private partnership between the Commonwealth, Norfolk Southern, federal partners and other states.

Annual Benefits for Crescent Corridor in Virginia (Phases I and II)



Removes 592 thousand trucks from the I-81 corridor by 2035



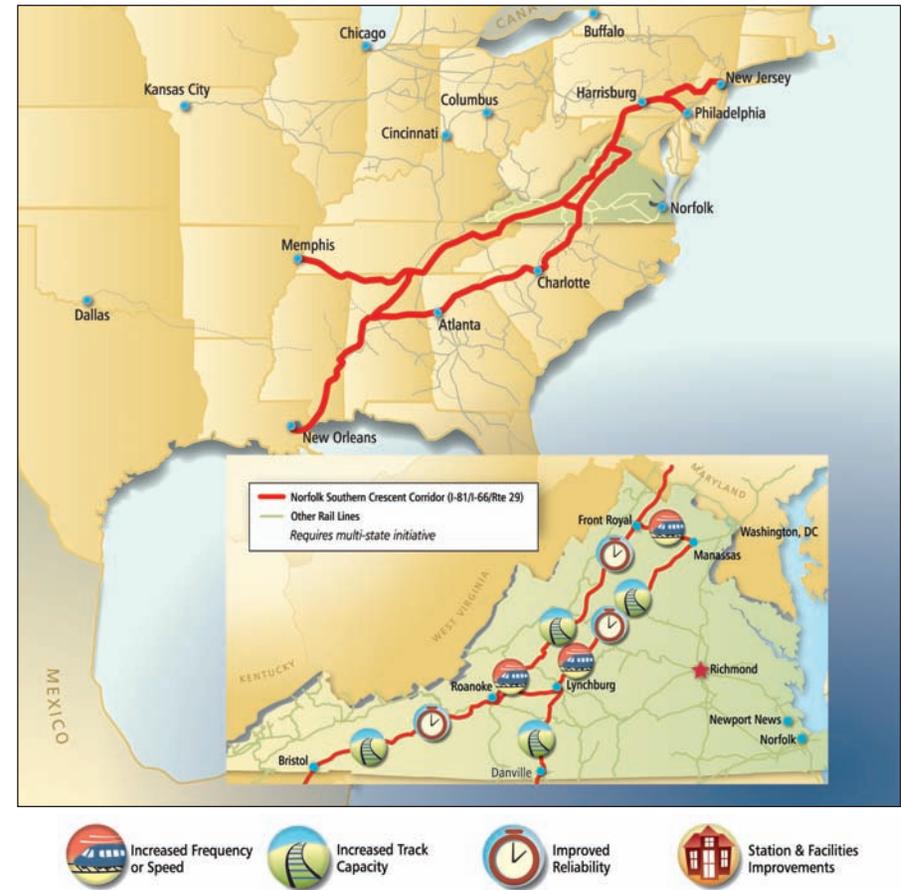
Saves over 94 million gallons of fuel



Saves 210 thousand tons of CO2 emissions

Figure 4-9

CRESCENT CORRIDOR PROJECT (I-81, I-20, I-40, I-75 AND I-85)



KEY FACTS

- ⚡ The multi-state Crescent Corridor extends from New Orleans/Memphis to New Jersey.
- ⚡ The success of truck diversion on the Crescent Corridor depends on public private partnerships with multiple states and will involve federal, state, local and private parties.
- ⚡ In Virginia, the corridor has two distinct rail lines paralleling I-81 that will be used together to increase rail capacity.

Norfolk Southern Crescent Corridor Initiative Development Status

Task	Proposed Completion Dates
Planning and Analysis	2008
Preliminary Engineering	2008
Final Design	2009
Construction	2010
Operation	2020

Project Phasing

Phase I

Priority Capacity Improvements

\$38 M [YOE: \$38 M] total project cost (\$26.6 M state)

- ⚡ Preliminary engineering and construction of the top four priority capacity projects located near Berryville, Elkton, Bentonville and Stanley.
- ⚡ Completion of Manassas to Front Royal capacity improvements.

Phase II

Secondary Capacity Improvements

\$82.2 M [YOE: \$82.7 M] total project cost (unfunded)

- ⚡ Additional capacity and reliability improvements on the Shenandoah, Piedmont, Manassas, Heartland and Bristol lines.

Phase III

Remaining Capacity Improvements

\$394 M [YOE: \$418.7 M] total project cost (unfunded)

- ⚡ Remaining capacity, train reliability, and speed improvements on the Shenandoah, Piedmont, Manassas, Heartland and Bristol lines.

Project Finance

Total project cost: \$514.2 million (\$2010) [YOE: \$539.4 million]

- ⚡ Proposed FY2009 – FY2015 Improvement Plan— \$38 M total project cost to complete Phase I from FY10-FY15 (\$26.6 M state).
- ⚡ Phases II and III represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.

- ⚡ Assuming no availability of federal funds, the project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- ⚡ All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ⚡ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

The Crescent Corridor project will represent an opportunity for a federal, multi-state and private partnership, given the project’s potential benefits of supporting increased passenger and freight operations along the I-81 corridor and other major corridors outside of Virginia. The public benefits of this project are being further defined in the I-81 Freight Rail Study analysis, to be completed in Spring 2009. The proposed projects in Virginia result in truck diversion benefits from the implementation of a multi-state freight rail initiative. The Commonwealth and Norfolk Southern will have to reach an agreement on project scope, costs and the allocation of costs between partners that will support improvements for both passenger and freight rail.

Heartland Corridor Project

Total project cost: \$27.7 million [YOE: \$28.5 million.]

To improve freight service between the Ports of Virginia and markets in the Midwest along the Route 460 and I-81 corridors, the Heartland Corridor project will:

- ❑ Complete highway access improvements needed for the Roanoke Region Intermodal Facility, a regional initiative to generate up to 2,900 jobs and up to \$71 million in tax revenues annually.
- ❑ Increase tunnel clearances to provide redundant routes on sections of the corridor that host freight and passenger operations.

Project Management

- ❑ The project will be managed through a public-private partnership between the Commonwealth, Norfolk Southern, federal partners and other states.

Phase Project Annual Benefits

(Phases I and II)



Removes 150 thousand trucks from Virginia highways



Saves 20 million gallons of fuel



Saves 32 thousand tons of CO2 emissions

Figure 4-10
HEARTLAND CORRIDOR PROJECT



KEY FACTS

- ⚡ The Heartland Corridor will double the intermodal rail capacity along Route 460 and significantly improve freight shipping between markets in the Midwest.
- ⚡ This initiative has been identified as a project of national significance.
- ⚡ Norfolk Southern, DRPT and Amtrak are exploring the possibility of new passenger service between Bristol, Lynchburg and Washington, DC along part of this corridor.

Project Phasing

Phase I

Access Improvements

\$18.1M [YOE: \$18.1 M] total project cost (\$12.7 M state)

- ⚡ Relocation of Cove Hollow Road to improve access to the facility.
- ⚡ Completes intermodal facility funding based on final selected site costs.

Phase II

Clearance Improvements

\$9.6 M [YOE: \$10.4 M] total project cost (unfunded)

- ⚡ Added corridor double stack capacity through improving the clearance of second main line Montgomery Tunnel.

Norfolk Southern Heartland Corridor Development Status - Phase I

Task	Proposed Completion Dates
Planning and Analysis	2006
Preliminary Engineering	2007
Final Design	2007
Construction	2009
Operation	2009

Norfolk Southern Heartland Corridor Development Status - Phase II

Task	Proposed Completion Dates
Planning and Analysis	2009
Preliminary Engineering	2009
Final Design	2010
Construction	2011
Operation	2012

Project Finance

Total project cost: \$27.7 million (\$2010) [YOE: \$28.5 million]

- ⚡ Proposed FY2009 – FY2015 Improvement Plan – \$18.1 million total project cost to complete Phase I from FY10-FY15 (\$12.7M state).
- ⚡ Phase II represents unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- ⚡ Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- ⚡ All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ⚡ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

A public private partnership has been executed to support Phase I of the project, which was designated as a project of national significance. Additional projects under Phase II are under review. The Commonwealth and Norfolk Southern will have to reach an agreement on project scope, costs and the allocation of costs between partners that will support improvements for both passenger and freight rail.

Port-Related Rail Improvement Project

Total project cost: \$64.1 million [YOE: \$64.8 million]

Figure 4-11

NIT CENTRAL YARD IMPROVEMENTS



Figure 4-12

NORFOLK PORTSMOUTH BELTLINE RAILROAD IMPROVEMENTS

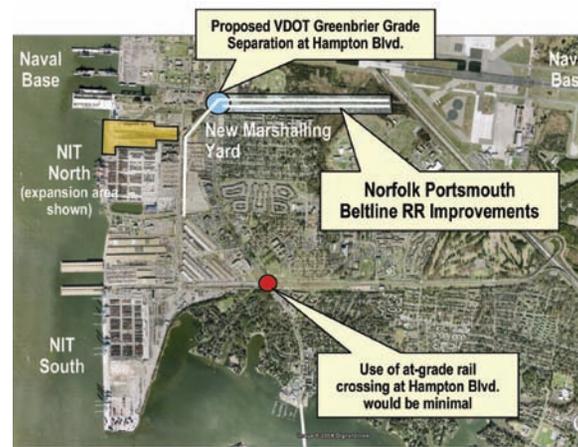
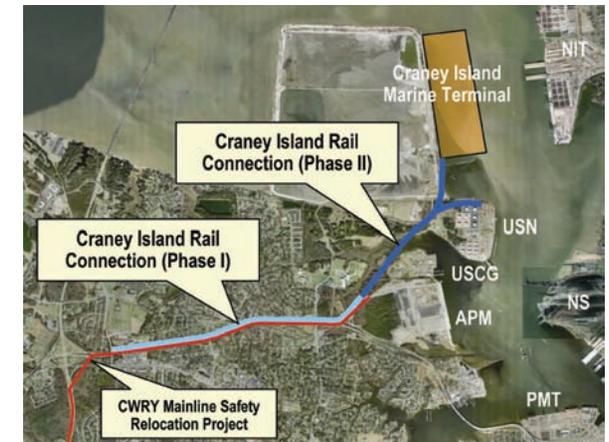


Figure 4-13

CRANEY ISLAND PROJECT IMPROVEMENTS



To improve rail capacity at the Ports of Hampton Roads, support increased freight truck to rail diversion and provide economic benefits to the Commonwealth by reducing transportation costs for both domestic and international trade, the Port-Related Rail Improvement Project will:

- ▣ Provide competitive rail access to Virginia’s ports to ensure that shippers and consumers benefit from cost-effective transportation choices.
- ▣ Relocate rail lines serving the ports to enhance safety.
- ▣ Increase container and train handling capacity to streamline freight handling.
- ▣ Increase rail capacity to allow more containers to be diverted to rail.

Project Management

- ▣ The project will be managed through a public-private partnership between the Commonwealth, the ports and the operating railroads.

Annual Benefits



Removes 180 thousand trucks from Virginia’s highways



Saves over 24 million gallons of fuel



Saves 47 thousand tons of CO2 emissions

KEY FACTS

- ⚡ The project will double the on-dock rail capacity at Norfolk International Terminals with an on-dock rail yard.
- ⚡ Additional yard capacity improvements will enhance highway grade crossing safety and reduce highway delays at grade crossings.
- ⚡ The proposed Craney Island marine terminal will transport 50 percent of the projected 1.43 million rail container activity associated with this project.

Project Phasing

Phase I

Yard Improvement Engineering

\$2.2 M [YOE: \$2.2 M] total project cost (\$0.8 M state)

- ⚡ Preliminary engineering of capacity improvements to the Norfolk International Terminals on-dock rail yard.
- ⚡ Preliminary engineering of capacity improvements to the Norfolk and Portsmouth Belt Line rail yard.

Phase II

Yard Improvement Construction

\$41.7 M [YOE: \$41.8M] total project cost (unfunded)

- ⚡ Construction of capacity improvements to the Norfolk International Terminals on-dock rail yard.
- ⚡ Construction of capacity improvements for the Norfolk and Portsmouth Belt Line yard to relocate train movements to a grade separated crossing.

Phase III

Craney Island Connector

\$20.2 M [YOE: \$20.8 M] total project cost (unfunded)

- ⚡ Additional capacity and access improvements for the Craney Island Terminal.
- ⚡ Construction of a second main line track in the median of Route 164.
- ⚡ Preliminary engineering and design of the Craney Island Rail Connector track.

NIT Central Rail Yard Expansion Development Status

Task	Proposed Completion Dates
Planning and Analysis	Complete
Preliminary Engineering	Complete
Final Design	Summer 2009
Construction	Summer 2009
Operation	Fall 2010

Craney Island Rail Connection Development Status

Task	Proposed Completion Dates
Planning and Analysis	2010
Preliminary Engineering	2010
Final Design	2011
Construction	2013
Operation	2017

Norfolk Portsmouth Belt Line Railroad Development Status

Task	Proposed Completion Dates
Planning and Analysis	Summer 2008
Preliminary Engineering	Fall 2008
Final Design	Summer 2009
Construction	Fall 2010
Operation	2011

Project Finance

Total project cost: \$64.1 million (\$2010) [YOE: \$64.8 million]

- ❑ Proposed FY2009 – FY 2015 Improvement Plan- \$2.2 M total project cost for completion of Phase I from FY10-FY15 (\$0.8 M state).
- ❑ Phases II and III represent unfunded needs identified in the Rail Resource Allocation Plan, which are proposed for funding in future years.
- ❑ Project costs will be funded through a combination of available federal, state, private railroad, local jurisdiction and nongovernmental funding sources. Project completion and service implementation dates are subject to the availability of funding and contract negotiations with public and private partners.
- ❑ All capital costs are based on the most recently available estimates, expressed in 2010 dollars.
- ❑ All costs and schedules are based on preliminary planning estimates and are subject to revision as additional information becomes available.

Partnership Opportunities

The Port-Related Rail Improvement project will require a public private partnership between the Commonwealth and Virginia International Terminals, a non-profit terminal operating company that is a subsidiary of the Virginia Port Authority (VPA). Any agreement executed with VPA will incorporate container growth, truck diversion and related performance requirements over time.

Figure 4-14

NIT CENTRAL YARD ESTIMATED TEU REMOVAL

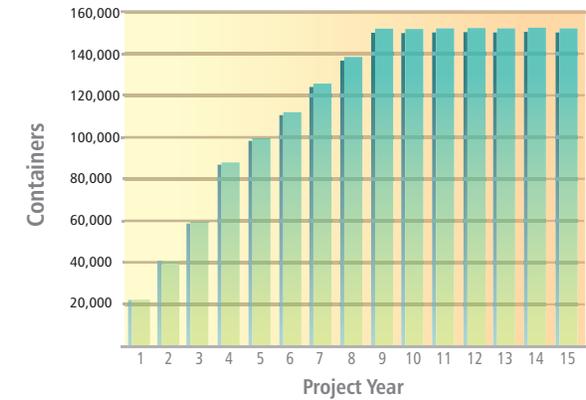
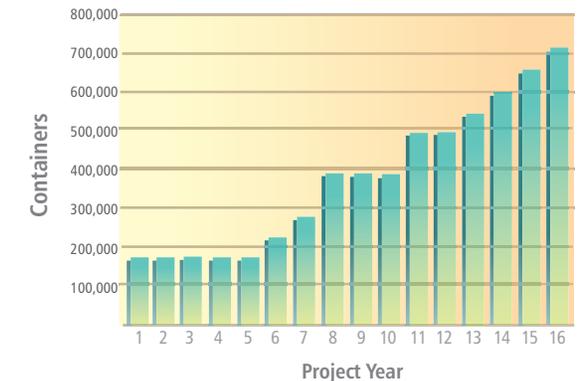


Figure 4-15

CRANEY ISLAND ESTIMATED TEU REMOVAL



Shortline Railroad Preservation (Statewide)

Project Cost: \$259.7 million

The Shortline Railroad Preservation Program will:

- ▣ Identify and establish a cyclical program to preserve Virginia's shortline rail network to a minimum of the Federal Railroad Administration's Class 2 track standards for freight only shortlines and Class 4 track standards for shortlines hosting passenger trains and some of the freight only shortlines.
- ▣ Work to bring all of Virginia's shortline railroads into conformance with these track standards will cost approximately \$209 million over the next 30 years. Shortline railroads also have specific project needs that have been identified, totaling \$50.7 million. *Figure 4-17* illustrates both the program and project needs for each shortline railroad. It should be noted that there may be other needs associated with bridges that have not yet been fully evaluated.

Annual Benefits

There is no statutory requirement for performance benefits within the Rail Preservation Program.



Removes 180 thousand trucks from Virginia's highways



Saves over 24 million gallons of fuel



Saves 47 thousand tons of CO2 emissions

Figure 4-16
SHORTLINE RAILROAD LOCATIONS



KEY FACTS

- ❑ The Commonwealth has determined that it is in the public interest for shortline railways to be preserved due to the value that they deliver for Virginia businesses and for passenger rail service.
- ❑ Shortline railroads connect commercial and industrial business to Class I railroads and, in the case of the Buckingham Branch Railroad, serve as the host railroad for Amtrak service.
- ❑ Figure 4-18 shows the services of the shortline railroads by commodity to Virginia’s economy. The Rail Preservation program assists in moving over 609,900 annual railcars and removing over 2.14 million trucks off of Virginia’s highways.
- ❑ Shortline railroad improvements are primarily funded through the Commonwealth’s Rail Preservation Fund Program.

Figure 4-17

SHORTLINE RAILROAD COST FOR SYSTEM IMPROVEMENTS

Shortline Railroad	Project Needs	Program Needs
Bay Coast Railroad	\$224,000	\$21,789,833
Buckingham Branch Railroad	\$32,663,000	\$79,513,083
Chesapeake & Albemarle Railroad	\$1,300,000	\$25,525,233
Chesapeake Western Railroad	\$0	\$16,479,917
Commonwealth Railway, Inc.	\$1,865,000	\$4,980,533
Deepwater Terminal Railroad	\$0	\$1,400,775
Norfolk & Portsmouth Belt Line	\$6,394,000	\$11,206,200
North Carolina & Virginia Railroad	\$0	\$8,715,933
Shenandoah Valley Railroad	\$1,060,100	\$6,225,667
Virginia Southern Railroad	\$7,200,000	\$23,346,250
Winchester & Western Railroad Company	\$0	\$17,849,700
TOTAL	\$50,706,100	\$209,251,042

Partnership Opportunities

Improvements to the shortline railroad system will require a public private partnership between the Commonwealth and the shortline operators. The shortline railroads are required to achieve specific performance goals for truckload equivalents hauled, maintain rail improvements supported by the Commonwealth and provide a minimum match of 30 percent of the total project cost.

Figure 4-18

SHORTLINE RAILROADS – SUMMARY OF ANNUAL CARLOADS (2007)

COMMODITY	Bay Coast Railroad	Buckingham Branch Railroad	Chesapeake & Albemarle Railroad	Chesapeake Western Railroad	Commonwealth Railway, Inc. *	Norfolk & Portsmouth Belt Line	North Carolina & Virginia Railroad	Shenandoah Valley Railroad	Virginia Southern Railroad	Winchester & Western Railroad Co.
Base Metals						X	X			X
Milled Grain Products	X	X	X	X		X	X	X		
Gravel and Crushed Stone	X	X	X			X				X
Plastic and Rubber	X	X				X	X			X
Wood Products	X	X	X				X	X	X	
Waste and Scrap						X	X	X		
Misc. Manufactured Products			X			X				
Nonmetallic Minerals		X				X				
Paper	X	X					X		X	X
Basic Chemicals	X				X	X	X		X	
Transportation Equipment						X				
Metallic Ore & Concentrates		X								
Machinery	X					X	X			
Cargo – Not Otherwise Specified	X	X	X		X	X	X	X	X	X
TOTALS	3,027	542,888	6,329	N/A	839*	21,470	23,974	1,305	3,878	6,277

* Does not include containerized cargo from the new Maersk APM Terminal in Portsmouth which opened in late 2007 and will generate many new carloads in the future (as will the future VPA Craney Island Marine Terminal to open in 2017). ** DWT is not classified by FRA.

Chapter 5

Future Funding Opportunities and Needs for Rail Projects

Virginia has an ambitious rail agenda of alleviating congestion and creating a rail system appropriate for future passenger and freight growth. The challenge is finding the resources to get it all done. Factors influencing the funding picture for Virginia's rail projects are:

- ❑ Demand for passenger service is growing statewide, as gasoline prices and less attractive aviation options increase demand for VRE and Amtrak service, both of which operate on tracks owned by freight railroads.
- ❑ Freight railroads are also seeing greater demand on their systems. Capacity expansion and other capital investments will be necessary before additional passenger service can be implemented.
- ❑ Freight rail operates at a profit and freight railroads have a responsibility to their shareholders to remain profitable. Passenger rail in the United States requires a subsidy.

- ❑ Virginia has several potential funding options for passenger and freight rail. These options vary according to their source, uses and availability.
- ❑ The Commonwealth is fortunate to have created a dedicated funding source for freight and passenger rail investment — the Rail Enhancement Fund (using a portion of the dedicated rental car tax), the Rail Preservation Program for shortline railroads and Rail Capital Bonds. Virginia carefully manages its funding programs, setting minimum partner contributions and requiring that public benefits produced by rail projects exceed the Commonwealth's investment.
- ❑ New federal funding is expected to become available in the form of capital grants for passenger rail projects. Virginia will have to prepare by developing a financial plan in order to compete for federal funds.
- ❑ Opportunities to partner with other states for new passenger rail service.

While many worthwhile projects have been identified: the expansion of rail in Virginia faces both operational and financial challenges. Demand for passenger rail service is growing across the state. VRE is approaching capacity and ridership is expected to double in the next 20 years. Improved passenger rail service is needed along the major corridors within the Commonwealth. At the same time, the state's freight rail partners are carrying increased volumes of freight traffic and will require capacity expansion and other capital investment before accepting additional passenger service. This increase in freight rail traffic is beneficial to the state transportation system as trucks — which create greater congestion and emissions — are removed from the roadways.

Meanwhile, Amtrak is shifting its strategic focus to passenger rail corridors, with states becoming purchasers of service and bearing increased financial responsibility. Supporting this shift is a new movement in Congress that proposes to authorize significantly increased funding for Amtrak and

Figure 5-1

RAIL PROGRAM REVENUE OUTLOOK

Fiscal Year	Rail Enhancement Estimated Revenue (\$ Million)	Rail Preservation Estimated Revenue (\$ Million)	Capital Project Bonds Estimated Revenue (\$ Million)	Rail Industrial Access Estimated Revenue (\$ Million)	Total (\$ Million)
2009	24.2	3.3	12.9	1.5	41.9
2010	25.0	3.3	12.9	1.5	42.7
2011	25.8	3.3	8.6	1.5	43.5
2012	26.7	3.3	12.9	1.5	44.4
2013	27.6	3.3	12.9	1.5	45.3
2014	28.6	3.3	12.9	1.5	46.3
2015	29.6	3.3	12.9	1.5	47.3
2016	30.6	3.3	12.9	1.5	48.3
2017	31.6	3.3	12.9	1.5	49.3
2018	32.7	3.3	12.9	1.5	46.1
2019	33.8	3.3	0	1.5	38.6
2020	35.0	3.3	0	1.5	39.8
2021	36.1	3.3	0	1.5	40.9
2022	37.4	3.3	0	1.5	42.2
2023	38.6	3.3	0	1.5	43.4
2024	40.0	3.3	0	1.5	44.8
2025	41.3	3.3	0	1.5	46.1
2026	42.7	3.3	0	1.5	47.5
2027	44.2	3.3	0	1.5	49.0
2028	45.7	3.3	0	1.5	50.5
2029	47.2	3.3	0	1.5	52.0
2030	48.8	3.3	0	1.5	53.6
2031	50.5	3.3	0	1.5	55.3
2032	52.2	3.3	0	1.5	57.0
2033	54.0	3.3	0	1.5	58.8
2034	55.8	3.3	0	1.5	60.6
2035	57.7	3.3	0	1.5	62.5
Total	\$1,043.4	\$89.1	\$124.7	\$40.5	\$1,297.7

capital grants to states for passenger rail projects. Two bills have recently passed (S. 294 and H.R. 6003) that would facilitate grants to states to fund improvements to intercity rail. The 2008 Virginia Statewide Rail Plan meets the requirements established by federal legislation to secure future federal funding that may become available.

Sources of Funds

Virginia has many potential funding options for passenger and freight rail. These options vary according to their source (private/railroad or public state, local and federal funds, as well as fares), their uses (stations, rolling stock such as railcars, locomotives, right-of-way, operations and maintenance) and their availability (currently in use versus potentially available in the future).

1. Railroads

The railroads that operate in Virginia have willingly participated in the Commonwealth’s programs in numerous public private partnership projects. These projects have included initiatives focused on reducing truck traffic leaving the Port of Virginia as well as projects that benefit both freight and passenger rail in the I-95 and I-81 corridors. The Commonwealth’s rail programs generally require a 30 percent match from sources other than the Commonwealth or the federal government.

To date, the minimum 30 percent match has not been an issue with respect to the projects that are currently under contract. The expectation is that the railroads will continue to contribute to rail projects at a similar or higher share in the future. A key

emphasis moving forward is the development and execution of agreements that provide dual benefits for passenger and freight rail service.

2. Commonwealth of Virginia

Four programs provide the bulk of rail funding. These are the Rail Enhancement Fund, the Rail Preservation Fund, Transportation Capital Project Revenue Bonds and the Rail Industrial Access Fund. Based on existing funding levels, the rail program revenue outlook derived from these funds is shown in *Figure 5-1* for the Fiscal Years 2009 through 2035.

The Rail Enhancement Fund was established in 2005. The fund provides dedicated state funding for acquiring, leasing and/or improving railways or railroad equipment, rolling stock, rights of way or facilities for freight and/or passenger rail purposes whenever the Commonwealth Transportation Board determines that it is for the good of a region of the Commonwealth or the Commonwealth as a whole. The source of revenues for the Rail Enhancement Fund is a portion of the vehicle rental tax and the interest earned on cash balances — a total of approximately \$23.5 million in FY2008.

The Rail Preservation Fund was established in 1991. The fund provides state financial support to preserve, continue and increase the productivity, safety and efficiency of shortline railway transportation logistics in Virginia. Through projects funded by the Rail Preservation Program, a freight rail transportation alternative is provided to businesses and industries in areas of the

Figure 5-2

S. 294 AND H.R. 6003 GRANTS TO STATES FOR RAIL AND CONGESTION REDUCTION PROJECTS

S. 294 By Fiscal year, in Millions of Dollars							
	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY 2008-2013
Grants to States for Rail Projects							
Authorization Level	\$100	\$246	\$274	\$369	\$406	\$ -	\$1,395
Estimated Outlays	\$22	\$72	\$139	\$205	\$277	\$ -	\$715
H.R. 6003 By Fiscal year, in Millions of Dollars							
	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY 2009-2013
Grants to States for Rail Projects							
Authorization Level	\$ -	\$850	\$852	\$852	\$849	\$849	\$4,252
Estimated Outlays	\$ -	\$85	\$255	\$511	\$681	\$808	\$2,340
H.R. 6003 By Fiscal year, in Millions of Dollars							
	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013	FY 2009-2013
Grants to Reduce Rail Congestion							
Authorization Level	\$ -	\$100	\$102	\$104	\$106	\$106	\$520
Estimated Outlays	\$ -	\$75	\$97	\$103	\$105	\$107	\$487

Commonwealth that otherwise would not have these options. This program has become a key component of the Commonwealth's efforts to attract and maintain business in Virginia. This fund receives a \$3 million annual allocation of highway construction funds and the interest earned on cash balances to fund shortline rail improvement projects.

Capital Project Bonds for transit and rail improvements were established by the General Assembly in 2007. The bond package includes a minimum of 4.3 percent of available bond funds specifically for rail transportation. This equates to approximately \$4.3 million in FY2008 and then about \$12.9 million each year afterward until the total of \$3 billion of authorized bonds are fully

allocated in FY2018. If these bonds were to be extended or a new source of revenue was added to replace bonds after 2018 through FY2035, approximately \$220 million in additional revenue would be available for capital projects. The projects funded with capital bond proceeds are administered through the Rail Enhancement Fund or the Rail Preservation Program for rail capital projects.

The Rail Industrial Access Fund was established in 1986. The fund provides financial support for projects that provide freight rail access to businesses in Virginia in conjunction with the Virginia Economic Development Partnership, County and Municipal Economic Development Departments, railroads and private industry. In 1995, the Commonwealth

Transportation Board passed a resolution for the use of Industrial Access Railroad Tracks Program to serve as an incentive to encourage industrial or commercial development in the Commonwealth of Virginia. Successful candidate projects will produce significant positive economic impacts. Funding for this program is expected to average \$1.5 million per year for future years.

Other Commonwealth Sources. Virginia also provides financial support for public transportation systems in the Commonwealth. State funds are provided to support capital and operating expenses for transit systems and often are used to help provide matching funds for federal grants from the Federal Transit Administration. Two rail projects in Virginia currently receive both federal and state public transportation grants. VRE commuter rail service and the Main Street Station multimodal facility in Richmond both meet the federal and state requirements for public transportation grants. Commuter rail service and multimodal transportation projects with a bus transit component qualify under these programs. In 2007, the Commonwealth significantly increased investments to support transit capital and operating expenses through the use of bond funds for capital and recordation taxes to boost operating assistance. The overall funding for these transit programs increased by 45 percent as a result of 2007 action by the Governor and General Assembly. However, increases in fuel prices and greater demand for public transportation have all but consumed these gains in state financial support for public transportation.

Figure 5-3
HEARTLAND CORRIDOR TUNNEL CLEARANCE FUNDING SOURCES
(\$160 MILLION PROJECT COST)

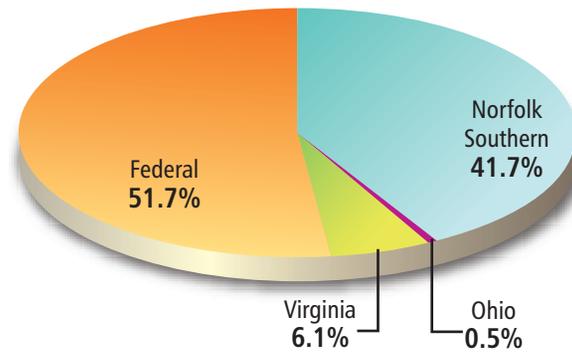
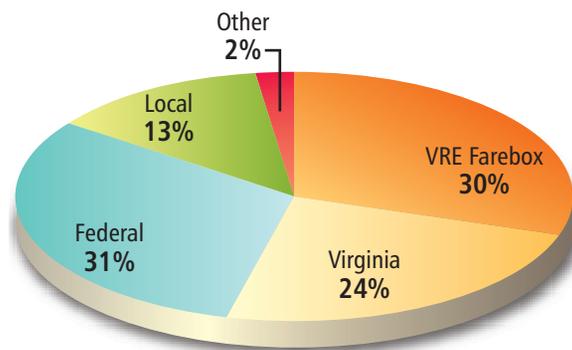


Figure 5-4
VIRGINIA RAILWAY EXPRESS REVENUE FUNDING SOURCES
(\$58.5 MILLION/YEAR AVERAGE TOTAL REVENUE 02-07)



3. Local Jurisdictions

Local jurisdictions usually prefer to see clear local public benefit and equitable cost sharing before they

are willing to invest local revenues in transportation projects. For this reason, passenger rail/multimodal stations represent the best opportunity for utilization of local funding in developing a capital plan for passenger rail expansion. Local funds can be used for the initial purchase or lease of a pre-existing station or land, for station construction and renovation, for construction of parking and for ongoing station expenses (cleaning and maintenance, security, etc.). Station investment is often acceptable to localities, since the investment stays within the immediate community. Further, through the application of transit-oriented development principles, local investment can spur creative multi-use destinations and additional economic development, as well as offer the potential for the creation of multimodal links (such as airport stations or the relocation of intercity bus terminals).

Local jurisdictions often will need to consider alternatives to city or county general funds, which can be used on many projects, but which are often consumed by competing needs (public safety, health, schools, etc.). Some jurisdictions in Northern Virginia use local general funds to assist in the implementation and ongoing operations of VRE service. The investment of local funds into passenger rail programs is critical as it creates a greater sense of ownership, helping the service find successful solutions to land use and operational issues related to service frequency and expansion. Alternative funding vehicles available include private sector partnerships, either through an economic development district or through the joint

development of parking or retail, a special assessment district or the issuance of debt against the increased tax revenues resulting from the increased real property values and stimulated economic investment, which creates more taxable property. Tax Increment Financing, as this latter method is commonly labeled, dedicates the future increased tax revenues to finance debt issued to pay for the project.

Additionally, in Virginia, jurisdictions may elect to program a portion of their allotments of state highway funds under the Urban or Secondary Roads programs to support passenger rail projects. These programs currently are severely financially constrained and in most cases are not a likely source for rail project funding. In Virginia's largest urbanized areas, local jurisdictions also play a role in the possible use of certain federal funds that are programmed at the regional level through Metropolitan Planning Organizations (MPOs). The MPOs may program certain Federal Highway allocations to help fund rail capital improvements such as station improvements.

4. Federal Funding

On the federal side, the nature of the passenger rail service determines its eligibility for federal funding. The U.S. DOT classifies passenger rail services as either commuter rail service (handled by the Federal Transit Administration [FTA]) or intercity passenger rail service (handled by the Federal Railroad Administration [FRA]). In Virginia, only the passenger services operated by VRE meet the FTA definition of commuter rail service. The VRE services generate and

are eligible for FTA funds under both the Section 5307 (urbanized area) and Section 5309 (fixed guideway modernization) federal formula programs that are used for capital projects in the two service corridors.

Until recently, there was no federal funding program to assist states with intercity passenger rail projects. However, in January 2008 the FRA announced a new Capital Assistance to States - Intercity Passenger Rail Service Program. The program made \$30 million in federal matching funds available directly to states through grants to fund up to 50 percent of the cost of capital investments and planning activities necessary to achieve tangible improvements or to institute new intercity passenger rail service. The program focuses on projects that lead to an on-time performance of 80 percent or greater, reduce travel times, increase service frequency or enhance service quality for intercity rail passengers. Virginia has submitted two grant applications under this program that will support 50 percent of project costs for planned improvements between Fredericksburg and Washington, DC

There are also the two Amtrak reauthorization bills (S. 294 and H.R. 6003) that cleared their respective houses with veto-proof majorities. Both S. 294: Passenger Rail and Investment Improvement Act of 2007 and H.R. 6003: Passenger Rail Investment and Improvement Act of 2008 contain a provision that authorizes the USDOT to make grants to states to fund improvements to intercity rail. *Figure 5-2* depicts the level of funding that could potentially be available under the provisions of these two bills. The

actual estimated outlays are significantly lower than the authorized amount in the bills.

There are other limited federal funding sources that can support some capital expenses for passenger rail transportation. For example, limited federal funds may be available to support station expenses through historic preservation funds and Department of Homeland Security funding for security upgrades. These funding sources generally require a federal earmark. Improvements to grade crossings may also be eligible for federal funding through the FHWA grade crossing program or the FRA Sealed Corridor program.

Finally, both Congestion Mitigation Air Quality (CMAQ) and Surface Transportation Funding (STP) programs have specific application to both capital project elements of passenger rail service expansion (CMAQ and STP) and the start-up costs associated with operations in the first three years (CMAQ). These funds are allocated to the Northern Virginia, Richmond, Hampton Roads and Fredericksburg urbanized areas and are programmed by the regional MPOs. The Commonwealth provides the 20 percent match that is generally required by these federal programs from the Priority Transportation Fund.

Regardless of the source or program, Virginia is preparing to capture future federal funding. If either S.294 or H.R. 6003 passes in its current form, capital grants to states would likely become available beginning in 2010 or 2011. SAFETEA-LU, the current national transportation authorization

program, expires after FY2009, and reauthorization may offer additional funding sources, including possible expansion of existing programs that have not been fully appropriated as authorized (such as the grade crossing program and the high speed rail corridor development program), as well as the potential for a significant FRA investment program.

Even in the absence of special federal matching funds related to Amtrak service, some funding may be available to Virginia from Amtrak's general capital budget. Amtrak has mandatory station upgrades required under the Americans with Disabilities Act that may contribute to some station upgrades. In addition, if Amtrak's general capital budget increases, Virginia will be prepared to make the case for investments and improvements within the state and help encourage federal funding with the availability of state resources.

5. Passenger Fares

Fare revenues are generally used to defray a portion of the operating costs. As with transit service everywhere else in the country, both commuter and intercity rail require a subsidy to support capital and ongoing operating costs. The subsidy required ranges based on the type of service desired.

Summary

Virginia is fortunate to have established several dedicated funding sources for its rail program. Any successful rail projects in Virginia will need to bring together multiple funding sources and partners to support various project elements. The Heartland Corridor project and VRE services provide successful templates for sharing costs and benefits. *Figure 5-3* depicts the multiple funding source percentages for the \$160 million tunnel clearance project as part of the multi-state Heartland Corridor Initiative. *Figure 5-4* is a summary of a six-year (2002 to 2007) average of the multiple revenue funding sources for VRE.

Implementation of intercity rail provides benefits all along the corridors that VRE serves. However, intercity rail, like VRE, will face challenges in securing funding from all of the beneficiaries. Given the length in terms of route miles that intercity rail service may operate from Newport News to Washington, DC or Bristol to Washington, DC, Virginia will have to assume a leadership role by providing a business model that collects revenues from various sources, negotiates with railroads for operating slots and improvements and, ultimately, executes an agreement to fully reimburse Amtrak for its costs of operating service in the Commonwealth.

From a policy perspective, it is clear that the Commonwealth cannot choose between freight and passenger rail service. DRPT is focused on developing multimodal solutions that will provide highway congestion relief, support economic prosperity and enhance the quality of life for Virginians.

Chapter 6

Next Steps and Conclusion

This 2008 Statewide Rail Plan identifies the Commonwealth's priority projects based on the funding allocations and implementation plan identified in the 2008 Statewide Rail Resource Allocation Plan, completed in December 2008. The Statewide Rail Resource Allocation Plan outlines a strategy for the allocation of resources between passenger and freight rail projects statewide, with a focus on identifying specific projects for funding and implementation over the next six years. Projects were narrowly defined, with anticipated funding sources for both public and private sector investment. The selection process for the passenger and freight rail projects was guided by an evaluation of the ability to achieve state transportation goals and deliver public benefits.

The 2008 Statewide Rail Plan also included a comprehensive public involvement and stakeholder planning process, key actions include the following:

- ❖ Responding to the General Assembly directive defined in the 2008 Appropriations Act for the establishment of a resource allocation strategy for freight and passenger rail initiatives through the development of the Statewide Rail Resource Allocation Plan.
- ❖ Working with potential project partners to further define funding strategies, project scopes and schedules for specific rail improvement projects.
- ❖ Identifying potential federal funding sources and ensuring that the appropriate resources are in place at the state and local levels to advance projects that could receive federal funding.
- ❖ Finalizing the Statewide Rail Plan document.

Public Involvement Program

DRPT recognizes the importance of public comments in the development of state planning documents, and the development of the 2008 Statewide Rail Plan included a clearly defined public involvement process.

April-May 2008 Initial comments were accepted on the public's priorities for passenger and freight rail improvements in Virginia through six public hearings held statewide and a public comment period.

July 2008 The Draft 2008 Statewide Rail Plan was issued for public comment. The draft Plan was shared with the Commonwealth Transportation Board and the Rail Advisory Board, and five public meetings were held statewide. The draft plan was made available online at DRPT's website and at DRPT's Richmond headquarters.

September 2008 The Draft 2008 Statewide Rail Resource Allocation Plan was issued for public comment, including funding strategies and the proposed allocation of resources for freight and passenger rail initiatives statewide.

December 2008 The 2008 Statewide Rail Plan and Statewide Rail Resource Allocation Plan were finalized, based on comments received and the funding priorities.

Public Comments Received

Eleven public meetings were held statewide to discuss proposed project details and receive public comments on rail priorities for the Statewide Rail Plan. In addition, a survey provided to generate public feedback.

The majority of the comments received were to encourage the Commonwealth to increase passenger and freight rail service in Virginia's major corridors, including I-81, I-95, I-64 and US 29. Overwhelming support was received for passenger rail service between Lynchburg and Washington, D.C., and many who commented requested that the service be extended to Roanoke and Bristol. Regarding freight rail service, many supported freight rail enhancement throughout Virginia and specifically in the I-81 corridor.

Regarding funding, comments generally encouraged DRPT to secure dedicated funding for freight and passenger rail service, opposed opening the Mass Transit Trust Fund to passenger rail projects and opposed requiring local funding for intercity passenger rail projects.

Finally, it was important to the vast majority of those who provided comments that the projects proposed in the Statewide Rail Plan provide environmental benefits such as reduced dependence on oil, improved air quality and the preservation of historic and cultural resources as well as natural resources.

Future Statewide Rail Plan Updates

DRPT recommends that the Statewide Rail Plan will be updated every five years. The Six-Year Improvement Program should be reviewed on an annual basis to:

- ❑ Evaluate rail transportation changes in the context of a multimodal transportation system – particularly passenger rail services (including high speed rail) and intermodal movements through the Ports of Hampton Roads.
- ❑ Respond to any Commonwealth or federal legislation with respect to rail funding programs, safety and security, reporting, environmental and funding program changes.
- ❑ Review the implementation of rail plan priorities based on the following transportation goals:
 - > Safety and Security
 - > Preservation and Management
 - > Mobility, Accessibility and Connectivity
 - > Economic Vitality and Development
 - > Land Use and Quality of Life
- ❑ Evaluate new technologies that could be implemented for rail improvements.

Conclusion

As the preceding chapters have pointed out, rail is vital for the Commonwealth's economy, connecting Virginia to the global marketplace both overseas through connections at the Ports of Hampton Roads and in North America through rail connections that extend to the nation's East and West Coasts, north to Canada and south to Mexico.

Virginia's rail system faces a challenging future. This is due to several factors:

- ❑ The U.S. population is growing, and the Commonwealth's economic viability is drawing an even larger percentage increase in population than that of the nation overall. This means more crowded highways, greater demand for increasingly expensive fuel, increased demand for goods and services, and a growing concern for maintaining natural resources and the environment.
- ❑ Passenger rail is experiencing an increase in demand in Virginia, particularly in major metropolitan areas (Northern Virginia, Richmond and Hampton Roads), as congestion, fuel costs and environmental concerns make commuter and intercity train travel a more attractive option.
- ❑ There is also increasing demand for freight rail. This is due in part to the overall increase in demand for goods, such as coal, that currently use Virginia's rail system. It is also due to the need to move freight from trucks to rail to obtain greater fuel efficiency, address highway congestion and lower carbon emissions.

∴ Passenger and freight rail share tracks that are owned by private freight railroads. The dual demands of increased passenger and freight rail — which can have competing needs for track availability — have to be managed strategically in order to support and sustain the growth and quality of life to which the Commonwealth is committed.

By thinking in terms of an integrated multimodal transportation corridor network, the Commonwealth has accomplished much to meet these challenges, from rail line improvements and expansion to the establishment of a dedicated funding source. The 2008 Statewide Rail Plan presents rail needs for the future that build on past achievements, with a focus on identifying key corridors and potential investments.

Given the costs of projects and limited public funding available, partnerships will be key to moving projects forward. The Commonwealth is committed to enhancing partnerships with the private sector, including railroads, local governments and regional planning organizations, to attract private capital and to achieve its strategic goals.

From a policy perspective, it is clear that the Commonwealth cannot choose between freight and passenger rail service. DRPT is focused on developing multimodal solutions that will provide highway congestion relief, support economic prosperity and enhance the quality of life for Virginians.

Thank you for your interest and support.

