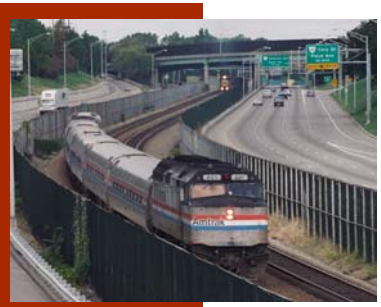
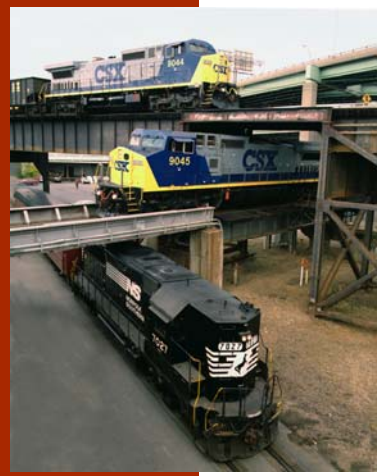
DRPT
Virginia Department of Rail and Public Transportation





Draft Statewide Rail Plan

July 2008

www.drpt.virginia.gov

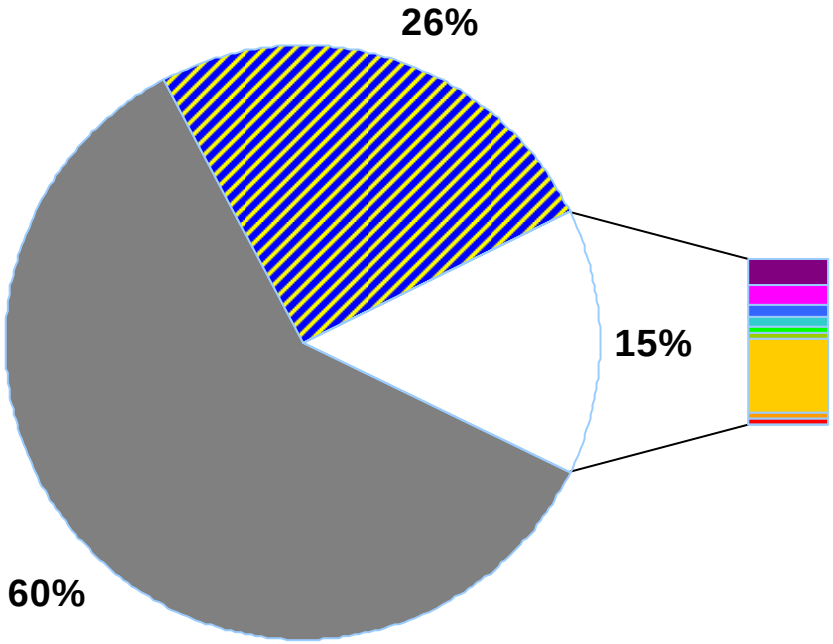
Overview

- Virginia Rail System
- Setting the Stage
- Rail Benefits
- Proposed Improvements
- Cost Assumptions
- Class I and Shortline Railroads
- Port Projects
- Passenger Rail Initiatives
- High Speed Rail
- Total Project Benefits
- Funding
- Next Steps

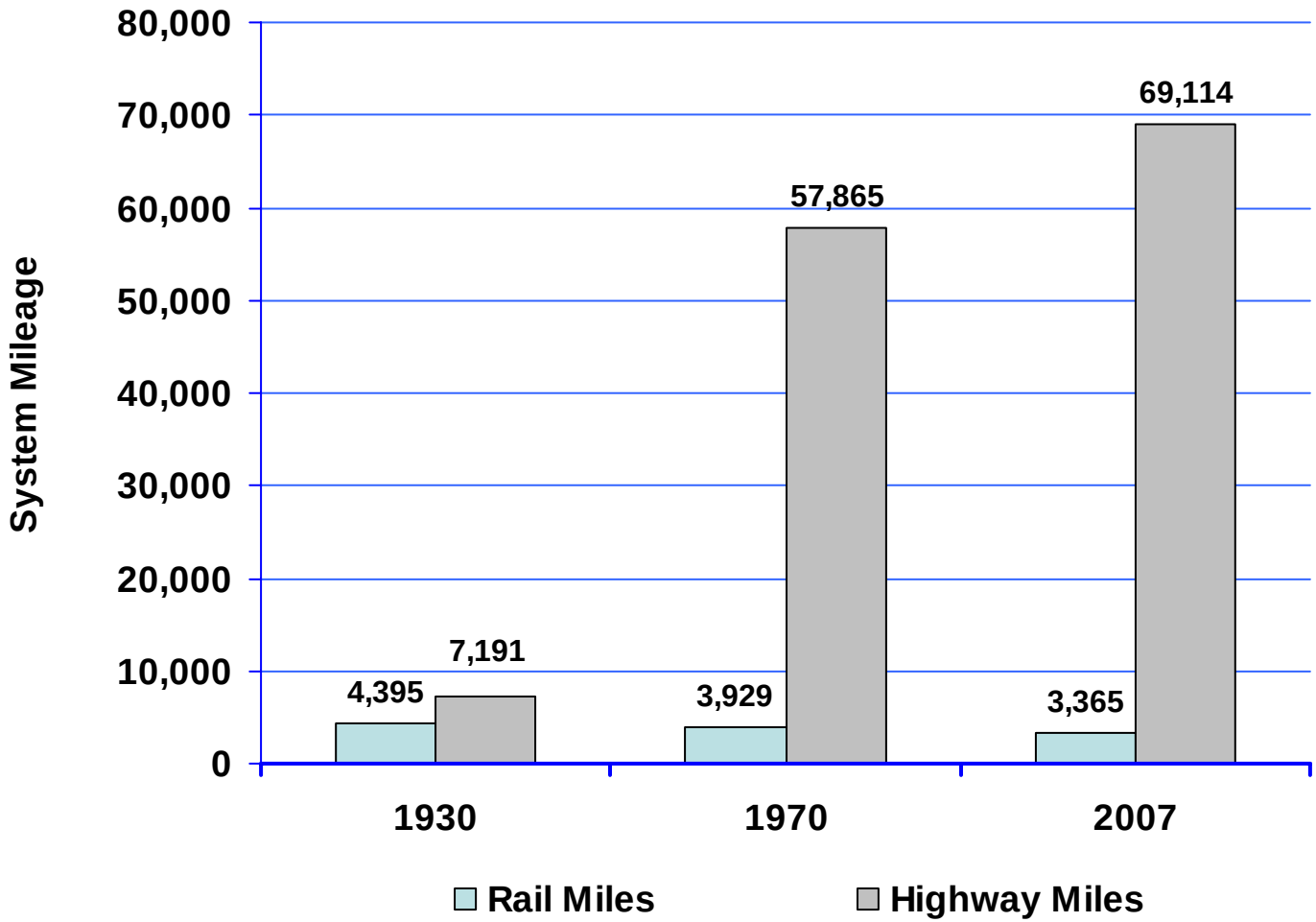
Virginia Rail System

- **Two passenger rail operators – Amtrak and Virginia Railway Express**
- **Twelve freight railroads –**
  - **Two national Class I Railroads: Norfolk Southern and CSX**
  - **Ten local shortline railroads**

Virginia's Current Rail System
Privately-Owned by Freight Railroads

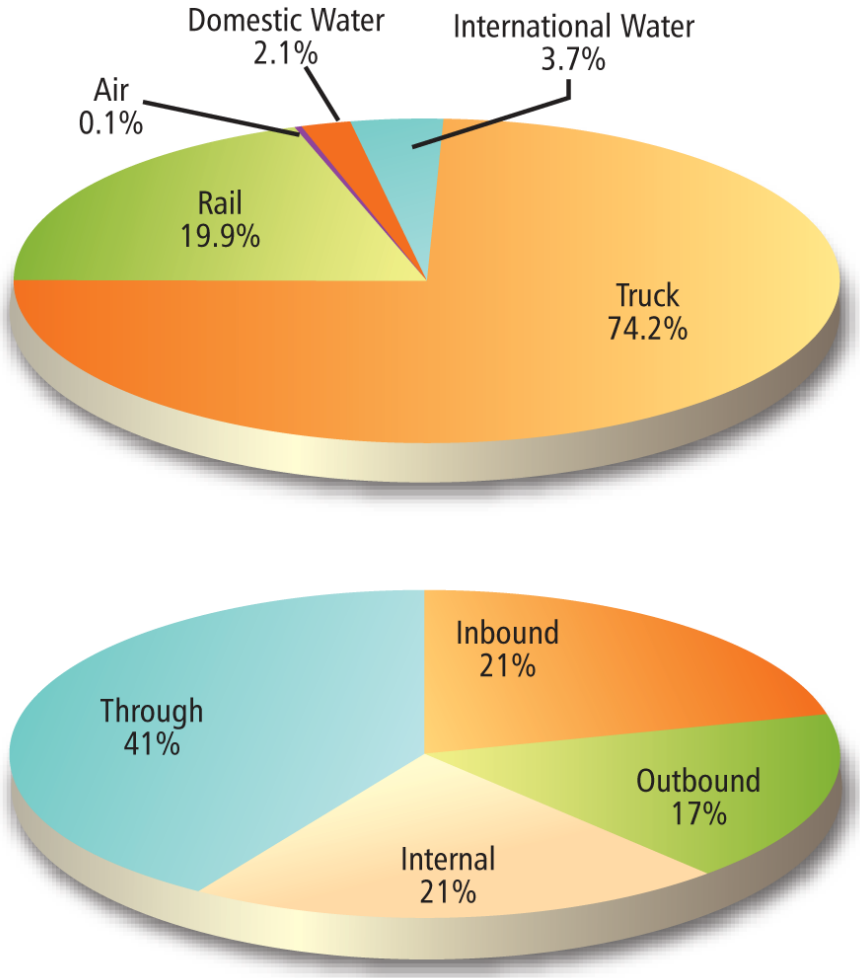


Virginia Highway and Rail Miles

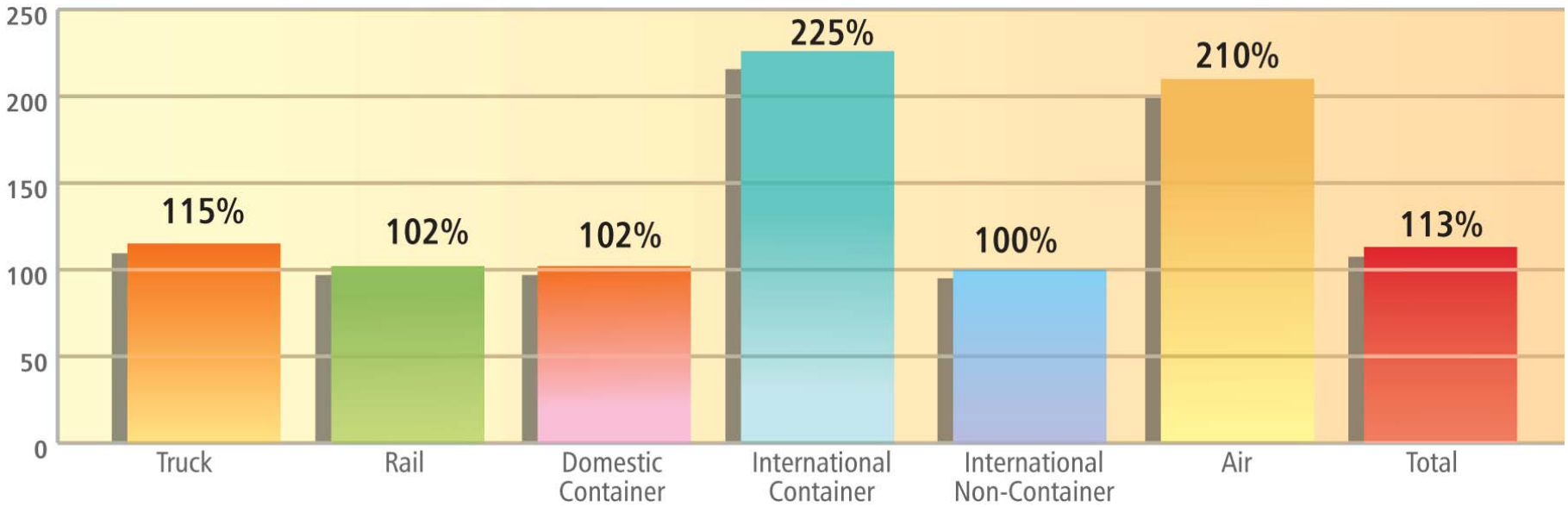


Forecast Year:

Virginia Freight Tonnage by Mode and Direction (2004)

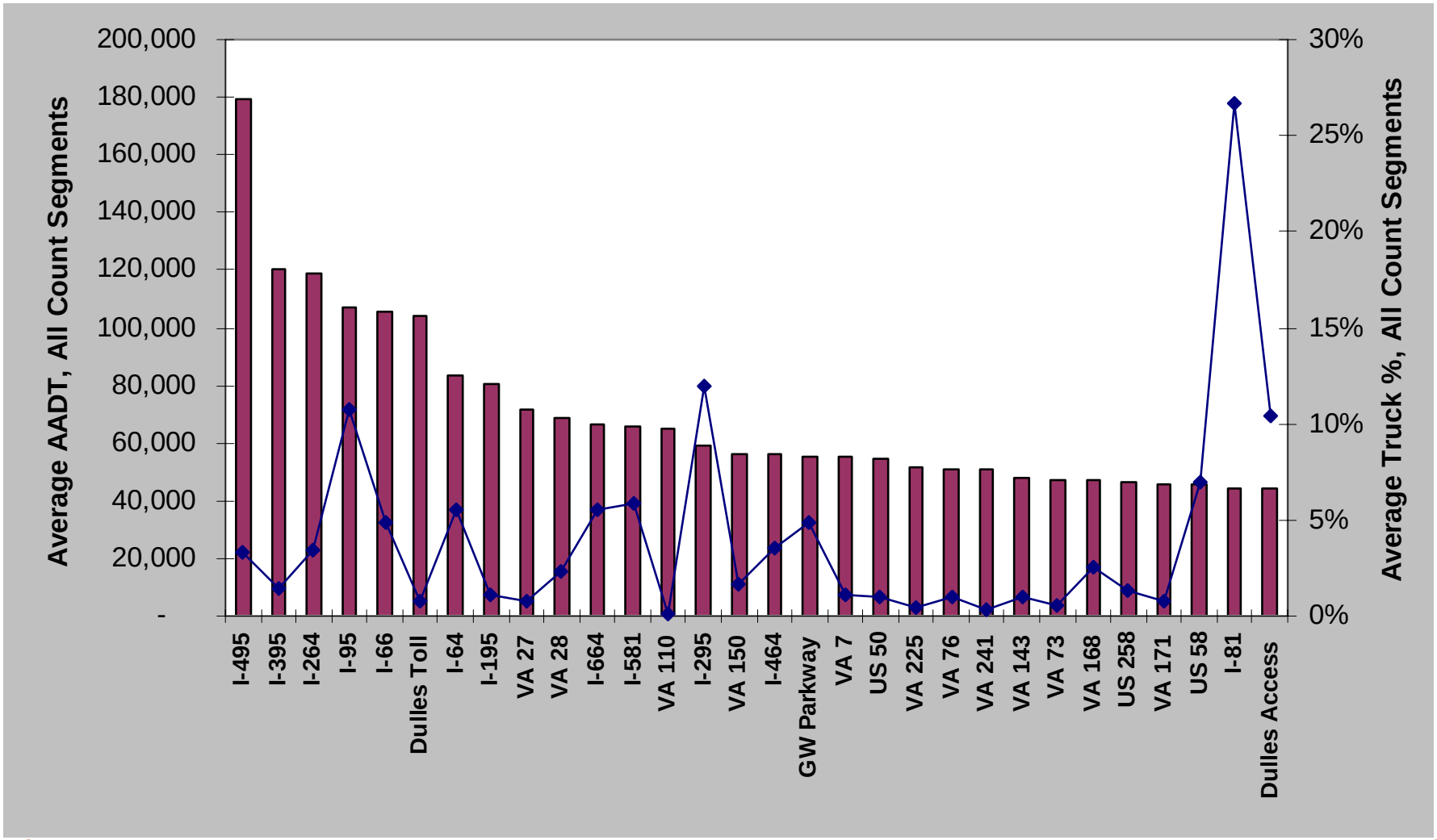


Projected Virginia Freight by Mode (2035)

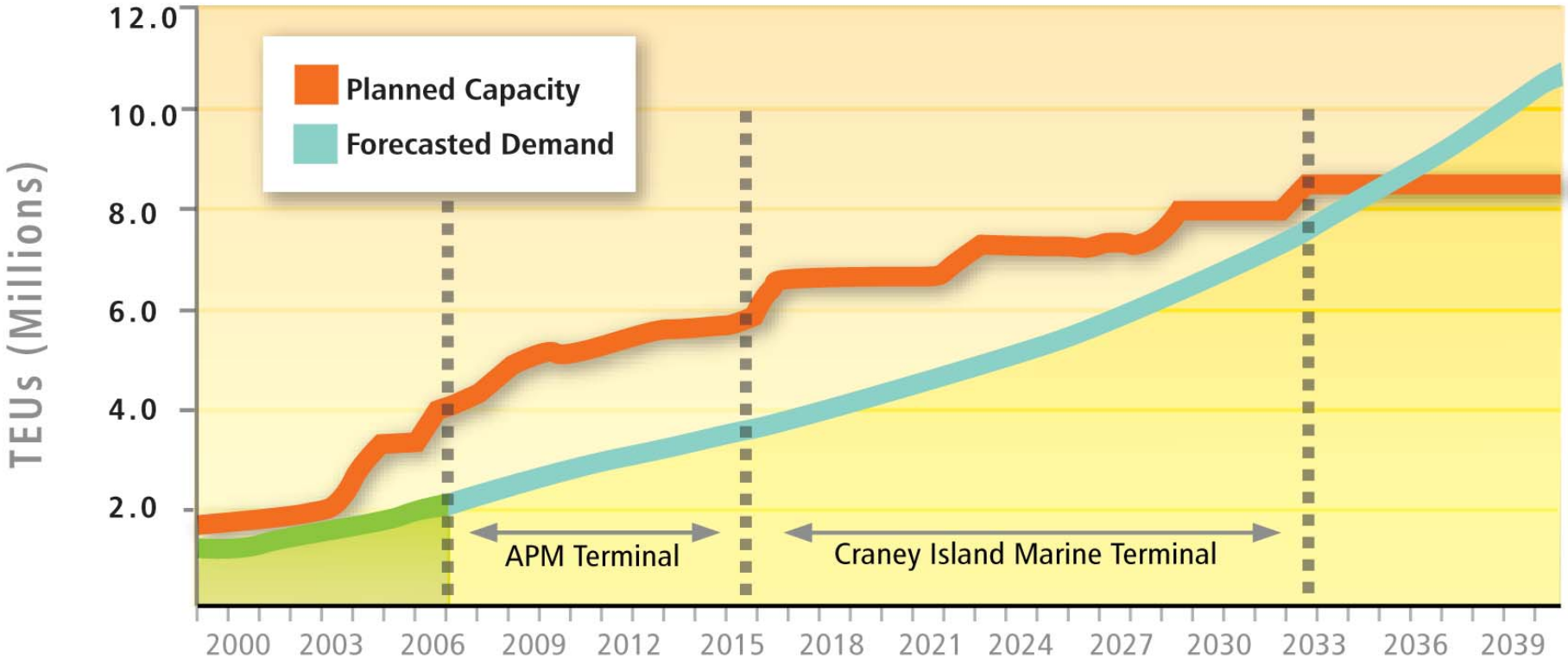


7-14-08

Average Total AADT and Truck Percentages All count Segments – top 30 Routes (2005)

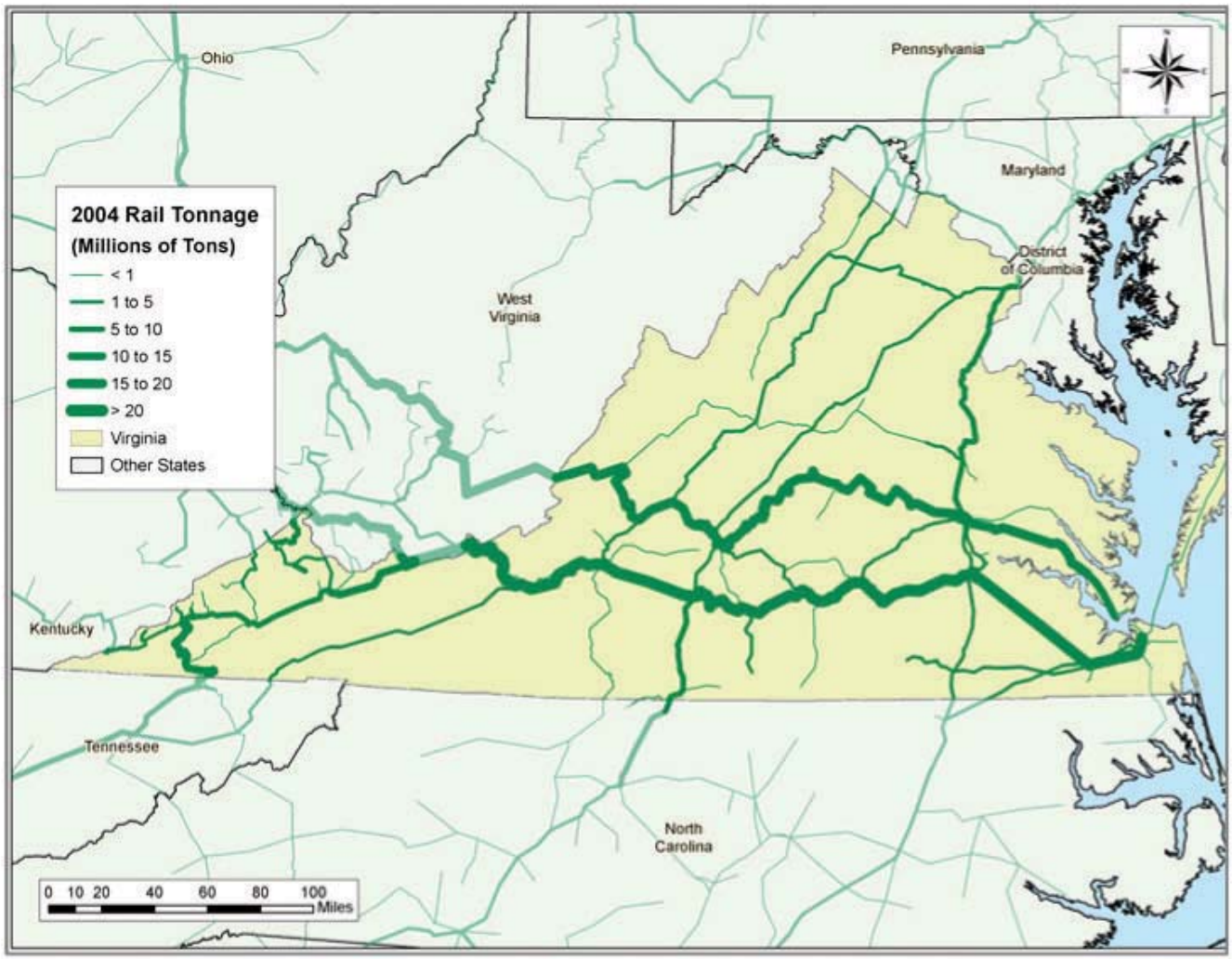


Increase of Containerized Cargo (TEUs) Virginia Ports



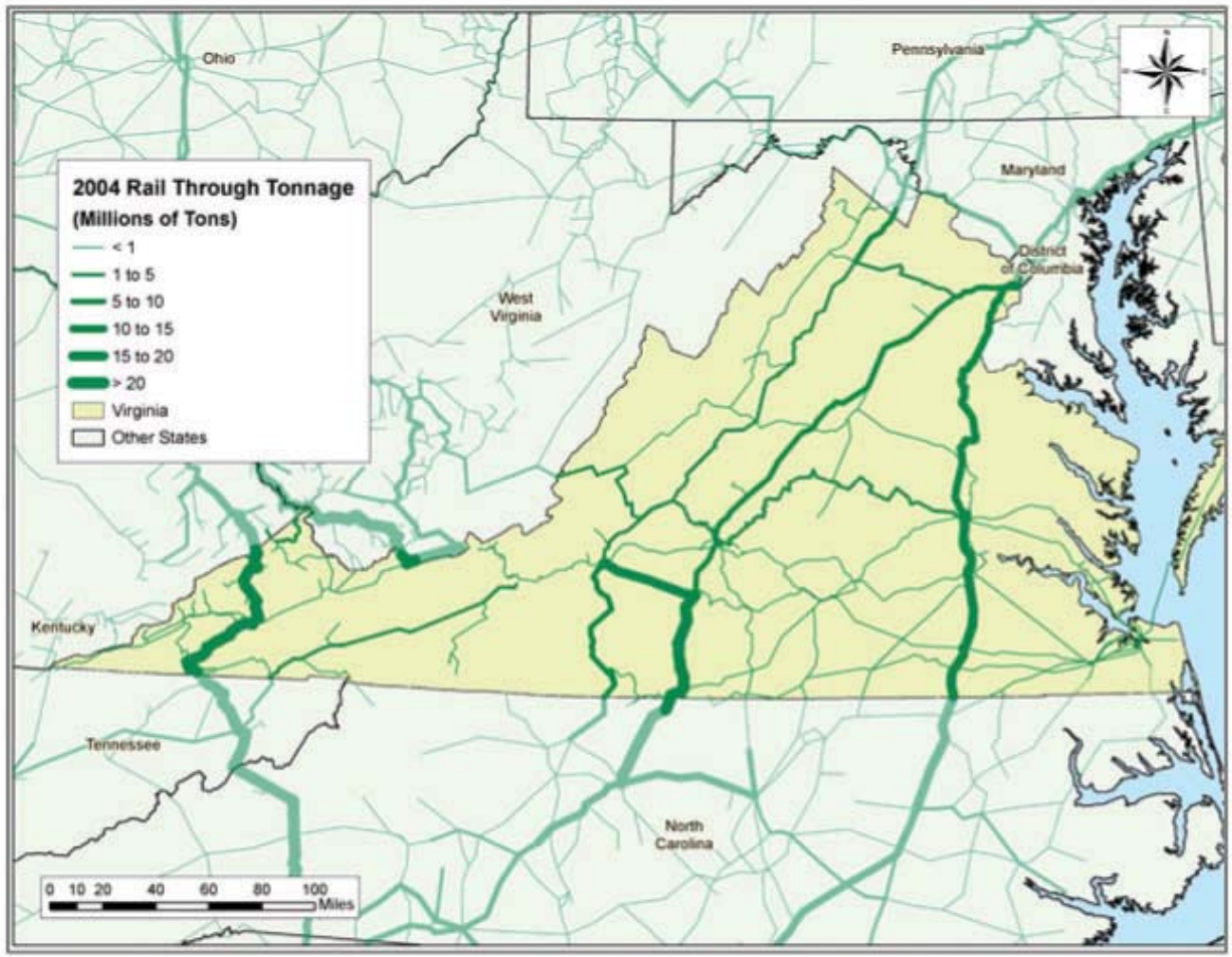
Forecast Year: 2006

Virginia Rail Tonnage (2004)



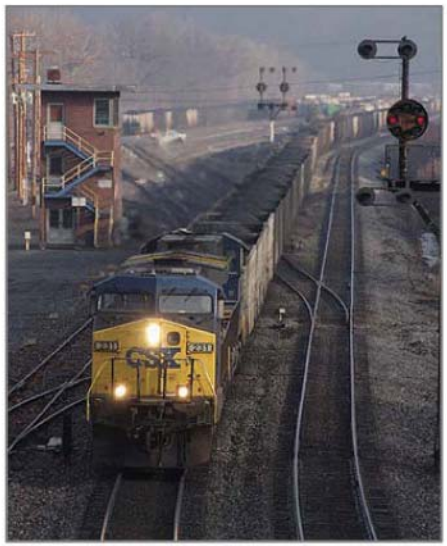
7-14-08

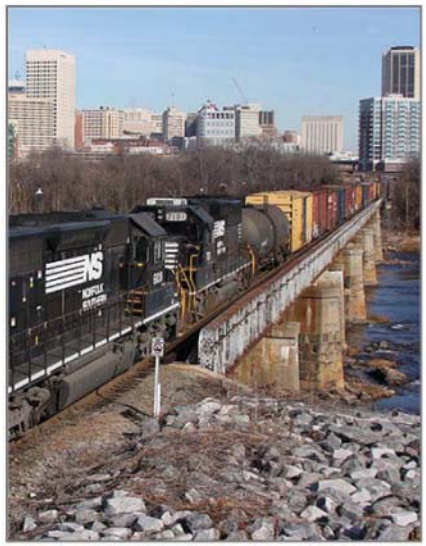
Rail Tonnage Passing Through Virginia (2004)



7-14-08

Percentage of Freight Rail Tonnage (2005)





Unit Train 60%

Long trains of a single railcar type and product, like coal -- mostly east-west

Carload 24%

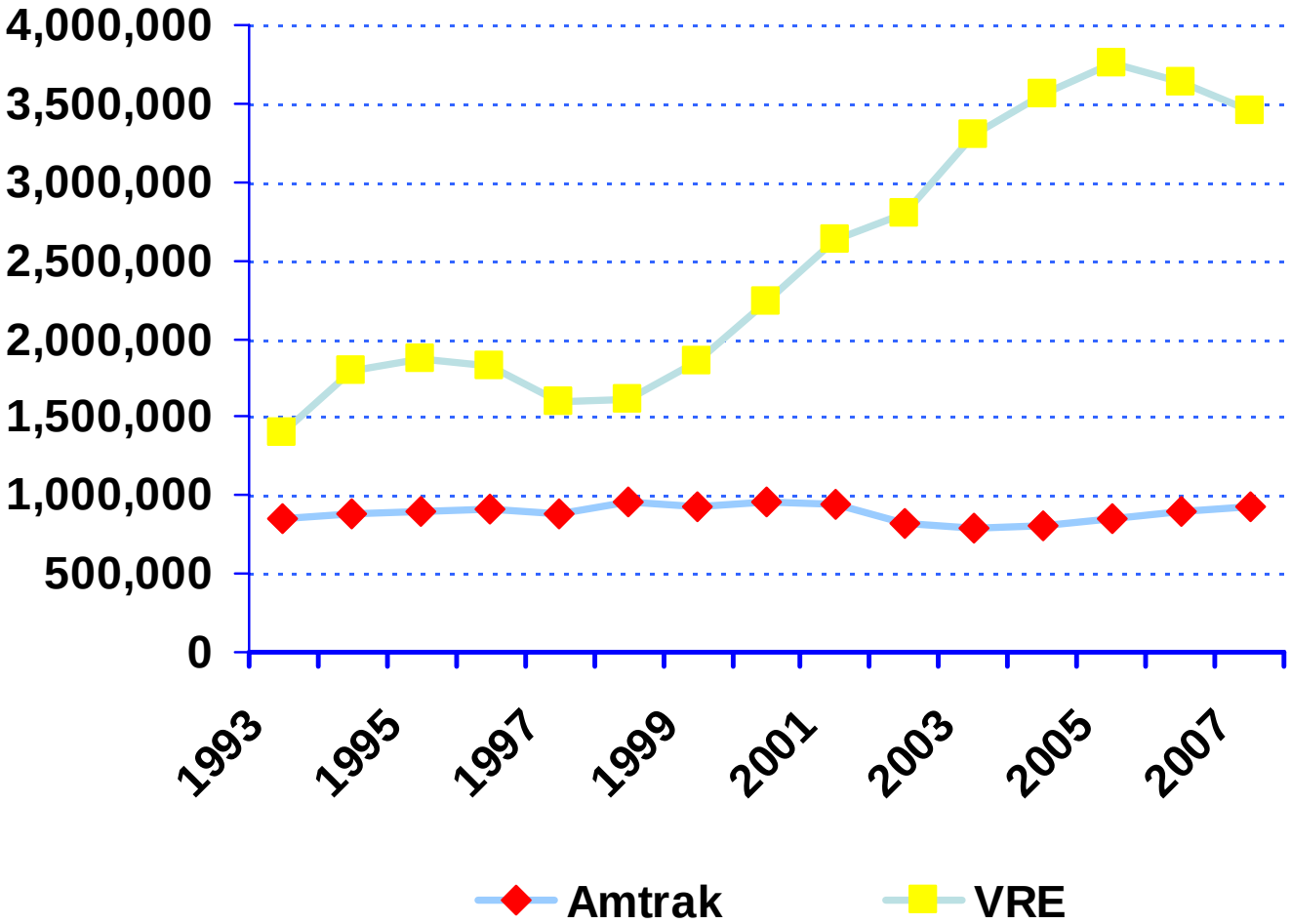
Mixed trains with different railcar types and products --

mostly north-south

Intermodal/Auto 16%

Containers, autos, other on railcars -- a future north-south opportunity

Annual Passenger Traffic (FY 1993-2007)



7-14-08

Setting the Stage

- The draft statewide rail plan builds on past successes to develop multimodal transportation corridors
- It is consistent with Commonwealth Transportation Policy Goals:
  - Providing a safe transportation system for Virginians
  - Maintaining existing transportation assets
  - Efficient and cost effective movement of people and goods
  - Stewardship of the environment
- It also supports the VTrans 2035 statewide transportation plan update

7-14-08

Setting the Stage

- Virginia rail funding
  - The Rail Enhancement Fund provides approximately $24 million for rail capital improvements annually
  - Rail Enhancement funding was supplemented in 2007 by a 10-year, $124.7 million bond program
  - Rail Preservation funding for shortline railroads is available at approximately $3 million annually
  - Rail Industrial Access funding is available for businesses to connect to freight rail shipping through a shared fund at approximately $5 million annually
  - One-time funding for the I-95 and I-81 rail corridors has provided more than $130 million to improve rail capacity and service reliability

Virginia has participated in the Heartland Corridor Project, a project of national significance that will support and enhance domestic and international trade, and remove 150,000 trucks from Virginia highways.

Four tunnels in Virginia are being cleared to accommodate double-stack rail traffic.

7-14-08

Virginia has allocated over $151.55 million to help increase rail capacity and divert trucks to rail in the I-95 and I-81 corridors.

The new two-track Quantico Creek Bridge opened on Feb. 17, 2007 in the I-95 corridor.

7-14-08

Virginia has participated in the construction of an on-dock rail yard to support the first privately developed marine terminal in North America, APM Terminals Virginia, to move 128,500 containers annually in 2010.

A train carries double-stack rail containers from the port.

Setting the Stage

- Virginia faces a number of challenges:
  - Population growth
    - Outpacing the national average
  - Highway congestion
    - Northern Virginia is part of the second worst region in the country
  - Airline industry limitations
    - No direct connections between Virginia regions and cities
    - Cost prohibitive for travel within the state
  - Passenger and freight rail capacity/demand
    - Rail transportation is approaching the limits of capacity
    - Demand continues to rise
  - Port growth
    - One of the most significant economic engines of Virginia
    - More access to freight rail shipping is needed to accommodate the demand for imports and exports

Setting the Stage

- Understanding the freight rail business:
  - The US is an international leader in freight rail, but lags behind in passenger rail.
  - Freight rail is a very capital intensive industry. From 1995-2004, rail capital expenditures represented 18% of rail revenue compared to 4% for the average manufacturing company.
  - Rail tracks in Virginia are privately owned by freight companies with a responsibility to return shareholder value.
  - Freight rail is at least five times more profitable than passenger rail.
  - Capacity is a commodity for private railroads, and railroads typically focus on capacity replacement (additional tracks) in exchange for access by commuter rail.
  - Private railroads have the power to condemn property for necessary right of way.

Setting the Stage

- Understanding the passenger rail business:
  - Passenger rail typically requires a subsidy.
  - Amtrak, through federal statute, has the right to operate on freight rail lines.
  - Commuter rail operators like VRE do not have that right, and must negotiate with private railroads.
  - The cost of right of way is expensive.
    - VDOT estimates that the cost of acquiring right of way between Washington, DC and Richmond in the I-95 corridor would cost at least $2 billion
  - Passenger rail operators have consistently chosen to access private rail lines rather than building dedicated passenger tracks.

7-14-08

Rail Benefits

- VRE service provides the equivalent capacity of one highway lane on I-95 and I-66 during peak periods.
- One intermodal train can carry up to 280 truck trailers.
- Train travel is 17% more energy efficient than domestic airline travel and 21% more energy efficient than auto travel.
- Traveling by rail contributes fewer greenhouse gas emissions than either cars or airplanes. Passenger rail emits only 0.2% of the travel industry's total greenhouse gases.

7-14-08

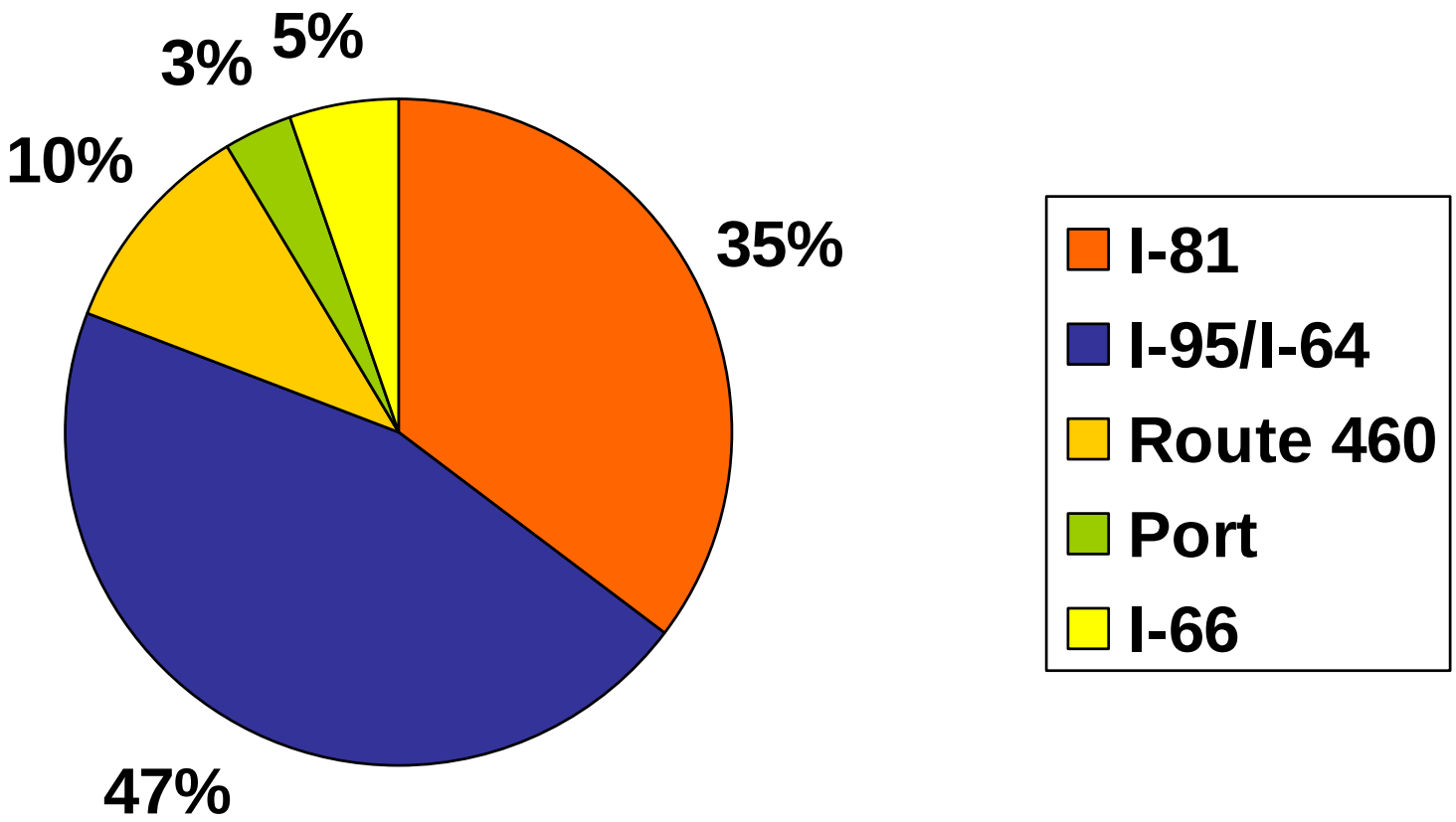
Potential Improvements

- Potential projects identified in the draft Statewide Rail Plan will:
  - Focus on corridor management to support diverse needs
  - Provide improvements throughout the state
  - Position Virginia for future growth
  - Support growth at the Ports of Hampton Roads

Cost Assumptions

- Project cost estimates include capital costs only
- All costs are stated in 2008 dollars, without escalation to potential year of expenditure
- No operating or equipment costs are included- these will be identified in the Rail Action Plan
- The Rail Action Plan will include all costs and will have costs escalated based on year of expenditure

Rail Needs by Major Corridor



More than $4.9 billion in needs statewide

7-14-08

RAIL PROJECT OVERVIEW

Potential Improvements to the Rail System

Project Cost: $5 billion

Summary of Rail Projects

Class I and Shortline Railroad Project Costs

Project	Costs
NS Class I	$ 1.7 billion
CSX Class I	$ 48.0 million
Shortline Railroad	$ 68.0 million
Total Costs	**$ 1.8 billion**

Ports of Hampton Roads Project Costs

Project	Costs
NIT Central Rail Yard Expansion	$ 40.15 million
Craney Island Rail Connection	$ 130.00 million
Norfolk/Portsmouth Beltline Railroad	$ 8.75 million
Total Costs	**$ 178.90 million**

Passenger Rail Project Costs

Project	Costs
Commuter Alexandria to Manassas	$ 8.25 million
Commuter Gainesville to Haymarket	$ 281.00 million
Commuter Fredericksburg to Washington, DC	$ 470.00 million
Intercity Urban Crescent	$757.00 million
Intercity TransDominion Express	$206.00 million
Total Costs	**$ 1.7 billion**

High Speed Rail Initiative Costs

Project	Costs
Southeast High Speed Rail	$ 1.2 billion

7-14-08

Class I and Shortline Railroad Projects

Class I and Shortline Railroad Project Costs	
Project	**Costs**
National Gateway	$48 million
Crescent Corridor	$1.6 billion
Heartland Corridor	$66.01 million
Coal Corridor	$12.1 million
Shortline Railroads	$68 million
Total Costs	**$ 1.8 billion**

7-14-08

CLASS I AND SHORTLINE RAILROADS

CSX National Gateway Corridor (I-95, I-295, I-495)

Project Cost: $48 million

At a Glance

:: Parallels I-95 through Virginia

:: Improves efficiency of freight rail shipping from ports of MD, VA and NC and to markets in PA, WV and OH

:: Virginia improvements:

- Kilby Rail Yard
- Double-stack train clearances

:: Freight benefit: Expands capacity

:: Passenger benefit: Improves on-time performance

CSX National Gateway Corridor Development Status

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

Annual Benefits

Removes 130,000 trucks from I-95 Corridor

Saves over 31.9 million gallons of fuel

Saves 61,705 tons of CO_2 emissions

7-14-08

CLASS I AND SHORTLINE RAILROADS

Norfolk Southern Crescent Corridor (I-81)

Project Cost: $1.6 billion

At a Glance

:: Improves freight rail shipping along I-20, I-40, I-75, I-85 and I-81

:: Freight benefit: Expands capacity, diverting trucks from congested roadways

:: Passenger benefit: Could expand Amtrak to serve Charlottesville, Lynchburg, Roanoke and Bristol and expand VRE service from Manassas to Haymarket

Norfolk Southern Crescent Corridor Development Status

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

Annual Benefits

Removes 1.6 million trucks (base estimate) from I-81 Corridor by 2035

Saves over 227 million gallons of fuel

Saves 674,000 tons of CO_2 emissions

7-14-08

CLASS I AND SHORTLINE RAILROADS

Norfolk Southern Heartland Corridor (Route 460) (Phase 1)

Project Cost: $66.01 million

Norfolk Souther Heartland Corridor Development Status - Phase 1

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

Annual Benefits

Removes 150,000 trucks from Virginia highways

Saves over 20.06 million gallons of fuel

Saves 55,804 tons of CO_2 emissions

At a Glance

:: Doubles freight capacity parallel to Route 460

:: Freight benefit: Cuts 1.5 days of shipping time between Hampton Roads and Chicago

:: Passenger benefit: Could support expanded Amtrak service between Washington, DC and Bristol

:: Planning has begun on Phase 2

7-14-08

CLASS I AND SHORTLINE RAILROADS

Norfolk Southern Coal Corridor (Route 460)

Project Cost: $12.1 million

Norfolk Southern Coal Corridor Development Status

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

At a Glance

:: Adds additional track capacity parallel to Route 460 between Andover and Green Bay to support projected increases in coal shipments

:: Freight benefit: Improves capacity to move coal from coal fields to Hampton Roads and to generating stations in TN, NC, SC and GA

:: Passenger benefit: Could support expanded Amtrak service between Washington, DC and Bristol

:: As most coal is already carried by rail, no calculations of truck diversion, fuel savings or reduced emissions have been conducted

7-14-08

CLASS I AND SHORTLINE RAILROADS

Shortline Railroad Preservation (statewide)

Project Cost: $68 million

At a Glance

:: Brings all shortline rail systems in Virginia up to Federal freight and passenger standards

:: Freight benefit: Improves capacity to handle larger shipments, providing critical business-to-business link

:: Passenger benefit: Improves Amtrak service between Orange and Clifton Forge

Shortline Railroad Preservation

Shortline Railroad	Amount ($)
Bay Coast	$ 5,107,000
Buckingham Branch	34,534,000
Chesapeake & Albemarle	5,702,000
Chesapeake Western	3,294,000
Commonwealth Railway Inc.	1,622,000
Deepwater Terminal	491,000
Norfolk & Portsmouth Belt Line	3,321,000
North Carolina & Virginia	338,000
Shenandoah Valley	2,110,000
Virginia Southern	7,490,000
Winchester & Western Railroad Co.	3,819,000
TOTAL	**$ 67,828,000**

7-14-08

Class I and Shortline Project Results

- Improves freight rail shipping and diverts truck traffic to rail along Virginia highways: I-81, I-95, I-64, I-66, I-85, I-295, I-495 and Route 460, and outside Virginia along major routes such as I-20, I-40 and I-75
- Multistate agreements needed to maximize truck diversion
- Includes construction of rail yards and increases capacity
- Improves shortline rail systems in Virginia to accommodate heavier freight shipments and faster passenger rail service

7-14-08

Port Projects

- NIT Central Rail Yard Expansion
- Craney Island Rail Connection
- Norfolk/Portsmouth Beltline Railroad Improvements

Ports of Hampton Roads Project Costs	
Project	Costs
NIT Central Rail Yard Expansion	$40.15 million
Craney Island Rail Connection	$130 million
Norfolk Portsmouth Belt Line Railroad	$8.75 million
Total Costs	**$178.9 million**

7-14-08

PORT PROJECTS

Norfolk International Terminal (NIT) Central Rail Yard Expansion (Route 460)

Project Cost: $40.15 million

At a Glance

:: Diverts port shipments from truck to rail

:: Nearly doubles today's on-terminal rail handling capacity

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

Annual Benefits

Removes 180,310 trucks from Virginia highways

Saves over 24.3 million gallons of fuel

Saves 47,072 tons of CO_2 emissions

7-14-08

PORT PROJECTS

Craney Island Rail Connection (Route 460)

Project Cost: $130 million

At a Glance

:: Three-phase project that builds on I-664/Route 164 Median Rail Safety Relocation Project

:: Adds rail capacity to major new port facility

:: Supports transport of approximately 50 percent of projected 1.43 million containers through this facility

Craney Island Rail Connection Development Status

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

Annual Benefits

Removes 848,571 trucks from Virginia highways

Saves over 114 million gallons of fuel

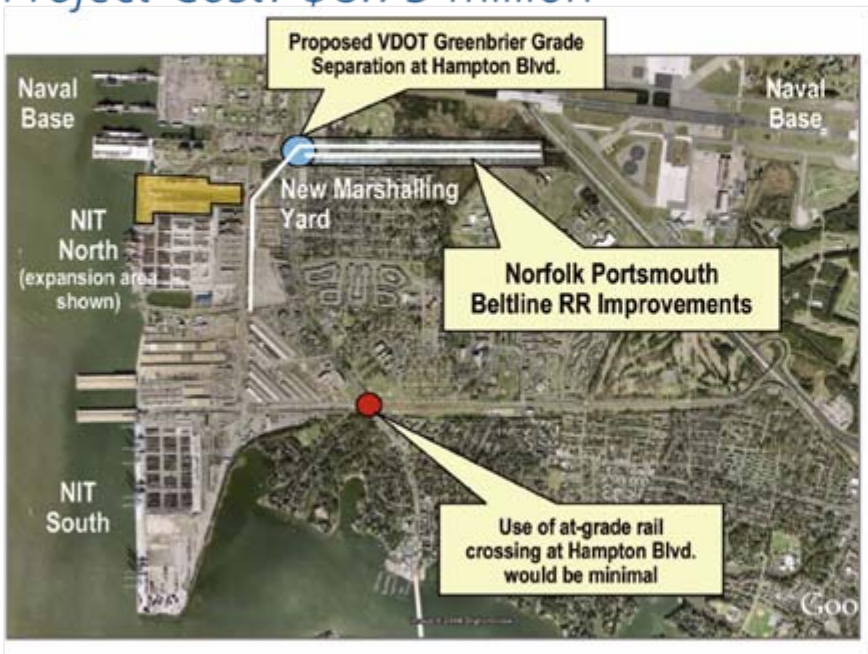
Saves 221,528 tons of CO_2 emissions

7-14-08

PORT PROJECTS

Norfolk Portsmouth Belt Line Railroad Improvements (Route 460)

Project Cost: $8.75 million



At a Glance

:: Complementary to the NIT Central Rail Yard Expansion

:: Adds off-site marshalling yard, separating highway traffic from train movements

:: Improves operating efficiency of trains traveling to and from on-terminal railyard

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

Annual Benefits

Eliminates 12,852 hours per year of delays (based on 18 train crossings per day) at an existing at-grade crossing at NIT and Hampton Boulevard

7-14-08

Port Project Results

- Increases rail capacity and provides competitive port shipping services
- Diverts more port shipments from truck to rail to help manage highway congestion
- Supports the transport of up to 50% of projected containers at Craney Island
- Nearly doubles today's on-terminal rail handling capacity at Norfolk International Terminal
- Improves rail crossing safety

7-14-08

Passenger Rail Projects

Passenger Rail Project Costs	
Project	Costs
Commuter Rail Alexandria to Manassas	$8.25 million
Commuter Rail Gainesville to Haymarket	$281 million
Commuter Rail Fredericksburg to Washington, DC	$470 million
Intercity Rail Urban Crescent	$757 million
Intercity Rail TransDominion Express	$206 million
Total Costs	**$ 1.7 billion**

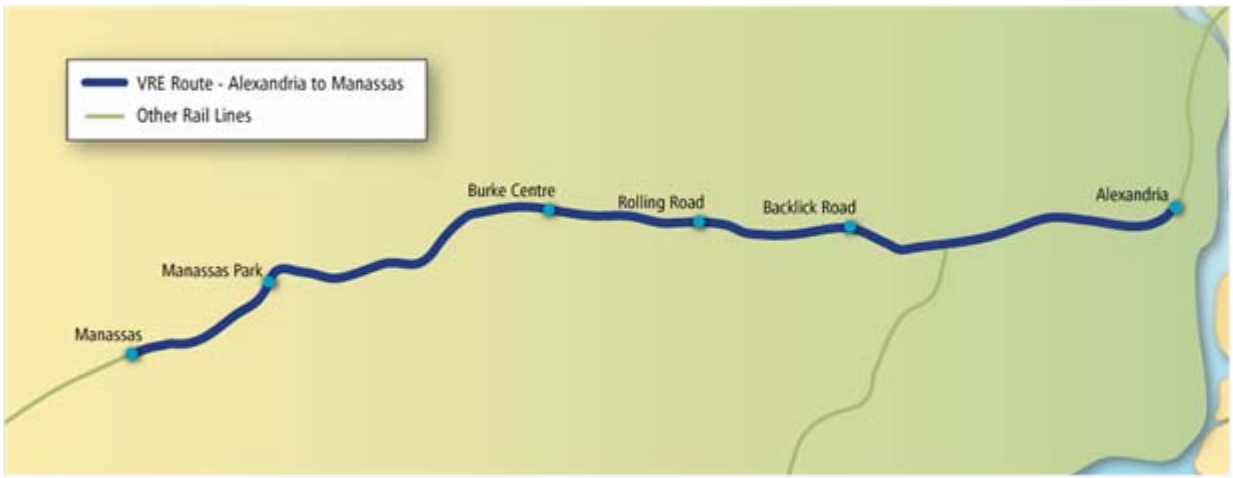
- Commuter Rail Improvements (I-66 and I-95):
  - VRE Alexandria to Manassas (I-66)
  - VRE Manassas to Gainesville/ Haymarket Expansion (I-66)
  - VRE Fredericksburg to Washington, DC (third track)
- Intercity Rail:
  - Urban Crescent Express (I-64 and I-95)
  - TransDominion Express (TDX) (I-81 and Routes 29/460)

7-14-08

PASSENGER RAIL PROJECTS

VRE Alexandria to Manassas (I-66)

Project Cost: $8.25 million



Alexandria to Manassas Route Development Status

Task	Proposed Completion Dates
Planning and Analysis	N/A
Preliminary Engineering	N/A
Final Design	N/A
Construction	2009
Operation	2014

Annual Benefits

Removes 53,091 cars from Virginia highways

Saves over 24.3 million gallons of fuel

Saves 47,072 tons of CO_2 emissions

At a Glance

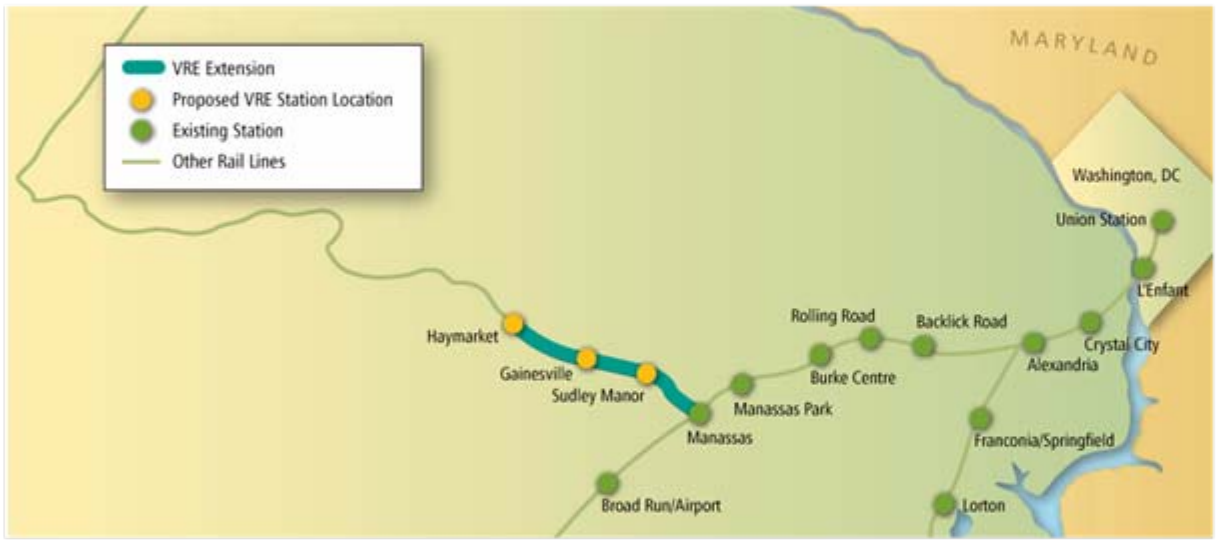
:: Upgrades track and improves the reliability of VRE operations by enabling increased train speed

7-14-08

PASSENGER RAIL PROJECTS

VRE Gainesville to Haymarket Expansion (I-66)

Project Cost: $281 million



Gainesville to Haymarket VRE Expansion Development Status

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

Annual Benefits

Removes 430,556 cars from Virginia highways

Saves 1.7 million gallons of fuel

Saves 7,756 tons of CO_2 emissions

At a Glance

:: Studies viability and potential locations of future passenger rail stations between Manassas and Gainesville/Haymarket

:: Requires extensive upgrading of existing freight line for passenger rail service

:: Next steps are additional environmental review and preliminary design

7-14-08

PASSENGER RAIL PROJECTS

VRE Fredericksburg to Washington, DC Improvements (I-95, I-395, I-495)

Project Cost: $470 million

At a Glance

:: Expands rail service and improves existing service through signalization, station and rail infrastructure improvements, including:

- Automatic train control cab signalization
- VRE second platforms at Woodbridge, Lorton and Rippon Stations
- Arkendale to Powell's Creek third track and station
- Capacity improvements between Franconia/Springfield and Fredericksburg, excluding major bridges

Fredericksburg to Washington, DC Rail Improvement Status

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

Annual Benefits

Removes over 1.4 million cars from I-95 Corridor

Saves over 7.9 million gallons of fuel

Saves 46,877 tons of CO_2 emissions

7-14-08

PASSENGER RAIL PROJECTS

Urban Crescent Express (I-64, I-95, I-295, Route 460)

Project Cost: $757 million

At a Glance

:: Freight and passenger rail improvements between Fredericksburg, Richmond and Newport News

:: Station improvements, including the facilitation of transit-oriented development near stations

:: Best passenger rail ridership increase opportunity in Commonwealth, potentially doubling Amtrak corridor ridership by 2015

Urban Crescent Express Project Status

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

Annual Benefits

Removes over 1.3 million cars from Virginia highways

Saves over 9.5 million gallons of fuel

Saves 62,072 tons of CO_2 emissions

7-14-08

PASSENGER RAIL PROJECTS

TransDominion Express (TDX) (I-81 and Routes 29/460)

Project Cost: $206 million

At a Glance

:: Enhances mobility along the Route 29, I-81 and Route 460 corridors by improving infrastructure to support higher speeds for passenger rail

:: Phase I: Washington, DC to Lynchburg

:: Phase II: Lynchburg to Roanoke

:: Phase III: Roanoke to Bristol

:: Phase IV: Lynchburg to Richmond

TransDominion Express Project Status

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

Annual Benefits (Phase I Only)

Removes 53,091 cars from I-81 and Route 29 Corridors

Saves over 164,637 gallons of fuel

Saves 983 tons of CO_2 emissions

7-14-08

Passenger Rail Project Results

- Supports more frequent service in the Urban Crescent between Washington, DC, Richmond and Newport News
- Supports more frequent service in the Route 29 corridor between Lynchburg and Washington, DC, and implementation of Phase 1 of the TransDominion Express
- Supports expansion of VRE service between Manassas and Gainesville/Haymarket
- Supports new service, station improvements, travel time improvements and more frequent service along existing routes
- Upgrades track and other facilities/infrastructure for higher speed service

High Speed Rail Project (I-95, I-295, I-495, I-85, I-64, Route 460)

High Speed Rail Project Costs	
Project	Costs
Southeast High Speed Rail Project	$1.2 billion
Total Costs	**$1.2 billion**

- High speed rail service between Washington, DC and Raleigh, NC
- Total cost does not include the cost of major river and stream crossings
- Total cost does not include the cost of electrification and improvements between Richmond and Washington, DC

7-14-08

HIGH SPEED RAIL PROJECT

Southeast High Speed Rail Project (I-95, I-295, I-495, I-85, I-64, Route 460)

Project Cost: $1.2 billion

At a Glance

:: Studies higher speed rail connections between Hampton Roads and Richmond's Main Street Station to Washington, DC

:: Also studies creating high speed rail corridor between Washington, DC and Raleigh, NC

:: Pending legislation in U.S. Congress could impact feasibility of program

Southeast High Speed Rail Project Status

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

Annual Benefits

Removes over 1.1 million cars from Virginia and North Carolina highways

Saves over 5.6 million gallons of fuel

Saves 33,713 tons of CO_2 emissions

7-14-08

Total Project Benefits

- Total public benefits of the potential projects are as follows:
  - 7.3 million cars and trucks removed from highways
  - 445 million gallons of fuel saved
  - 1.2 million tons of carbon emissions saved

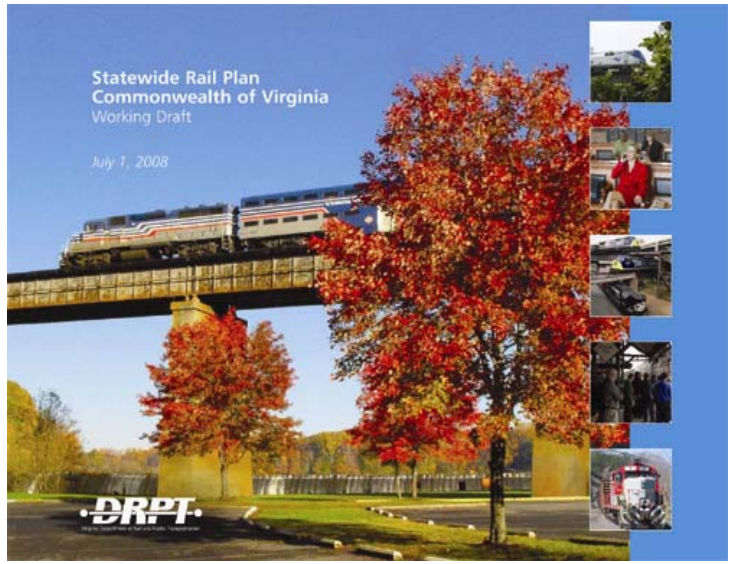
Project Funding

- The capital cost of all proposed projects is approximately $5 billion, and current estimated available state funding from 2009 to 2035 is $1.3 billion
- Commonwealth's rail programs foster the sharing of costs and benefits
- Potential sources of funds:
  - Railroads
  - Commonwealth of Virginia, from dedicated funding sources as well as special allocations
  - Local jurisdictions, including current Northern Virginia contribution of 13 percent of VRE operating costs
  - Federal funding, including potential Amtrak bills that include state grants for intercity rail improvements
- Operating costs and other funding elements will be identified in the Rail Action Plan

7-14-08

Next Steps

- Key Actions
  - Draft Plan released for public comment in July 2008
    - Five public meetings statewide
    - Available online: http://www.drpt.virginia.gov
  - Rail Action Plan issued in September 2008
    - Includes funding strategies, proposed allocation of resources and project implementation schedules
    - Public comments accepted
  - Statewide Rail Plan finalized in November 2008



- Future Rail Plan Updates:
  - Six Year Improvement Program yearly update
  - Comprehensive update on a five-year basis as a part of VTrans

7-14-08