

## **ITEM 9 - Information**

April 18, 2012

### Briefing on the Possible Addition of Tolling on I-95 in Virginia

**Recommendation:** Receive briefing on the I-95 Corridor Improvement Program and how toll revenue may possibly offset safety, mobility, and system preservation needs in the corridor, and on the enclosed Draft I-95 Corridor Vision document.

**Issues:** None

**Background:** The Virginia Department of Transportation (VDOT) is currently pursuing the possible addition of tolling on the I-95 corridor (south of the City of Fredericksburg at mile marker 126) through the Federal Highway Administration's Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP). VDOT is seeking feedback from metropolitan planning organizations and local jurisdictions on the program and Draft I-95 Corridor Vision document (available at: [http://www.virginiadot.org/projects/i-95\\_corridor\\_improvement.asp](http://www.virginiadot.org/projects/i-95_corridor_improvement.asp)).



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

1401 EAST BROAD STREET  
RICHMOND, VA 23219-2000

**Gregory A. Whirley**  
Commissioner

April 5, 2012

Ronald Kirby, Director of Transportation Planning  
National Capital Region Transportation Planning Board  
c/o Deborah Etheridge, Assistant to the Director  
Metropolitan Washington Council of Governments  
777 North Capitol Street NE, Suite 300  
Washington, DC 20002

**SUBJECT: I-95 Tolling**  
State Project Number: UPC 102879

Dear Mr. Kirby:

The Virginia Department of Transportation (VDOT) is preparing an application to the Federal Highway Administration (FHWA) requesting approval to potentially toll I-95 in the Commonwealth. As part of the supporting studies to accompany the application, VDOT is preparing an Environmental Scoping Analysis to address potential environmental impacts of various tolling scenarios. We are asking for your help in identifying important environmental issues and concerns that should be addressed in the studies. Please send your comments and suggestions to me at the above address. We would like to receive your input by **April 27, 2012**.

At this time, no decisions have been made on tolling rates, methods, or locations and projects that might be funded by revenues generated by tolling have not been specifically identified. The information to be developed for the Environmental Scoping Analysis may be used later for documentation that may be prepared for purposes of the National Environmental Policy Act (NEPA).

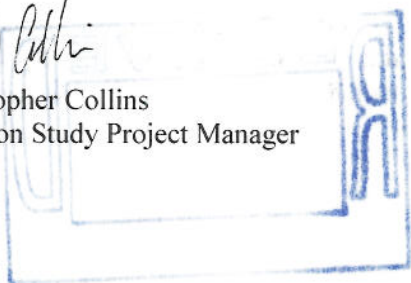
Additional information is available on VDOT's website at:

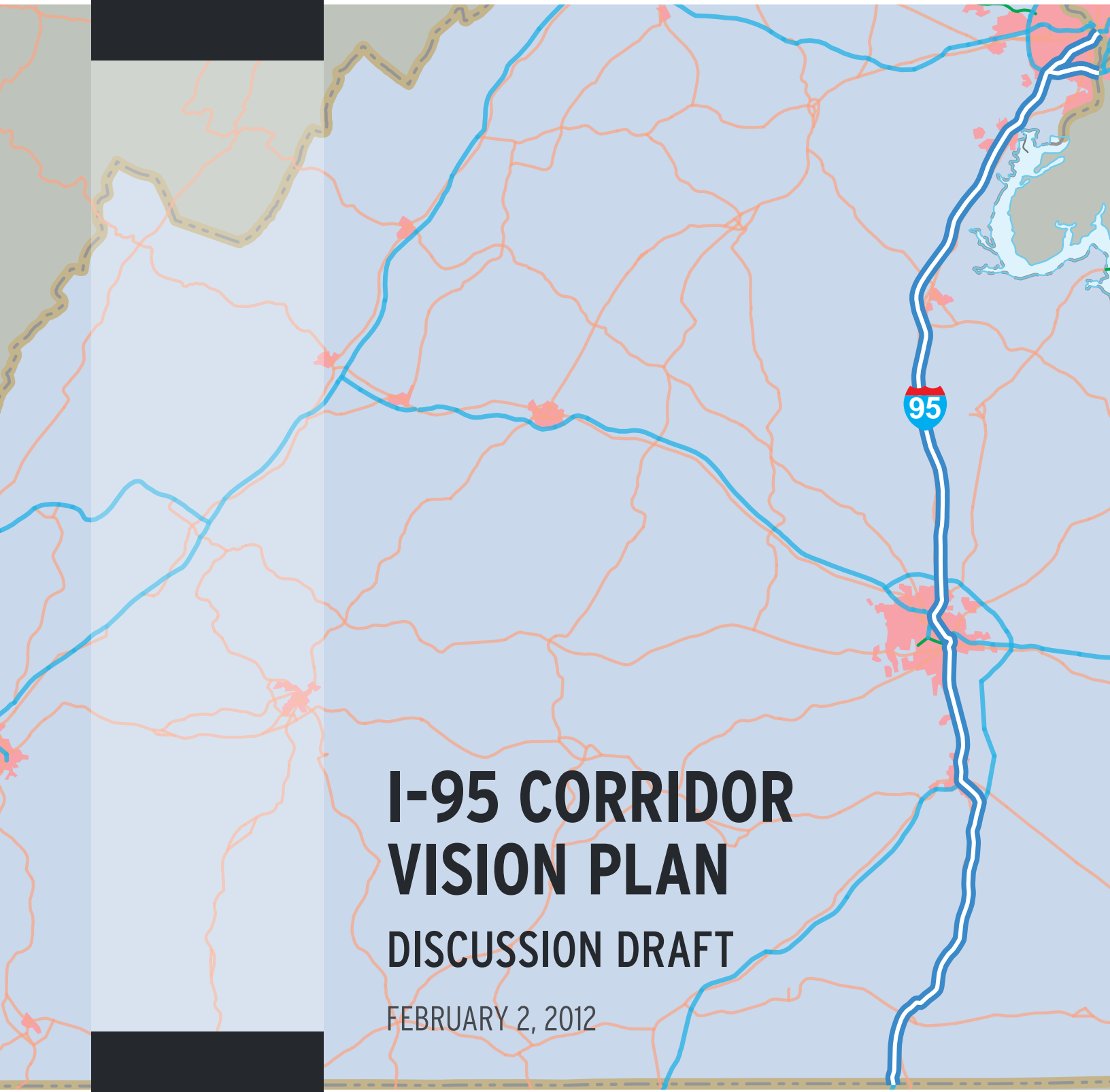
[http://www.virginiadot.org/projects/i-95\\_corridor\\_improvement.asp](http://www.virginiadot.org/projects/i-95_corridor_improvement.asp)

However, if you have questions or need additional information about the study, please contact Michael Estes at (804) 225-2813, or email him at [Michael.Estes@VDOT.Virginia.gov](mailto:Michael.Estes@VDOT.Virginia.gov). If you have questions about environmental matters, you can reach me at 804-225-4249 or email me at [CG.Collins@VDOT.Virginia.gov](mailto:CG.Collins@VDOT.Virginia.gov).

Sincerely,

Christopher Collins  
Location Study Project Manager





# I-95 CORRIDOR VISION PLAN

DISCUSSION DRAFT

FEBRUARY 2, 2012

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# Executive Summary

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Interstate 95 serves local, regional and interstate travel needs from Florida to Maine. In Virginia, I-95 is an economic engine that serves a broad range of users and functions, connecting Northern Virginia with Fredericksburg, Richmond and the tri-cities of Petersburg, Colonial Heights and Hopewell. The highway links 17 counties and cities and approximately 1.7 million jobs.

In service since the late 1950s, I-95 has seen more than 50 years of increasing travel demand, reinvestment and expansion. Today, heavy traffic volumes stress an aging infrastructure, creating needs for extensive maintenance to ensure a safe and reliable facility. Much of I-95's infrastructure has reached or exceeded its expected lifespan and requires major rehabilitation or replacement.

The ability of I-95 to move people and goods safely and efficiently requires adequate capacity and infrastructure reliability. By the year 2035, approximately two-thirds (120 miles) of I-95 is expected to be at or above its peak period capacity resulting in longer travel times and lower reliability.<sup>1</sup> This scenario has the potential to negatively affect the quality of life for a vast number of Virginians, hurt business and inconvenience visitors.

Because of its vital importance to the state economy, its residents, workers and visitors, Virginia envisions the I-95 facility as a state-of-the-art corridor where (1) the physical assets of the roadway are consistently maintained to state and industry standards; and (2) the operational aspects of the facility are enhanced to provide safe, efficient and reliable movement of people and goods within and through the Commonwealth.

Four goals have been identified to support this vision:

1. **Safety** – Reduce fatalities and injuries on I-95.
2. **System Maintenance and Preservation** – Maintain and preserve the infrastructure to meet standards.
3. **Mobility** – Provide for efficient and reliable movement of people and goods on I-95.
4. **Economic Vitality** – Support the growth of Virginia and the United States economy.



Meeting these goals to achieve the vision will require new investments, but current funding available to Virginia Department of Transportation (VDOT) now or in the future is not sufficient. Preliminary planning estimates indicate that it would cost approximately \$6.4 billion to address current and anticipated future congestion on the I-95 corridor through the year 2035.<sup>2</sup> Infrastructure maintenance and replacement could cost another \$5.7 billion. To ensure that needed investments in I-95 are completed, new revenue sources are critical. Tolling I-95 represents one viable revenue source to make the broader vision for I-95, as described in this document, a reality.

## The I-95 Corridor...

- Opened to traffic in the 1950s
- Serves 45% of the Commonwealth's population
- 178 miles
- Links 1.7 million of the Commonwealth's jobs
- 427 structures
- Connects Virginia to the world's largest regional economy
- 17 jurisdictions
- USDOT's Corridor of the Future
- 8,000,000 sq. ft. of warehouse/distribution facilities
- Has been identified as having some of the worst congestion levels in the US
- 40% of the interstate traffic in Virginia uses I-95
- Contains two of three Highway Safety Corridors in Virginia
- Provides access to three international airports in Virginia
- 67 fatal crashes on the I-95 mainline and ramps (2008-10)
- Serves the Ports of Richmond and Norfolk

## The Needs of I-95:

80%

mainline bridges that are more than 40 years old

2/3

portion of I-95 projected to be at or above its capacity by 2035

72%

I-95 mainline pavement in need of maintenance

40%

potential increase in travel times along the I-95 corridor by 2035

1/3

portion of I-95 currently operating at or above its capacity

## Investment in the Corridor:

\$1.5B

projected 25-year capital investment in the I-95 corridor (FY 2010-35) based on current levels

\$1.0B

projected 25-year operations and maintenance investment in the I-95 corridor (FY 2010-35) based on current levels

\$6.4B

identified 25-year capital needs of the I-95 corridor

\$5.7B

projected 25-year operations and maintenance needs of the I-95 corridor

\$9.6B

project funding gap for I-95 corridor investment over the next 25 years



# Corridor Overview

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The I-95 corridor and study area for this effort has been defined as the entire 178-mile length of the interstate within Virginia from the Virginia/North Carolina border to the Virginia/Maryland border. The I-95 corridor connects the major metropolitan areas of Northern Virginia, Fredericksburg and Richmond with the tri-cities of Petersburg, Colonial Heights and Hopewell. Not only does the corridor connect major metropolitan areas, but it also links 17 jurisdictions and an estimated 1.7 million jobs in the I-95 corridor.<sup>3</sup>

I-95 is the primary means of north/south travel for both passengers and freight traveling within and through the Commonwealth. Almost 40 percent of the total interstate traffic within Virginia uses the I-95 corridor.

## Key Functions

I-95 spans the entire east coast of the United States from Florida to Maine. In Virginia, the I-95 corridor plays a major role supporting a myriad of different functions, which include:

- Interstate travel. I-95 is considered to be the “Main Street” of the East Coast.
- National Connectivity (National Highway System (NHS) Route).
  - › Link to Maryland, Washington, DC, and the Capital Beltway from points south.
  - › Link to North Carolina, South Carolina and other southern states from points north.
- Access to military bases and sites (within Virginia: Pentagon, Quantico, Fort Belvoir, Fort AP Hill and Fort Lee).
- Mobility for commuters within the urban areas along I-95 (Northern Virginia, Fredericksburg, Richmond and the tri-cities metropolitan areas).
- Multi-modal corridor (Metrorail, VRE, Amtrak, Express Bus, HOV/HOT Lanes and multiple local public transportation services).
- Freight corridor (trucks, CSX rail lines, Port of Richmond, Port of Norfolk and intermodal transfer points).
- Tourism/recreation corridor (access to the beach, state parks, museums and other attractions).

## Major I-95 Corridor Components

In the Commonwealth of Virginia, I-95 serves as the main north/south through corridor, running from milepost 0 at the Virginia/North Carolina border to milepost 179 on the Virginia/Maryland border. (Figure 1, p.4) It is the primary means of north/south travel for both passengers and freight traveling within and through the Commonwealth. Almost 40 percent of the total interstate traffic within Virginia uses the I-95 corridor.<sup>4</sup> It links the Washington, DC metropolitan area to Virginia’s capital, Richmond, with thousands of commuters using the corridor to travel to and from the Greater Washington and Richmond metropolitan areas daily. It provides access to three international airports in Virginia: Dulles International Airport, the Ronald Reagan National Airport, and Richmond International Airport. I-95 also serves as a high capacity multi-modal corridor, and was identified by the Commonwealth Transportation Board in 2009 as a Corridor of Statewide Significance (CoSS). I-95 has also been designated as a Corridor of the Future by the United States Department of Transportation.

The 178 miles of I-95 varies greatly from south to north, ranging from a rural four-lane highway at the border with North Carolina to a 10-lane highway used primarily for commuting in Northern Virginia

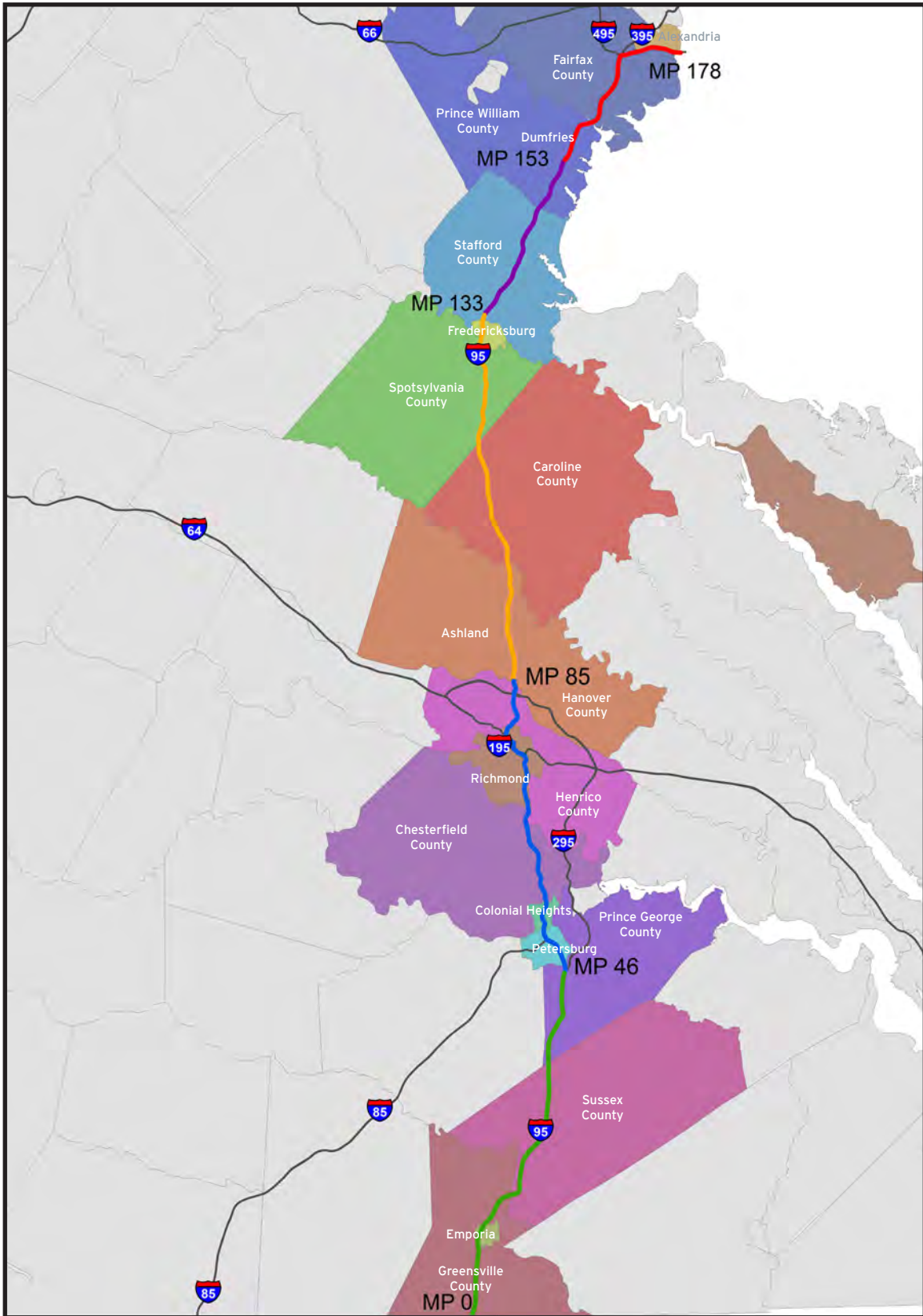


Figure 1: I-95 Segments in Virginia



and to the nation's capital. According to the 2011 Congested Corridors Report published by the Texas Transportation Institute, portions of I-95 have been identified as having some of the worst congestion levels in the United States.<sup>5</sup> For the purposes of developing the vision for the I-95 corridor, the interstate has been divided into five segments, based on shared operational or regional traits. Each segment has unique travel characteristics, distinct operational challenges and serves different metropolitan areas. For example, Annual Average Daily Traffic (AADT) along I-95 varies greatly, from 39,000 vehicles per day at the North Carolina border to more than 180,000 near the Alexandria/Washington, DC metropolitan area (2009 data). A brief description of each of the five segments follows.

Highway Safety Corridors were identified by the Virginia State Police, the Department of Motor Vehicles and the Department of Transportation in efforts to combat highway fatalities. Two of the three highway safety corridors in Virginia are on I-95.

### **Segment 1: I-95 from milepost 0 to 46 (Rural)**

This segment presents traffic patterns characteristic of rural areas, without morning or afternoon peaks.

Segment 1 connects North Carolina to the southern areas of the Commonwealth and passes through the counties of Greensville, Brunswick, Sussex, Dinwiddie, Prince George and the City of Emporia. For its entirety, this segment of I-95 maintains a basic four-lane cross section with posted speeds of 65 to 70 mph. Based on 2009 counts, this segment carried between 33,000 and 40,000 vehicles per day.<sup>6</sup>

### **Segment 2: I-95 from milepost 46 to 85 (Richmond)**

This segment is both urban and suburban in nature, and presents the directionality and peak travel patterns expected in a major urban area. This segment contains

a Highway Safety Corridor, one of two identified on the I-95 corridor in Virginia.

Per the request of the 2003 General Assembly, Highway Safety Corridors were identified by the Virginia State Police, the Department of Motor Vehicles and the Department of Transportation, in efforts to combat highway fatalities. Two of the three highway safety corridors in Virginia are on I-95.<sup>7</sup> The Highway Safety Corridor consists of a 13-mile stretch of I-95 that extends from Bells Road (mile marker 69) in the southern part of Richmond to Parham Road (mile marker 83) north of the city. This portion of the roadway was identified as a Highway Safety Corridor due to posting a crash rate more than twice the state average.

Segment 2 goes through the City of Richmond, and its metropolitan area containing a population of approximately 1.2 million.<sup>8</sup> In the Richmond metropolitan area, the I-95 corridor can be viewed as two major facilities, I-95 itself and the parallel I-295 eastern bypass facility. The I-95/I-295 interchange represents a major diversion point along the corridor for traffic moving in both north-south and east-west directions. Interstate 295 functions as an eastern beltway around the City of Richmond, connecting I-95 to I-64 at points north and south of the capital. At its most narrow section, these two interstate facilities have a total of 10 lanes combined, with six lanes on I-95 and four lanes on I-295. North of the I-64/I-295 interchange, the total corridor cross-section increases to 14 lanes, six on I-95 and eight on I-295. Along this segment, VDOT reported traffic volumes ranging from 28,000 to 152,000 vehicles per day in 2009.<sup>9</sup> Traffic studies along I-295 documented AADT figures ranging from 18,000 to 98,000 in 2009.

### **Segment 3: I-95 from milepost 85 to 133 (Richmond to Fredericksburg)**

This segment is suburban in nature and presents typical peak/off-peak commuter patterns.

Segment 3 connects Richmond to the Fredericksburg metropolitan area and passes through the counties of Hanover, Spotsylvania, Caroline and the City of Fredericksburg, with a combined population of about 300,000.<sup>10</sup> Most of this segment has a posted speed limit of 70 mph. From the I-95/I-295 interchange (north of Richmond) to Fredericksburg, I-95 has a

six-lane cross section configuration, handling AADT between 91,000 and 130,000.<sup>11</sup>

#### **Segment 4: I-95 from milepost 133 to 153 (Fredericksburg to HOV lanes)**

This segment is suburban in nature and presents typical peak/off-peak commuter patterns.

Segment 4 of I-95 starts at the City of Fredericksburg and ends at the starting point of HOV lanes near mile marker 153. This segment covers the counties of Stafford and Prince William, with a combined population of about 540,000<sup>12</sup>, and possesses a six-lane, cross-section configuration with three lanes in each direction.

This segment of I-95 had an AADT count between 136,000 and 145,000 vehicles in 2009<sup>13</sup> and is included in the urbanized areas of both Fredericksburg and Washington, DC.

#### **Segment 5: I-95 from milepost 153 to 178 (HOV lanes to I-495)**

This suburban and urban segment is highly congested, as it serves the greater Washington area.

A portion of this segment contains the northern Highway Safety Corridor located on I-95. The designated Highway Safety Corridor covers 11 miles of I-95, from mile marker 150 at Route 619 in Triangle to mile marker 160 at Route 123. Aggressive and inattentive drivers have made this road worthy of being named a highway safety corridor.

Segment 5 passes through the counties of Prince William, Fairfax and Alexandria, with a combined population of about 1.5 million<sup>14</sup>, and includes two reversible HOV lanes in the median area of the I-95 corridor. The segment has eight lanes with additional auxiliary lanes to accommodate entrance and exit ramps. In some areas the facility has as many as 11 lanes total. VDOT reported traffic volumes ranging from 134,000 to 185,000 vehicles per day based on 2009 counts.<sup>15</sup> In addition to high-traffic volumes, successful express bus service also exists along this section of the corridor, including the terminus of Metro's Blue line at Franconia-Springfield.

Segment 5 experiences heavy traffic congestion, as it serves to connect the suburban areas north of Fredericksburg to Alexandria/Washington, DC. Due to the high levels of congestion in the general use lanes, the HOV lanes are among the most successful in the nation. The most recent I-95 HOV lane and conventional lane occupancy counts indicate that 2.5 people travel in each of the vehicles on the HOV lanes while the general purpose lanes have an occupancy of 1.1 people per vehicle.<sup>16</sup> This segment bears the weight of daily commuter traffic as well as intrastate and interstate freight/truck traffic, while traversing one of the most densely populated areas in the Commonwealth.

Portions of Interstate 95 have been identified as having some of the worst congestion levels in the United States, according to the 2011 Congested Corridors Report published by the Texas Transportation Institute.

# I-95 Vision: Need for Investment in the I-95 Corridor

The I-95 corridor provides vital connectivity for moving people and commerce within Virginia and along the east coast. While I-95 comprises only 17 percent of the interstate miles within Virginia, it carries almost 40 percent of the total interstate traffic in the Commonwealth.<sup>17</sup> The 178 miles of I-95 serves approximately 45 percent of the population and links 44 percent of the jobs in the Commonwealth.<sup>18</sup> Interstate 95 traverses 17 jurisdictions and links more than 8 million square feet of warehouse/distribution facilities<sup>19</sup> from Virginia to the Northeast, the largest regional economy in the world.

Much of the I-95 corridor infrastructure has reached or exceeded its expected lifespan and will require major rehabilitation or replacement.

Sections of I-95 were originally constructed and open to traffic beginning in the late 1950s through the mid-1960s.<sup>20</sup> During its lifespan, I-95 has seen increasing travel demand and deteriorating levels of service. These heavy traffic volumes stress the infrastructure, requiring extensive maintenance to ensure a safe and reliable facility. Currently, much of the I-95 corridor infrastructure has reached or exceeded its expected lifespan and requires major rehabilitation or replacement by 2035.

According to VTrans 2035, the Commonwealth's Statewide Multi-Modal Transportation Plan, approximately one-third (60 miles) of the I-95 corridor in Virginia currently operates either at or above its capacity. By the year 2035, approximately two-thirds (120 miles) of the I-95 corridor is expected to be at or above its capacity. This degraded service is expected to increase travel times in the corridor by up to 40 percent with corresponding decreases in travel time reliability.<sup>21</sup>

All roads wear out over time, as has I-95, despite the ongoing maintenance program VDOT has upheld on the corridor. Much of the corridor infrastructure is 50 to 70 years old.<sup>22</sup> When a roadway of the importance of I-95 reaches the end of its design life, major rehabilitation or complete reconstruction may be warranted. In addition to replacing the infrastructure asset, a complete reconstruction of I-95 would allow VDOT to implement improvements necessary to bring the facility up to current standards. These upgrades are necessary to enhance safety, improve mobility and reliability.

Current funding is not able to keep up with the needs of the I-95 corridor. The VDOT Six-Year Improvement Program for fiscal years 2012-2017 includes more than \$2 billion of needs in the I-95 corridor.<sup>23</sup> VDOT has invested approximately \$42 million in I-95 maintenance and operations in fiscal year 2010<sup>24</sup> and the needs are growing. The looming costs of maintenance, preservation, rehabilitation and operations have and will continue to increase disproportionately to the available funding. A change in approach is required.

Virginia envisions the I-95 facility as a highway where: (1) the physical assets of the roadway are consistently maintained to state and industry standards; and (2) the operational aspects of the facility are enhanced to provide safe, efficient and reliable movement of people and goods within and through the Commonwealth.

Preliminary planning estimates indicate that it would cost approximately \$6.4 billion to address current and anticipated future congestion on the corridor through the year 2035.<sup>25</sup> To ensure that needed reconstruction and expansion of the I-95 corridor is attainable, new revenue sources are needed. Current funding is not able to keep up with the needs of the I-95 corridor. Tolling the I-95 corridor represents a viable revenue source that VDOT could utilize to make the broader vision for I-95, as described in this document, a reality.

# I-95 Corridor Goals, Vision and Strategies

The I-95 corridor goals align with prior statewide and regional planning efforts on the corridor and are consistent with goals from other statewide and regional multi-modal plans, specifically those identified in VTrans 2035. The I-95 goals are specific to the corridor and align with desirable targets for strategic improvement to I-95.

## I-95 Corridor Strategies

Considering each of the major portions of the I-95 facilities, initial strategies have been identified to support incremental movement toward reaching the identified goals. Many of the strategies identified benefit several of the goals, leading to positive synergy in addressing the needs of the corridor. The linkage of the goals and strategies are shown in Figure 2.

The strategies fall into two general approaches involving the physical aspects of the highway. It is this synergy of goals and tangible need that, when combined, define the vision for the I-95 corridor.

**Infrastructure Management** refers to activities that define, monitor and maintain conditions regarding the existing physical aspects of the corridor. Infrastructure management relates to the “3 R” activities of resurfacing, restoration or rehabilitation, as well as the broad area of monitoring physical aspects and completing needed maintenance activities. Infrastructure management could also include the full replacement of infrastructure.



Figure 2: I-95 Vision Goals are Linked to Infrastructure Management and Capacity Improvements Strategies

**Capacity Improvements** are actions that increase a transportation facility’s ability to accommodate a moving stream of people or vehicles in a given time period safely and efficiently. Capacity improvements are intended to enhance the ability of the corridor to improve the safety, efficiency and reliability of travel during the peak periods. Capacity improvement efforts include a portfolio of strategies, projects and programs designed to make the facility operate at the maximum efficiency.



Capacity improvements may include the following initiatives:

- Roadway and interchange improvements.
- New interchanges or ramps to improve mobility and accessibility.
- Improved operations aided by intelligent transportation systems (ITS) technologies to increase efficiency of travel.
- Incident management activities to alleviate related delays and degradation of travel time reliability.
- Demand management actions to reduce peak hour demands by removing vehicle trips through ride sharing or other transportation demand management (TDM) practices.

## I-95 Corridor Goals

For each of the corridor goals, a variety of strategies could be applied, and recommendations are proposed, to lead toward accomplishing the defined goals. The alignment of corridor goals with specific actions and strategies are described below. Strategies reflect actions or recommendations identified in statewide and regional studies that were published prior to this effort, or are currently underway.

The four specific goals identified for the I-95 corridor include:

- Safety.
- System Maintenance and Preservation.
- Mobility.
- Economic Vitality.

### Goal 1: Safety

Safety of all users is the key goal for the I-95 corridor. VDOT aims to reduce fatalities and injuries on the roadway system consistent with both national and Commonwealth of Virginia priorities. In the years 2008-2010, there were a total of 67 fatal and 5,444 serious injury crashes on the I-95 mainline and ramps. The 67 fatal crashes represents 23 percent of the total interstate highway fatalities reported in the Commonwealth in the 2008-2010 timeframe.<sup>26</sup> Along

the I-95 corridor there are currently two Highway Safety Corridors. These are located between mile markers 69 and 83 in the Richmond area, and mile markers 150 and 160 in the Northern Virginia area (Figures 3 and 4, respectively, below). The high traffic volumes and high crash rates make a focus on safety essential for the I-95 corridor and its associated facilities. As a key part of the transportation system, the effective function of I-95 is essential to national defense, emergency evacuation plans for communities adjacent to I-95, and daily intrastate and interstate travel.

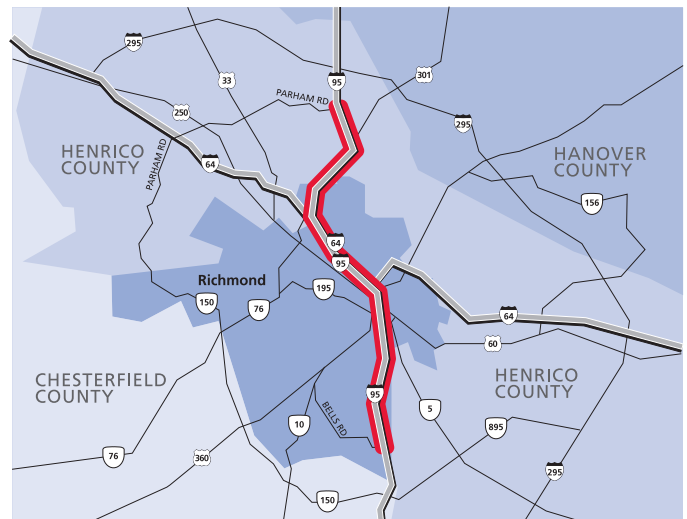


Figure 3: I-95 Richmond - Bells Road to Parham Road (Source: VDOT Highway Safety Corridors)

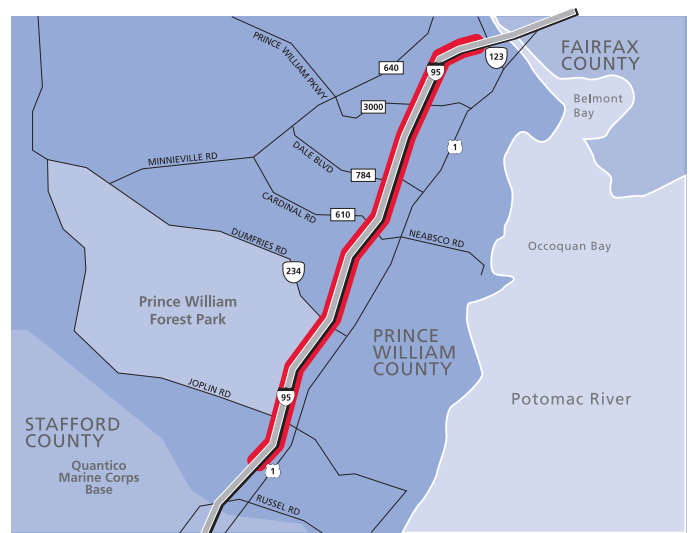


Figure 4: I-95 Northern Virginia - Joplin Road to Gordon Road (Source: VDOT Highway Safety Corridors)

The frequency and clusters of crashes along I-95 highlights the need for strategies to address safety related goals for the corridor. Many of the strategies that address safety on the corridor would also improve security and mobility.

Twenty-three percent of the total interstate highway fatalities reported in the Commonwealth occurred on the I-95 mainline and ramps in 2008-2010.

These strategies could include:

- Monitoring high crash locations and provide resources to address issues as they are identified. Addressing high fatal and injury crash locations would be a high priority in allocating funding for roadway improvements.
- Upgrading existing facilities to modern safety guidelines and standards. This would include providing for and maintaining pavement markings and delineators, overhead lighting where required to address safety issues, providing high friction pavements and bridge decks, and high maintenance standards for signs and guardrails.
- Performing safety audits on the design of any capacity improvement projects that alter the existing roadway components.
- Adding additional safety related elements to the corridor. There are locations where wider shoulders or clear zones and upgraded guardrails and barriers could be provided along with increased safety features incorporated into designs for maintenance and construction projects. An essential implementation element is having clearly defined standards and providing resources so these standards do not need to be compromised.
- Modifying interchanges to increase safety. Newer interchange designs that increase ramp lane lengths and limit weaving/merging sections found in traditional cloverleaf designs can be utilized to



reduce crashes and their severity in many locations. Improving the ramp terminal junctions with the cross road will also reduce crashes. Retrofitting or modifying existing interchanges for safety could be a major factor in achieving the safety goal of I-95.

- Increasing the frequency and coverage of Safety Service Patrols (SSP), to both assist motorists and provide enhanced safety at incident locations by reducing the potential for secondary incidents and improving the reliability of travel by clearing incidents faster.



# Goal 1: Safety

Safety of all users is the key goal for the I-95 corridor. VDOT aims to reduce fatalities and injuries on the roadway system consistent with both national and Commonwealth of Virginia priorities. High traffic volumes and high crash rates make a focus on safety essential for the I-95 corridor. As a key part of the transportation system, the effective function of I-95 is essential to national defense, emergency evacuation plans for communities adjacent to I-95, and daily intrastate and interstate travel.

## Spotlight on Potential Projects:

### I-95/I-64 Overlap Study Improvements

The stretch of I-95 in downtown Richmond between the Bryan Park Interchange and the James River bridge is not only one of the oldest stretches of interstate in Virginia, but is also an area designated as part of a highway safety corridor. This section of the interstate has closely spaced interchanges, short weaves, difficult merges and high traffic volumes. These conditions all contribute to a crash rate more than two times the statewide average.

VDOT is working with the Richmond Regional Planning District Commission and the City of Richmond on an I-95/I-64 Overlap Study to identify deficiencies and develop potential short- and long-term improvement recommendations, which have been estimated to cost approximately \$150 million according to VSTP 2035. These improvements are currently unfunded.

### Colonial Heights/Petersburg Interchanges

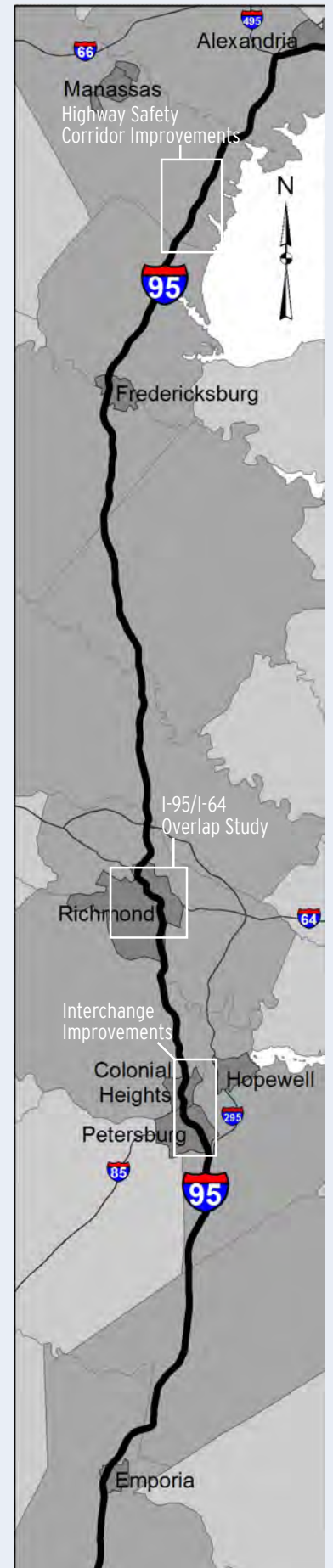
As one of the oldest sections of I-95, interchanges in Colonial Heights and Petersburg need to be upgraded to safely serve the increased traffic volumes of today. This could include ramp improvements at the Temple Avenue interchange or longer-term improvements at the Rives Road interchange. These projects, projected to cost approximately \$100 million according to VSTP 2035, are not fully funded.

### Highway Safety Corridor Improvements

Aggressive and inattentive drivers have made the section of I-95 between Route 619 (Triangle) and Route 123 worthy of a highway safety corridor designation. Additional funding to enhance enforcement, widen shoulders and improve the roadside could be used to accelerate the implementation of improvements in this corridor.

## Strategies:

1. *Monitor high crash locations.*
2. *Upgrade existing facilities to modern safety guidelines and standards.*
3. *Perform safety audits.*
4. *Add safety related elements to the corridor.*
5. *Modify interchanges to increase safety.*
6. *Increase the frequency and coverage of Safety Service Patrols (SSP).*



## Goal 2: System Maintenance and Preservation

VDOT aims to maintain and preserve the I-95 infrastructure. Today, many aspects of the I-95 infrastructure, including roadway, bridges, structures and supporting facilities, are aging and have extremely high traffic volumes and a high percentage of truck traffic. Approximately 95 percent of I-95 in the Commonwealth of Virginia was originally constructed in the 1950s and 1960s.<sup>27</sup> Much of the infrastructure currently has, or in the near future will have, passed its anticipated lifespan and, therefore, requires replacement. Setting standards for the quality of individual assets, monitoring the conditions and accomplishing needed repair and rehabilitation on a regular schedule are essential to the long-term viability of the facility. Also, a regular schedule of preventative maintenance can minimize disruption to the I-95 user by limiting the size and duration of a required work zone. In addition, regular maintenance results in reduced life-cycle costs for the I-95 asset.

Reconstruction of I-95 would allow VDOT to implement improvements necessary to bring the facility up to current standards to enhance safety, improve mobility and reliability.

The high-traffic volumes and truck percentages create significant maintenance and preservation challenges on I-95. Current efforts to maintain and preserve the facility have been short term in nature and narrower in scope than desirable due to the limited funding available. While spot improvements impact the customers for a shorter duration relative to long-term improvements, they must also be accomplished or repeated on a more frequent basis, which ultimately increase travel delays and lost productivity. Among the aspects of the system that have the opportunity to benefit from focused improvement include:

- Roadway pavement.
- Bridges.
- Drainage structures.



*Skippers Safety Rest Area/Welcome Center - I-95 North at Mile Marker 1  
(Source: VDOT Travel Center)*

- Rest areas.
- Park and Ride lots.
- Information and safety facilities (signs, lighting, guardrail).
- Highway operations assets (road weather information systems, cameras, dynamic message signs, gates and traffic sensors).
- Other assets identified by VDOT.

Strategies to address these could include:

- Increased resources to implement needed repairs and to monitor and track key indicators of facility conditions.
- Installation of new technology for monitoring conditions of pavement, bridges and other assets.
- Modernize public use facilities, such as rest areas, to meet demand.

Setting high standards for key condition indicators, while providing sufficient resources for regular maintenance and preservation, would strengthen these strategies.

## Goal 2: System Maintenance and Preservation

VDOT aims to maintain and preserve the I-95 infrastructure. Approximately 95 percent of I-95 in the Commonwealth of Virginia was originally constructed in the 1950s and 1960s. Today, many aspects of the I-95 infrastructure, including roadway, bridges, structures and supporting facilities, are aging and have extremely high traffic volumes and a high percentage of truck traffic. Setting standards for the quality of individual assets, monitoring the conditions and accomplishing needed repair and rehabilitation on a regular schedule are essential to the long-term viability of the facility.

### Spotlight on Potential Projects:

#### Pavement Rehabilitation

Pavement rehabilitation will include both functional and structural improvements to the I-95 pavement, 72% of which is currently in need of maintenance. Functional improvements will focus on preservative and corrective activities to enhance pavement life while structural improvements will address structurally inadequate pavements by adding or replacing material in the existing pavement structure. Focus will initially be on pavement sections that need major rehabilitation and reconstruction. For example, the pavement condition of I-95 in Sussex County is poor. A major rehabilitation of the 33 lane miles of poor condition pavement is anticipated to cost approximately \$49 million.

#### Bridge Rehabilitation

More than half of the bridges on the I-95 corridor are more than 40 years old and 26 bridges are currently rated as structurally deficient. Replacing or improving these bridges would be the primary focus for initial investment of new revenues. For example, a \$14 million project to replace the I-95 bridges over Route 17 in Fredericksburg could be undertaken with the infusion of additional revenues for the I-95 corridor.

#### Modernization of Rest Areas ✱

VDOT has identified approximately \$50 million in improvement needs to I-95 rest areas to meet both current and projected future demands on these facilities. Four of the five rest areas on I-95 are more than 45 years old and are unable to accommodate current user needs. These needs are currently unfunded. For example, the Skippers Rest Area on I-95, just north of the North Carolina border, needs to be updated. It is a car-only facility that is handicap accessible with picnic areas, children's play areas, pet rest areas and a welcome center. The facility hosted more than 1.2 million visitors in 2009.

### Strategies:

1. Accelerate implementation of repairs.
2. New technologies to monitor asset conditions.
3. Modernize public use facilities.



### Goal 3: Mobility

VDOT strives to ensure the efficient and reliable movement of people and goods throughout the corridor. As demand grows in the future, providing efficient and reliable movement along I-95 and the east-west arterials accessing I-95 will be challenging, as many of these roadways are currently operating at deficient levels of service and provide unreliable travel times for roadway users. Many different means can be applied to meet this goal, with the recognition that physical, operational and financial constraints must be balanced in the decision making process.

Approximately 95 percent of I-95 in the Commonwealth of Virginia was originally constructed in the 1950s and 1960s. Much of the infrastructure currently has or, in the near future, will have passed its anticipated lifespan.

Projected traffic volumes beyond capacity along I-95 would have negative impacts for the corridor in the form of increased and less reliable travel times for all users, increased hours of driver delay, reduced air quality, lost income to the freight industry and higher accident rates.

A variety of strategies are available to improve mobility by either providing additional capacity or making better use of existing capacity. These could include:

- Exploring options to reduce single occupant vehicles along urbanized areas of the I-95 corridor.
- Increasing highway capacity through interchange improvements and modifications, interchange construction, and widening in strategic locations.
- Implementing TDM strategies.
- Improve ITS technology applications along the corridor comprehensively using strategies, such as Integrated Corridor Management and Active



Traffic Management. Provide greater coverage for cameras to monitor traffic conditions and increase the use of variable message signs (VMS) and other motorist information technology to improve travel time reliability by providing accurate real time information so that drivers can make the best use of available capacity.

- Implement tolling technologies that maximize the flow of through traffic and minimize vehicle delay.



## Goal 3: Mobility

VDOT strives to ensure the efficient and reliable movement of people and goods throughout the corridor. As demand grows in the future, providing efficient and reliable movement along I-95 and the east-west arterials accessing I-95 will be challenging, as many of these roadways are currently operating at deficient levels of service and provide unreliable travel times for roadway users.

### Spotlight on Potential Projects:

#### I-95 HOV Extension (Garrisonville Road to Massaponax)

Extending the I-95 HOV lanes approximately 17 miles from Garrisonville Road to Massaponax will increase the number of people being moved in the I-95 corridor and provide users with a more reliable travel time through a highly-congested segment of I-95. The HOV extension, currently in the planning stages, could cost more than \$1 billion according to VSTP 2035. The project is not currently funded. The project would serve rapidly growing areas of the Commonwealth in Stafford County, Spotsylvania County and the City of Fredericksburg, and connect with a successful HOV/HOT lane system in Northern Virginia.

#### I-95 Widening (Henrico County to Fredericksburg)

Expanding the basic number of travel lanes on this 46-mile segment of I-95 from six to eight lanes will allow for the efficient movement of people and goods, and help provide more reliable travel times in the corridor. Currently unfunded, this project is estimated to cost approximately \$1.1 billion according to VSTP 2035.

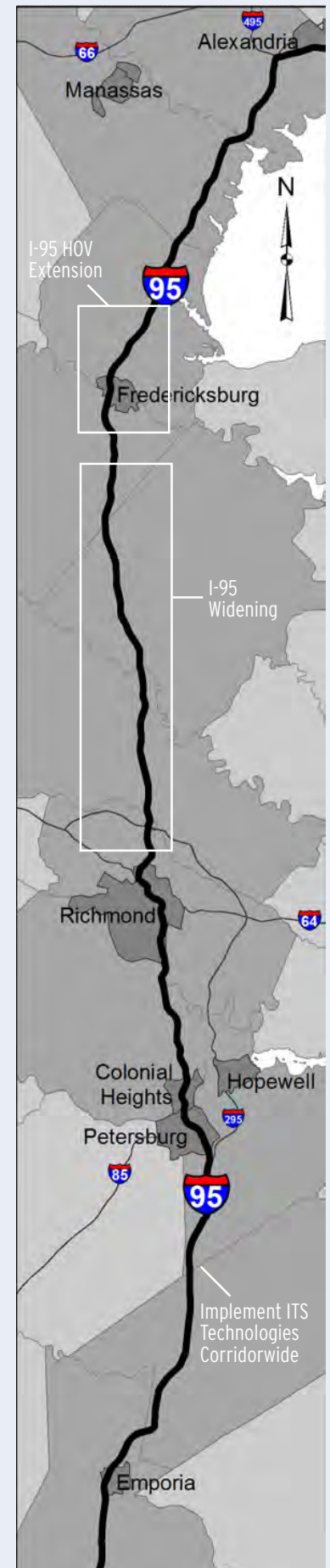
#### Intelligent Transportation Systems

ITS improvements include a broad range of communications technologies to make the transportation system more flexible, efficient and responsive to customer needs. Efforts are anticipated to be focused on the following:

- Integrated corridor management – coordination of individual network operations between parallel facilities to manage overall corridor capacity.
- Active traffic management – using real-time corridor data to use the existing capacity as effectively as possible.
- Traveler information.
- Traffic detection and monitoring.
- Shoulder lane control systems – using wide shoulders as travel lanes.

### Strategies:

1. *Reduce single occupant vehicles along urbanized areas of the I-95 corridor.*
2. *Increase highway capacity.*
3. *Implement transportation demand management (TDM).*
4. *Improve intelligent transportation systems (ITS) technologies along the corridor.*



## Goal 4: Economic Vitality

VDOT aims to support the growth of the Virginia and national economies through effective development and operation of I-95. The I-95 corridor plays a significant role in the economy as it is used for both business and leisure travel. As a key economic generator, the I-95 corridor functions as an important freight corridor that links to port facilities, airports, commuter path and connector between urban centers. These trips contribute to the business and economic vitality of nearby communities. Ensuring that I-95 maintains this function is essential to the long term health of the Commonwealth.

As a key economic generator, the I-95 corridor functions as an important freight corridor, commuter path and connector between urban centers.

Facilitating the safe and efficient movement of people and goods along the I-95 corridor in Virginia, as addressed in the other goals, will support economic growth. Of particular importance could be:

- Implementing actions to minimize delays due to incidents, thereby supporting movement of people and goods along the corridor. ITS technology, Safety Service Patrol (SSP) coverage, improved incident response plans and policies, all can support this strategy.
- Increasing interstate capacity for through traffic by widening the corridor in selected locations. One clear benefit of this is truck traffic due to decreasing travel times.
- Increasing highway accessibility through interchange improvements and modifications, and interchange construction.
- Implementing TDM strategies along I-95.



*I-95 (Richmond, VA)*



*Port of Richmond*



## Goal 4: Economic Vitality

VDOT aims to support the growth of the Virginia and national economies through effective development and operation of I-95. The I-95 corridor plays a significant role in the economy as it is used for both business and leisure travel. As a key economic generator, the I-95 corridor functions as an important freight corridor that links to port and airport facilities, commuter path and connector between urban centers. These trips contribute to the business and economic vitality of nearby communities.

### Spotlight on Potential Projects:

#### I-95 and Route 630 Interchange Improvements (Stafford County)

The Route 630 interchange project has been discussed since 1992, yet this critical infrastructure project remains in development. Currently, only design is funded and an estimated \$150 million is needed to construct the project. Under current plans, construction could not happen prior to 2017.

This project, which is being coordinated with Stafford County's Courthouse redevelopment study, will bring new development and economic growth to the corridor by enhancing transportation access to the area. In addition, the project will improve safety and expand capacity at the interchange and along I-95.

#### I-95/I-85/Route 460 Interchange Improvements

This interchange serves as the nexus for three interstate-quality facilities. With the Commonwealth's investment in the Route 460 corridor to improve access to the Port and enhance economic development, additional traffic pressure will be placed on this interchange. The Tri-Cities MPO has identified approximately \$80 million in improvements to maintain the flow of people and goods at this location by the year 2035. Funding for this project has yet to be identified.

#### I-95 Widening (Prince George County Line to NC Border)

Widening I-95 from four to six lanes along this 47-mile section of I-95 will promote economic growth and maintain the importance of I-95 as a significant freight corridor by providing efficient links to port and airport facilities. This project, anticipated to cost more than \$1 billion according to VSTP 2035, is currently unfunded.

#### Reconstruct Low-Clearance Bridges

Reconstructing the 52 low-clearance bridges that span I-95 and its ramps would allow freight to move more efficiently and without costly detours. These bridge reconstructions, anticipated to cost approximately \$300 million, are currently unfunded.

### Strategies:

1. *Minimize delays due to incidents.*
2. *Increase interstate capacity for through traffic.*
3. *Increase highway accessibility.*
4. *Implement transportation demand management (TDM).*



# Next Steps

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Because of its vital importance to the state economy, its residents, workers and visitors, Virginia envisions the I-95 facility as a highway where (1) the physical assets of the roadway are consistently maintained to state and industry standards; and (2) the operational aspects of the facility are enhanced to provide safe, efficient and reliable movement of people and goods within and through the Commonwealth.

Achieving the I-95 vision will require new investments. Virginia is working closely with the Federal Highway Administration to pursue tolling on I-95. Tolling is one option to address the long-term funding needs of the I-95 corridor. Other funding alternatives will continue to be investigated. For any funding scenario, the I-95 vision document defines the long-term goals of the corridor and will inform the next steps of the corridor development process.

# References

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- <sup>1</sup>*VTrans 2035, Virginia's Long-Range Multimodal Transportation Plan, Corridors of Statewide Significance: Washington to North Carolina Corridor*. Office of Intermodal Planning and Investment. March 2010. p. 2-12, Figure 10, Washington to North Carolina Corridor Future Conditions.
- <sup>2</sup>VSTP 2035, March 2010, I-95 Project Costs.
- <sup>3</sup>*VTrans 2035*. March 2010. p. 1-4. Jobs: VDOT data from the Virginia Workforce Connection
- <sup>4</sup>*VTrans 2035*. March 2010. p. 1-1.
- <sup>5</sup>2011 Congested Corridors Report, Texas Transportation Institute.
- <sup>6</sup>*I-95 Sketch Traffic and Revenue Study - Final Report*. Virginia Department of Transportation. July 2011. p. 1-2.
- <sup>7</sup>Virginia Department of Transportation. <<http://www.virginiadot.org/programs/ct-highway-safety-corridor.asp>>
- <sup>8</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-2.
- <sup>9</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>10</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>11</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>12</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>13</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>14</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>15</sup>*I-95 Sketch Traffic and Revenue Study – Final Report*. VDOT. July 2010. p. 1-4.
- <sup>16</sup>*2010 Performance of High-Occupancy Vehicle Facilities on Freeways in the Washington Region*. Metropolitan Washington Council of Governments (MWCOC). September 7, 2011. p. 30, Table 3, AM Data between Fairfax County Parkway and Franconia Springfield Parkway.
- <sup>17</sup>*VTrans 2035*. March 2010. p.1-1; Interstate mileage. Virginia Department of Transportation. <<http://www.virginiadot.org/travel/exit-numbers.asp>>
- <sup>18</sup>*VTrans 2035*. March 2010. p. 2-7, Table 3, Population Projections to 2035; Jobs data. Virginia Workforce Connection. Virginia Department of Transportation.
- <sup>19</sup>*VTrans 2035*. March 2010. pp. 1-4 and 2-5, Table 2, I-95 Warehouse and Distribution Facilities.
- <sup>20</sup>Virginia Department of Transportation. <[http://www.roadstothefuture.com/I95\\_VA\\_Desc.html](http://www.roadstothefuture.com/I95_VA_Desc.html)> and Tolling Expression of Interest submitted to FHWA. Virginia Department of Transportation. January 13, 2011.
- <sup>21</sup>*VTrans 2035*. March 2010. p. 2-11, Figure 9, Washington to North Carolina Corridor Existing Conditions; p. 2-12, Figure 10, Washington to North Carolina Corridor Future Conditions; p. 2-13, Table 4, Travel Times and p. 2-14, Figure 11, Washington to North Carolina Corridor Percentage Increase in Travel.
- <sup>22</sup>Tolling Expression of Interest submitted to FHWA. Virginia Department of Transportation. January 13, 2011.

<sup>23</sup>Six-Year Improvement Plan (SYIP) On-Line Database. Virginia Department of Transportation. <<http://syip.virginiadot.org/Pages/allProjects.aspx>> (0095 route code).

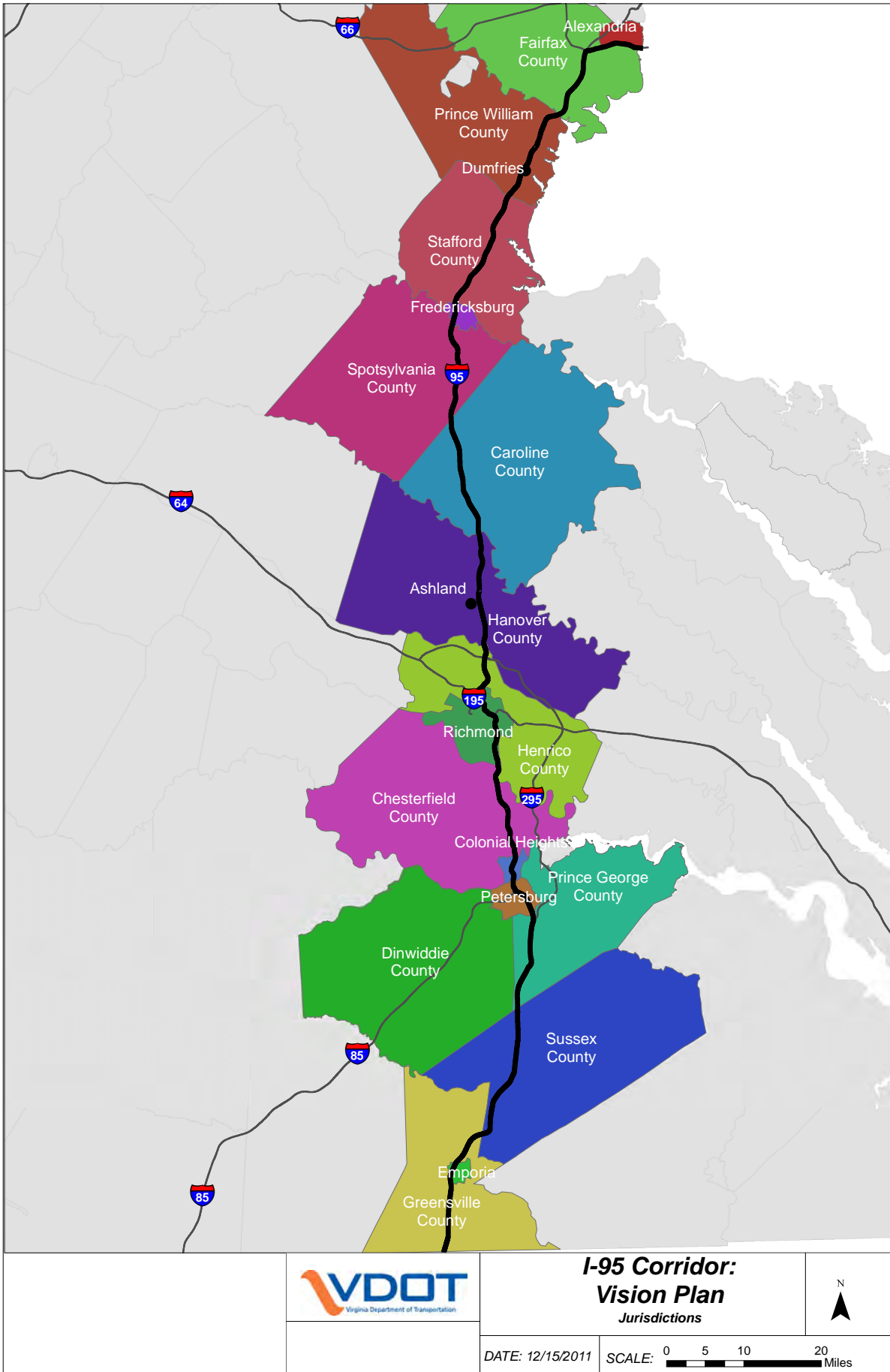
<sup>24</sup>Response to FHWA comments on ISRRPP application. Virginia Department of Transportation, May 27, 2011. p. 10.

<sup>25</sup>VSTP 2035, March 2010, I-95 Project Costs.

<sup>26</sup>“VDOT Traffic Engineering Data”.

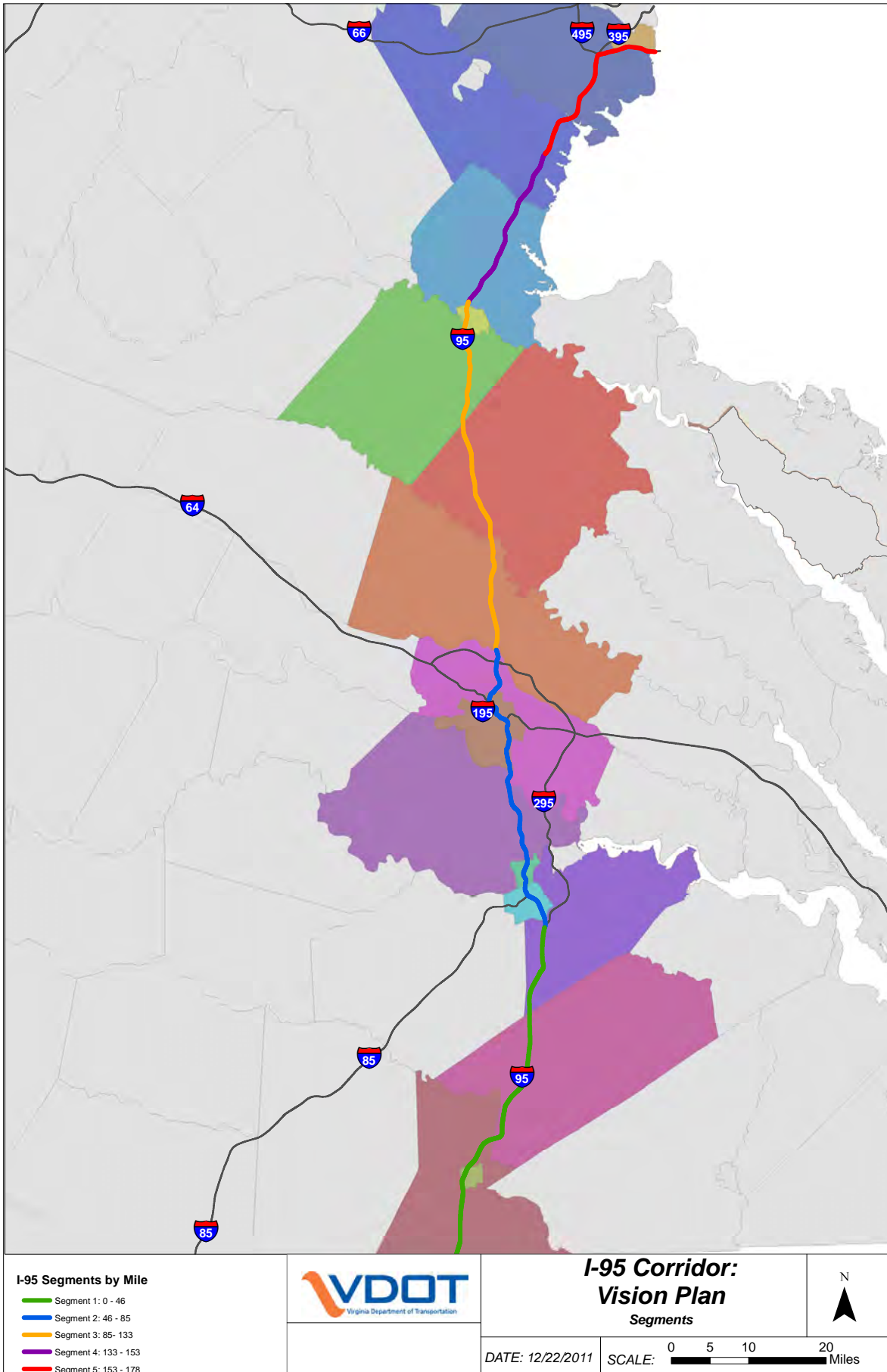
<sup>27</sup>Kozel, Scott M. Roads of the Future. 2000-2003. “Interstate 95 in Virginia.” <[http://www.roadstothefuture.com/I95\\_VA\\_Desc.html](http://www.roadstothefuture.com/I95_VA_Desc.html)>

# APPENDIX



*Jurisdictions along the I-95 Corridor*

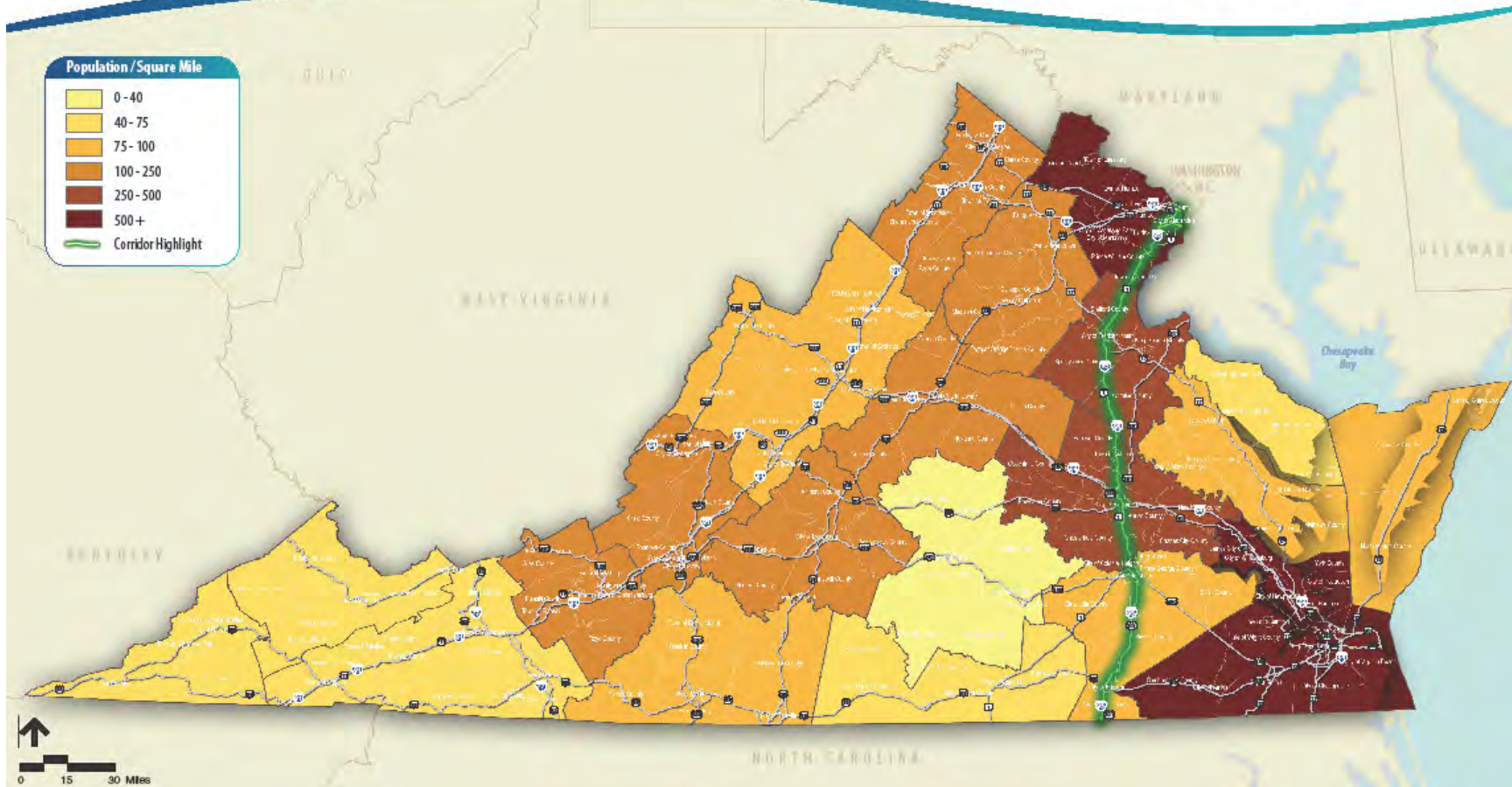




*I-95 Segment Definition*



# Virginia Statewide Multimodal Transportation Plan



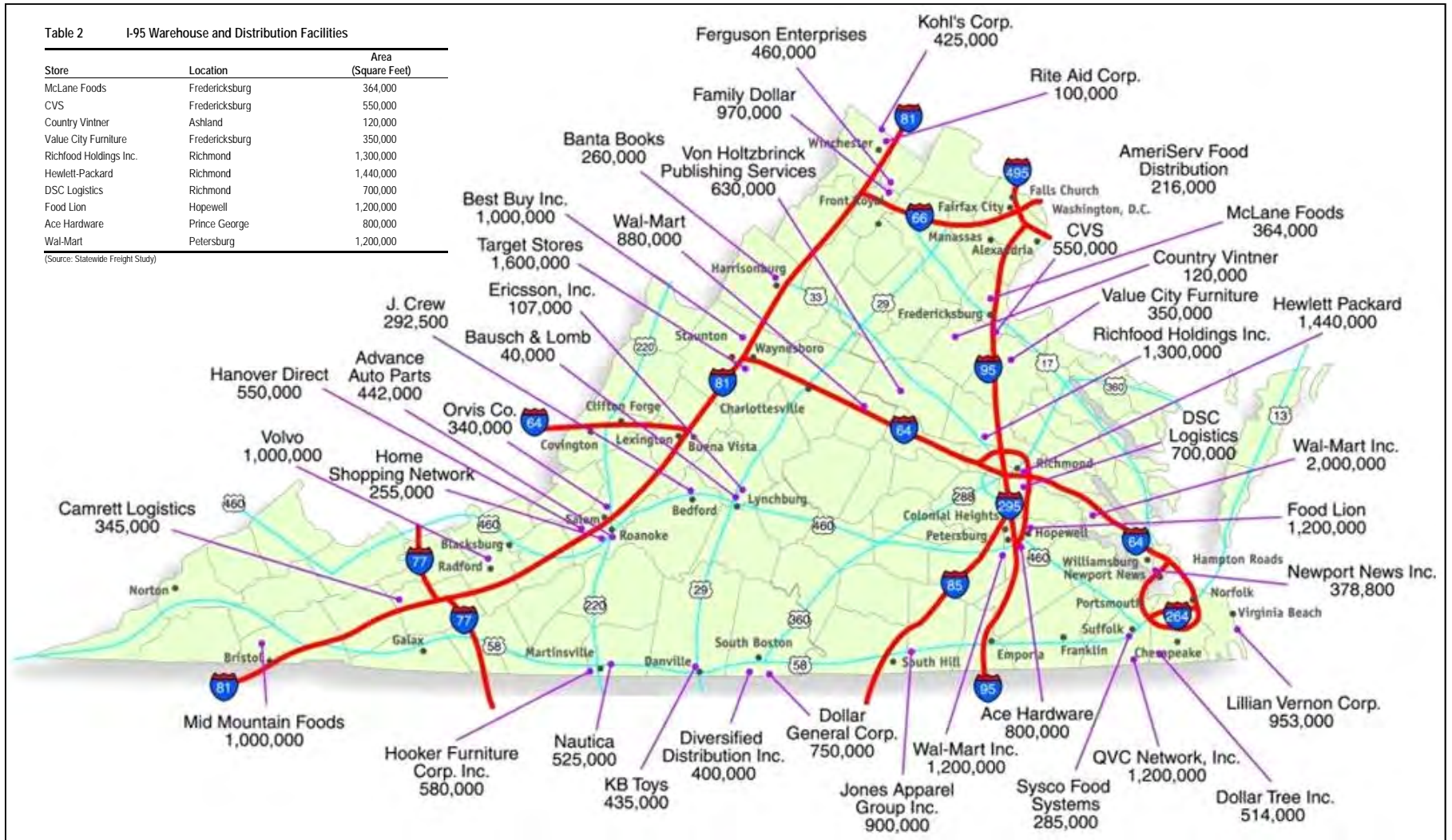
2010 Population Density Projection (Source: VTrans 2035)



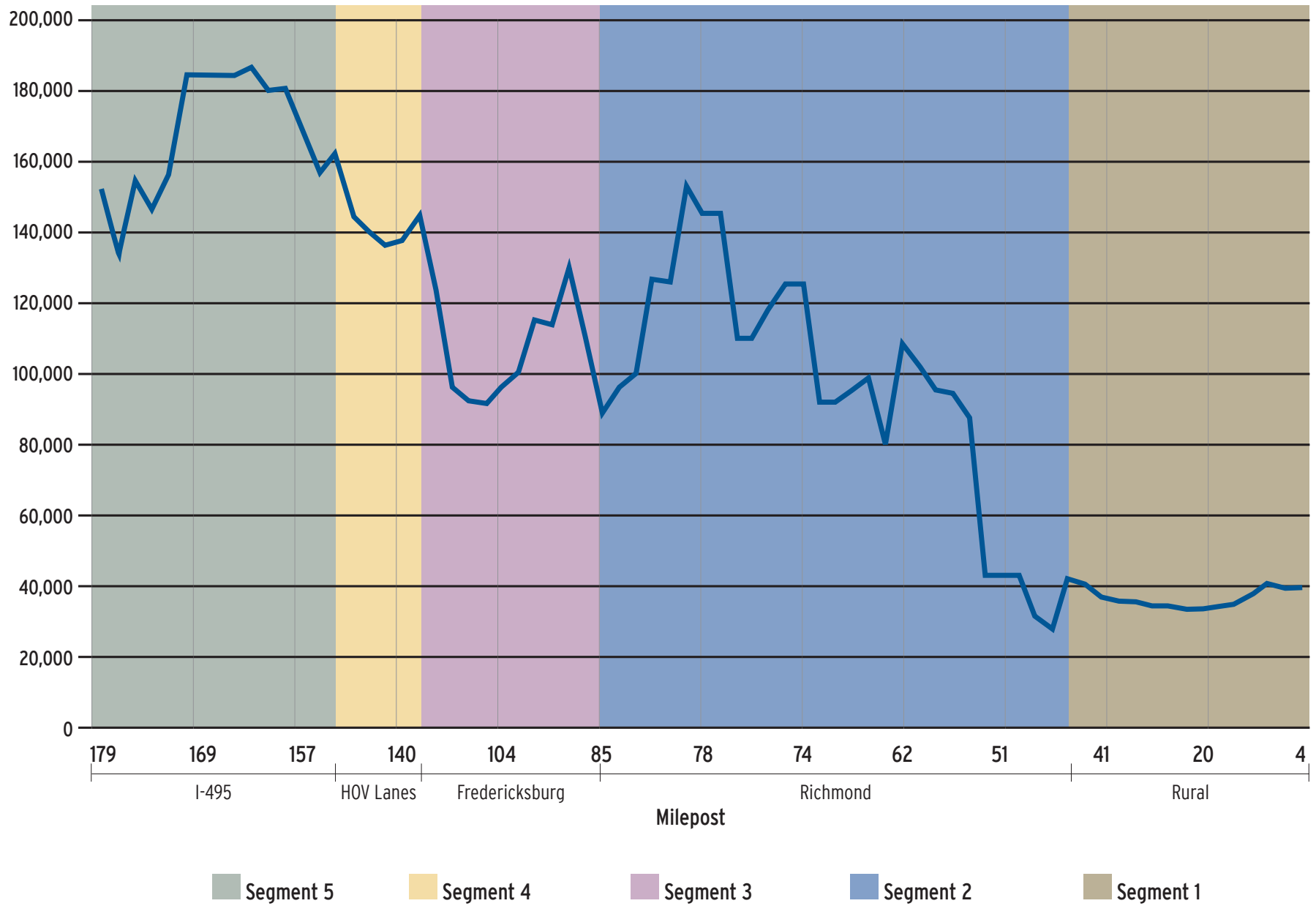


2010 Employment Density along I-95 Corridor (Source: VDOT I-95 Sketch Traffic and Revenue Study)



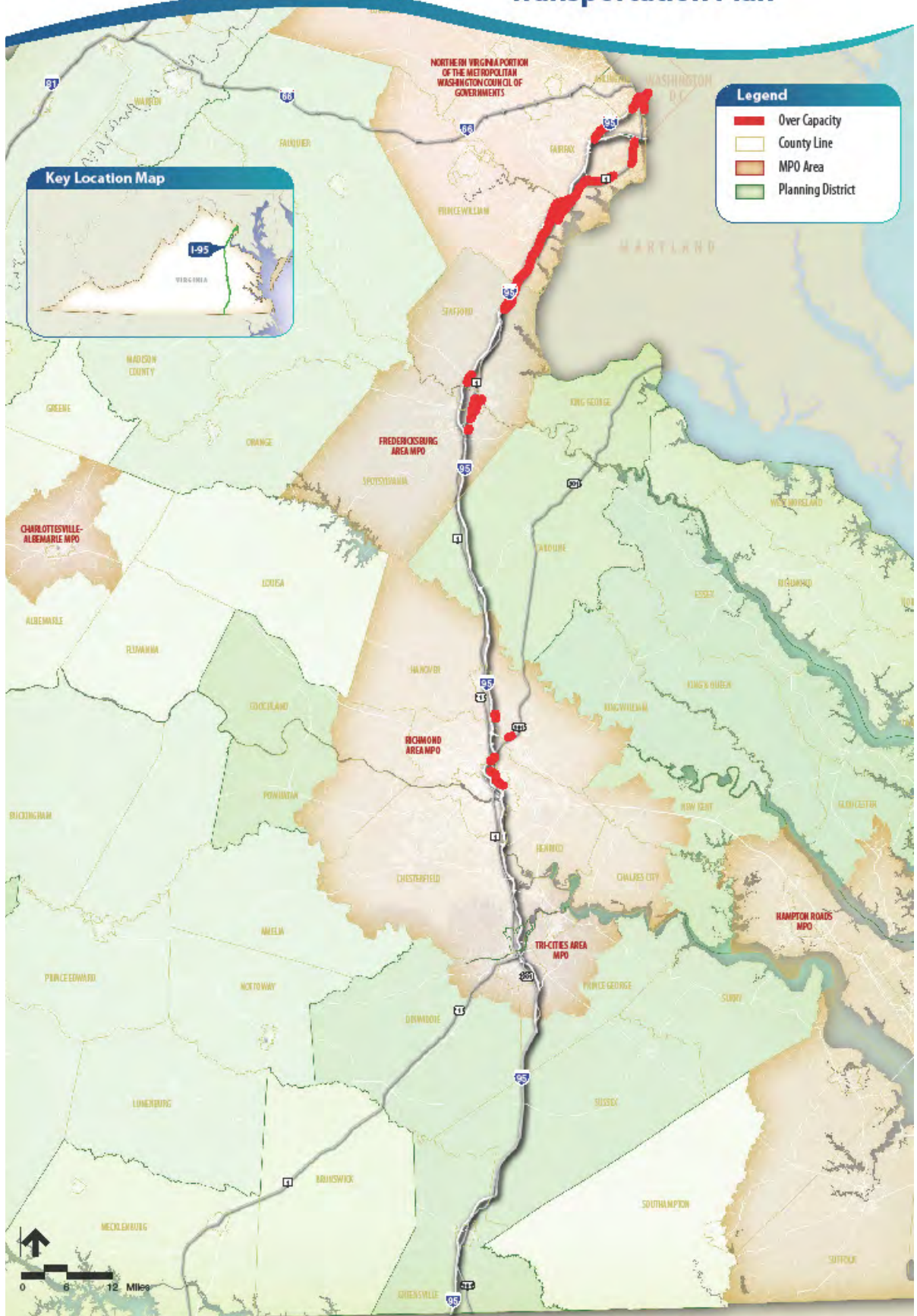


Major Distribution Centers and Warehouse Facilities in Virginia (Source: VTrans 2035)



2009 AADT along I-95 by Milepost (Source: VDOT I-95 Sketch Traffic and Revenue Study)

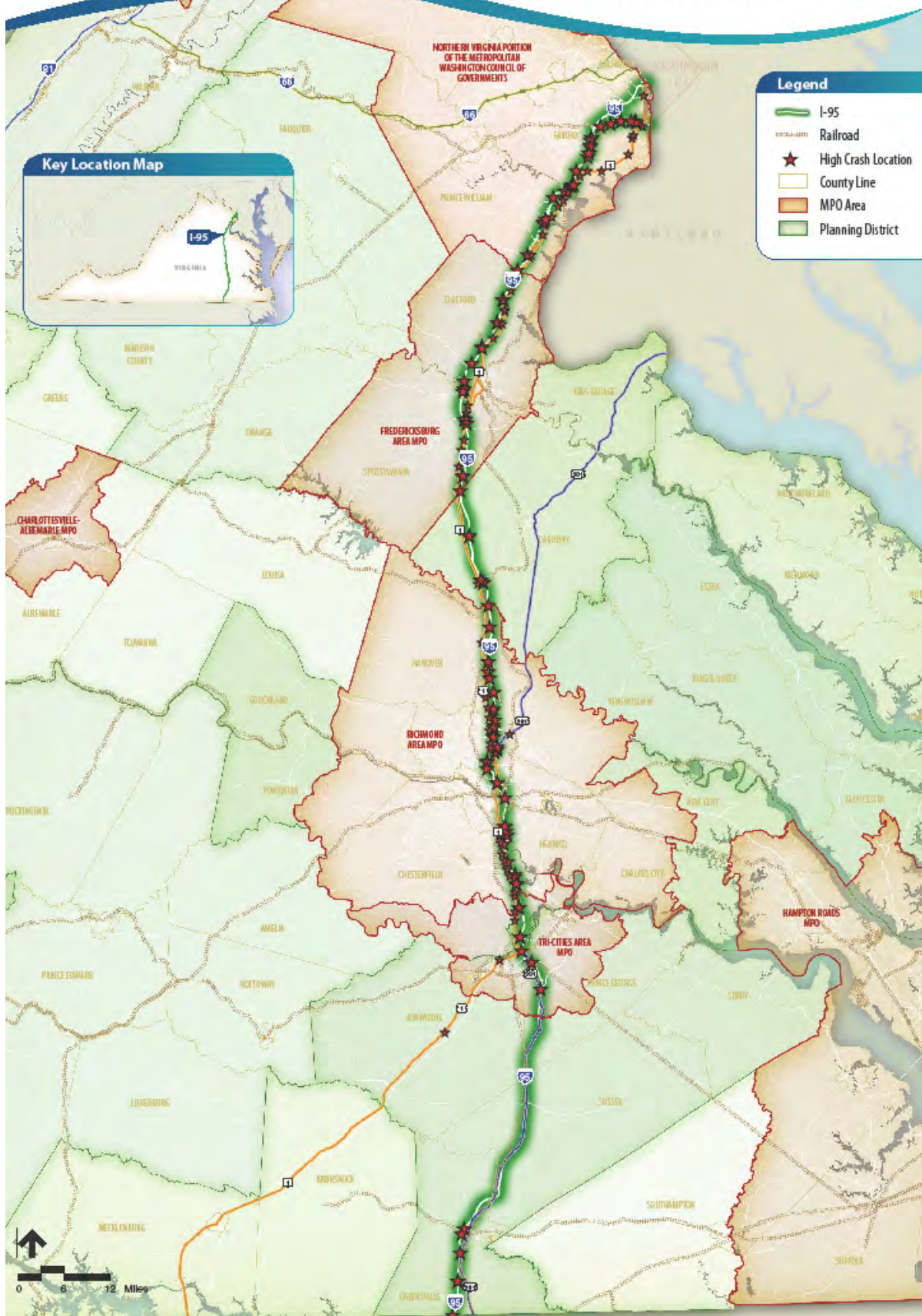
# Virginia Statewide Multimodal Transportation Plan



Existing Levels of Congestion on I-95 (Source: VTrans 2035)



# Virginia Statewide Multimodal Transportation Plan



High Crash-Rate Locations along I-95 (Source: VTrans 2035)

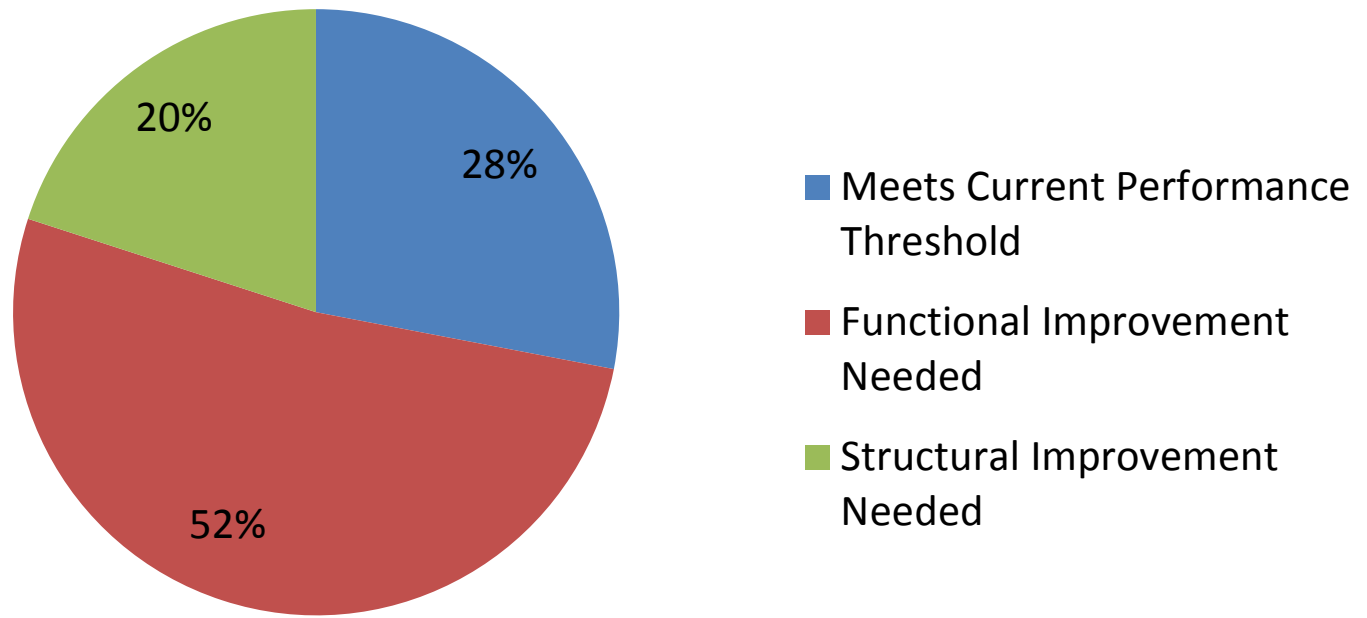
I - 95 Mainline Structure Summary			
Segment	I-95 Northbound	I-95 Southbound	Over I-95
North Carolina to Mile Post 152	164	72	108
Mile Post 152 to Mile Post 170	17	7	25
Mile Post 170 to Maryland	21	2	11
<b>Total</b>	<b>202</b>	<b>81</b>	<b>144</b>

Note: Does not include interchange ramp structures

Source: Virginia Department of Transportation

# I-95 Pavement Conditions (2011)

% of Total Lane Miles Needing Improvement

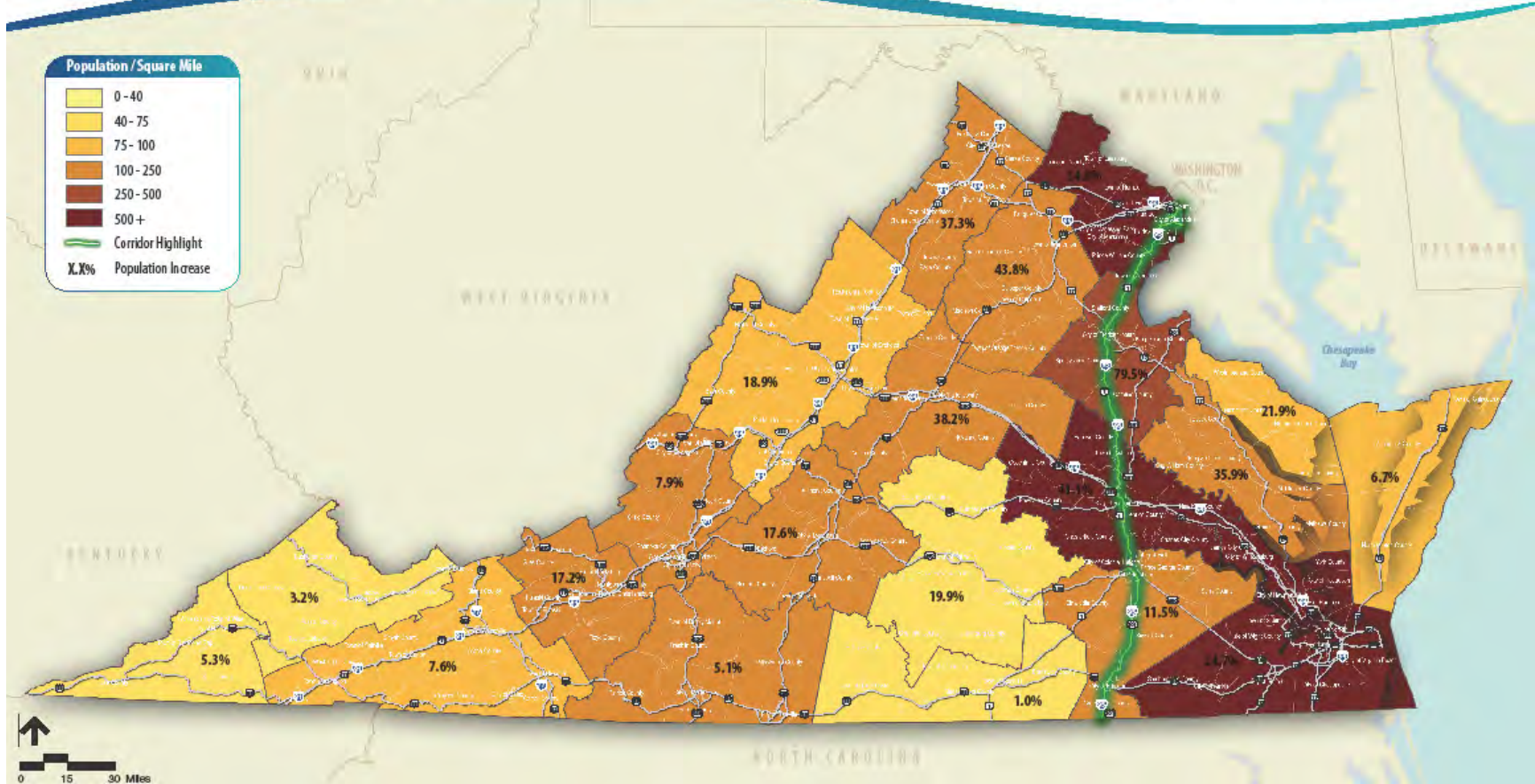


Notes:

1. Functional improvements are preservative and corrective maintenance activities to enhance the life of existing pavement.
2. Structural improvements address moderate to heavily-distressed pavement surfaces and restore the structural capacity of the pavement.

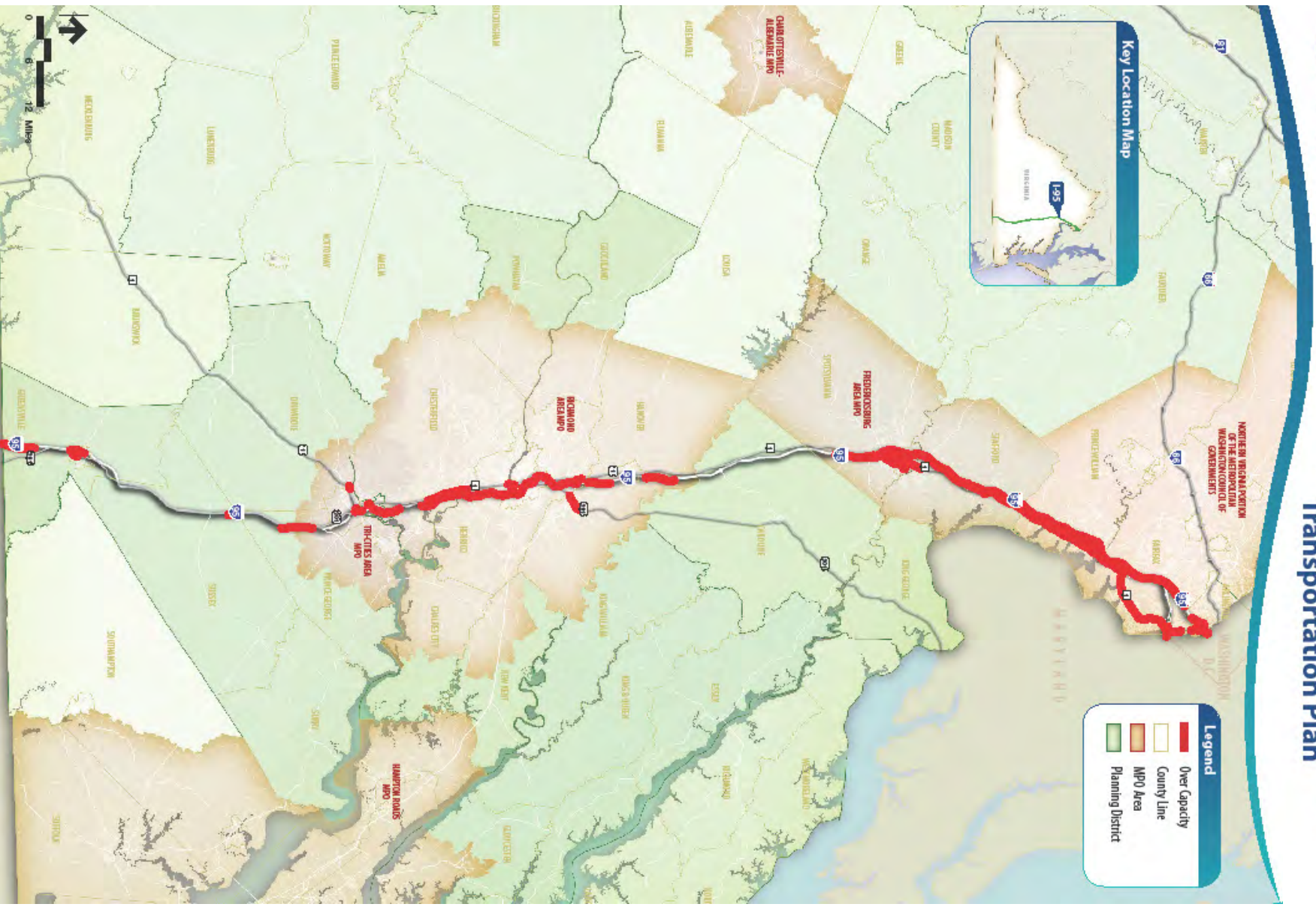
Source: VDOT 2011 Interstate Condition Data Summary





2035 Population Density Projections (Source: VTrans 2035)

# Virginia Statewide Multimodal Transportation Plan



Forecast 2035 Levels of Congestion on I-95 (Source: VTrans 2035)



Six Year Improvement Plan										
UPC	Description	Route	District	Road System	Jurisdiction	Estimate	Previous	FY12	FY13-17	Balance
						(Values in Thousands of Dollars)				
13558	RTE 95 - RELOCATION OF INTERCHANGE	95	Fredericksburg	Interstate	Stafford County	\$154,682	\$9,007	\$1,660	\$14,033	\$129,982
70850	I-95/395 PRELIMINARY ENGINEERING STUDIES (HOT LANES)	95	Fredericksburg	Interstate	Fredericksburg District-wide	\$95,205	\$1,501	\$0	\$0	\$93,704
86081	RTE 95 - INTERCHANGE IMPROVEMENTS - RELOCATION OF RTE F-160	95	Fredericksburg	Interstate	Caroline County	\$14,461	\$1,015	\$0	\$0	\$13,446
87768	I-95 ACCESS STUDY	95	Fredericksburg	Interstate	Fredericksburg	\$15,000	\$1,245	\$11,880	\$1,875	\$0
97547	ROUTE 95 - PAVING CAROLINE COUNTY	95	Fredericksburg	Interstate	Caroline County	\$10,755	\$0	\$0	\$10,755	\$0
97548	ROUTE 95 - PAVING CAROLINE COUNTY	95	Fredericksburg	Interstate	Caroline County	\$14,625	\$0	\$0	\$14,625	\$0
97549	ROUTE 95N PAVING SPOTSYLVANIA COUNTY	95	Fredericksburg	Interstate	Caroline County	\$11,340	\$0	\$0	\$11,340	\$0
83164	REPLACE BRIDGES	95	Hampton Roads	Interstate	Emporia	\$22,977	\$1,883	\$453	\$20,642	\$0
T9066	VANPOOL INCENTIVE PROGRAM	95	Northern Virginia	Interstate	Fairfax County	\$500	\$200	\$0	\$0	\$300
14682	BUILD HOV RAMPS BETWEEN I-95 AND CAPITAL BELTWAY- FAIRFAX CO	95	Northern Virginia	Interstate	Fairfax County	\$128,085	\$71,515	\$27,499	\$29,070	\$0
18136	RTE 95 - WIDEN TO ADD ADDITIONAL LANES	95	Northern Virginia	Interstate	Alexandria	\$255,476	\$211,837	\$43,639	\$0	\$0
57017	ADDING A 4TH LANE IN EACH DIRECTION FROM NEWINGTON TO RT 123	95	Northern Virginia	Interstate	Northern Virginia District-wide	\$122,411	\$108,029	\$14,382	\$0	\$0
64619	RTE 95 - WETLAND MITIGATION AT CAMERON RUN- CONTR VM6 FOR WWB	95	Northern Virginia	Interstate	Northern Virginia District-wide	\$1,729	\$1,016	\$713	\$0	\$0
64628	RTE 95 - US1 CMS-ITS INTEGRATION	95	Northern Virginia	Interstate	Northern Virginia District-wide	\$638	\$328	\$310	\$0	\$0
77923	RTE 95 - GRADE SEPARATION OF SOUTHERN INTERSECTION	95	Northern Virginia	Interstate	Alexandria	\$46,682	\$36,769	\$9,913	\$0	\$0
86527	NOVA GEC MEGA PROJECT ADMINISTRATION	95	Northern Virginia	Interstate	Fairfax County	\$63,929	\$29,829	\$22,002	\$12,098	\$0
93033	I-95 NB DIRECTIONAL OFF RAMP TO NB FAIRFAX COUNTY PARKWAY	95	Northern Virginia	Interstate	Fairfax County	\$8,100	\$4,193	\$0	\$0	\$3,907
85623	RTE 95 - INTERCHANGE IMPROVEMENT/ REALIGNMENT	95	Richmond	Interstate	Colonial Heights	\$6,455	\$1,559	\$1,733	\$3,163	\$0
90347	ROUTE 802-REPLACE BRIDGE OVER I-95, MOD. RAMPS & AIRPARK RD.	95	Richmond	Interstate	Hanover County	\$21,013	\$9,924	\$2,000	\$8,162	\$927
<b>Totals</b>								\$136,184	\$125,763	\$242,266

Notes:

1. Projects showing zero or negative balances for FY 2012-17 have been removed from this table.
2. Projects along I-395 have been removed.

*I-95 Projects in the VDOT Six-Year Improvement Plan (Source: VDOT FY 2012-17 SYIP)*

Virginia Surface Transportation Plan - I-95 PROJECTS																
Route	Region	VDOT District	Jurisdiction	Segment (1 to 5)	Facility Name	From	To	Length	Improvement Description	Total Cost Estimate	Source Documents / Plan Status	Safety	System Preservation	Mobility	Economic Vitality	
95	Eastern	Hampton Roads	Sussex/Greenville/Emporia	1	I-95	North Carolina SL	RTE 301	17.30		\$ 369,564	VTRANS 2035 - Page 181				X	
95	Eastern	Hampton Roads	Sussex	1	I-95	RTE 301	RTE 40	13.62		\$ 426,984	VTRANS 2035 - Page 181				X	
95	Piedmont	Richmond/Hampton Roads	Prince George/Sussex	1	I-95	RTE 40	SCL Petersburg	16.57		\$ 349,997	VTRANS 2035 - Page 161		X	X	X	
95	Piedmont	Richmond	Petersburg	2		Purple Heart Trail	RTE 629 (Rives Road)		I-95 Reconstruct and relocate interchange at Rives Road.	\$ 97,000	VTRANS 2035 - Page 164	X		X		
85	Piedmont	Richmond	Petersburg	2	I-85	Squirrel Level Road	RTE I-95 North		Cost included with widening project. Upgrade I-85/460/95 interchange to improve traffic flow and safety.	\$ -	VTRANS 2035 - Page 164	X		X		
95	Piedmont	Richmond	Petersburg	2		Purple Heart Trail	South Crater Road		I-85/I-95/RTE 460 Interchange Phase I and II	\$ 79,000	VTRANS 2035 - Page 165	X		X		
85	Piedmont	Richmond	Dinwiddle	2	I-85	RTE 460			Improve I-85 / Route 460 Interchange per Tri-Cities 2031 CLRP.	\$ 1,100	VTRANS 2035 - Page 165	X		X		
95	Piedmont	Richmond	Colonial Heights	2	I-95	RTE 144 (Temple Ave.)			Interchange Improvement - realign the off ramp and on ramp at the I-95/Temple Ave. Interchange	\$ 8,600	VTRANS 2035 - Page 163	X		X	X	
95	Piedmont	Richmond	Richmond	2	I-95	Maury St.			Interchange modifications at Maury St.	\$ 12,000	VTRANS 2035 - Page 165	X		X		
95	Piedmont	Richmond	Richmond	2	I-95	Broad St.			Interchange modification at Broad St.	\$ 40,000	VTRANS 2035 - Page 165	X		X		
64	Piedmont	Richmond	Richmond	2	I-64	WCL Richmond	RTE I-95 North		Improve bottleneck on I-64/95 overlap in vicinity of Bryan Park. Increase capacity on ramps and use ITS.	\$ 100,000	VTRANS 2035 - Page 165	X		X		
95	Piedmont	Richmond	Richmond	2	I-95	Belvidere St and Duval St.			Interchange modification at Belvidere St and Duval St.	\$ 12,000	VTRANS 2035 - Page 164	X		X		
95	Piedmont	Richmond	Hanover	3	I-95	Henrico CL	RTE 802	2.74		\$ 88,463	VTRANS 2035 - Page 159	X		X	X	
95	Piedmont	Fredericksburg	Ashland/Hanover/Caroline	3	I-95	RTE 802	RTE 207	15.09		\$ 314,782	VTRANS 2035 - Page 158			X	X	
95	Piedmont	Richmond	Hanover	3	I-95	RTE 802	SCL Ashland		Interchange Improvements	\$ 6,347	VTRANS 2035 - Page 165	X		X		
95	Piedmont	Fredericksburg	Spotsylvania/Caroline	3	I-95	RTE 207	RTE 17 OP	21.66		\$ 502,036	VTRANS 2035 - Page 158		X	X	X	
95	Piedmont	Fredericksburg	Fredericksburg/Spotsylvania	3	I-95	RTE 1	RTE 3	4.09		\$ 105,139	VTRANS 2035 - Page 156		X	X	X	
95	Piedmont	Fredericksburg	Fredericksburg	3	I-95 HOV	SCL Fredericksburg	Stafford CL	3.18		\$ 95,400	VTRANS 2035 - Page 162	X	X			
95	Piedmont	Fredericksburg	Fredericksburg/Stafford	3	I-95	RTE 3	RTE 17	3.03		\$ 143,122	VTRANS 2035 - Page 156		X	X	X	
95	Piedmont	Fredericksburg	Stafford	4	I-95	RTE 17	RTE 630	7.26		\$ 136,898	VTRANS 2035 - Page 158		X	X	X	
95	Piedmont	Fredericksburg	Stafford	4	I-95	RTE 630	Prince William CL	9.57		\$ 266,016	VTRANS 2035 - Page 158			X	X	
95	Piedmont	Fredericksburg	Stafford	4		Purple Heart Trail	RTE 630		New Interchange at RTE 630 and relocate RTE 630 from US 1 to Cedar Lane per FAMPO 2035 CLRP	\$ 118,250	VTRANS 2035 - Page 163			X		
95	Piedmont	Fredericksburg	Stafford	4	I-95 HOV	RTE 610	Prince William CL	4.35		\$ 189,750	VTRANS 2035 - Page 162	X	X			
95	Piedmont	Fredericksburg	Stafford/Spotsylvania	4	I-95 HOV	RTE 610	RTE 1	14.20		\$ 528,600	VTRANS 2035 - Page 162	X	X			
95	Northern	Northern Virginia	Prince William	4 to 5	I-95	Stafford CL	RTE 123	12.48		\$ 553,097	VTRANS 2035 - Page 117			X	X	
95	Northern	Northern Virginia	Prince William	4	I-95 HOV	Stafford CL	0.6 MS RTE 234	4.41		\$ 238,760	VTRANS 2035 - Page 121	X		X		
95	Northern	Northern Virginia	Fairfax	5		Capital Beltway	Ramp To RTE I-495	4.05		\$ 239,031	VTRANS 2035 - Page 117			X		
<b>Total:</b>										<b>\$ 5,021,936</b>						

Virginia Surface Transportation Plan 2035 - I-95 Projects (Source: Virginia Surface Transportation Plan 2035)

## VDOT I-95 CORRIDOR IMPROVEMENT PROGRAM INVESTMENT IN CORRIDOR

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### Capital Investment in Corridor:

- \$ 60 million Current annual capital investment in the I-95 Corridor<sup>1</sup>
- \$1,500 million Projected 25-year capital investment based on current levels (FY10-35)<sup>2</sup>
- \$6,400 million Identified 25-year needs based on VSTP 2035, ITS and other needs<sup>3</sup>
- **\$4,900 million** Funding gap from FY10 through FY35

### Operations and Maintenance Investment in Corridor:

- \$ 42 million Current annual O&M investment in the I-95 Corridor
- \$1,000 million Projected 25-year O&M investment based on current levels (FY10-35)
- \$5,700 million Identified 25-year needs based on pavement, structures & ITS<sup>4</sup>
- **\$4,700 million** Funding gap from FY10 through FY35

**Total Projected Funding Gap FY10-35: \$9,600 million**

Note: All funding amounts are rounded

<sup>1</sup> Current spending based on Six-Year Implementation Plan FY12-17 excludes HOT lane projects.

<sup>2</sup> Based on Surface Transportation Plan 2035 projections, including I-95 HOT lanes and excluding I-395 projects.

<sup>3</sup> Estimated needs based on Surface Transportation Plan 2035 (excluding I-395 HOT Lanes), intelligent transportation system (ITS) needs, Safety Rest Area needs and system preservation reconstruction.

<sup>4</sup> Estimated needs based on current pavement and bridge condition, and includes VDOT planning estimates to address ITS operations and maintenance costs.