HB2 Overview

June 18, 2015
HB2 Team

Life Cycle of a Candidate Project

How it's planned. **How it's scored.** **How it's funded.**

How it's planned
VTrans2040

- VTrans is the long-range, statewide multimodal policy plan -Vision and Goals for transportation in the Commonwealth
- VTrans2040 serves two functions and produces two independent, but connected documents:
  - VTrans2040- 25 year vision document
  - VTrans2040- Multimodal Transportation Plan (VMTP) includes Multimodal Needs Assessment

How it's planned
VTrans2040

- Needs Assessment:
  - VMTP will identify future needs for all modes travel across the Commonwealth – not project specific
  - Policy and recommendations of the plan will focus on:
    - Corridors of Statewide Significance
    - Identified regional networks
    - Local designated growth areas
    - Safety

Corridors of Statewide Significance
CoSS

- Approved by the CTB
- Demonstrate the following characteristics:
  - Multiple modes and/or an extended freight corridor
  - Connection among regions, states and/or major activity centers
  - High volume of travel
  - Unique statewide function and/or fulfillment of statewide goal
- Includes parallel/connecting facilities, rail lines, ports, airports, etc (not just the Interstates)

Virginia CoSS

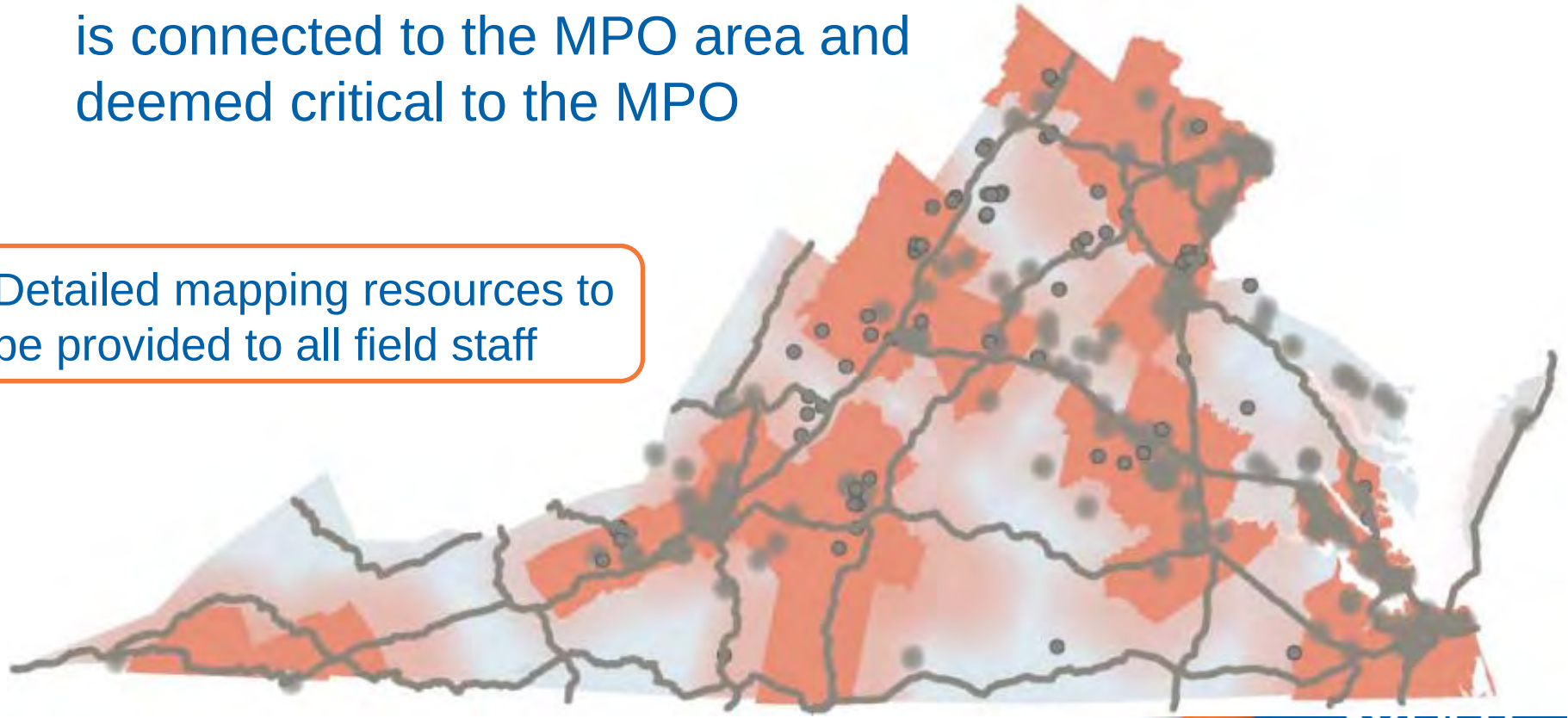
Detailed mapping resources to be provided to all field staff

Regional Networks – Under Development

Defined as:

- Jurisdictions that are included either in whole or in part within MPO Planning Area Boundaries
- Any additional element of the transportation system that is connected to the MPO area and deemed critical to the MPO

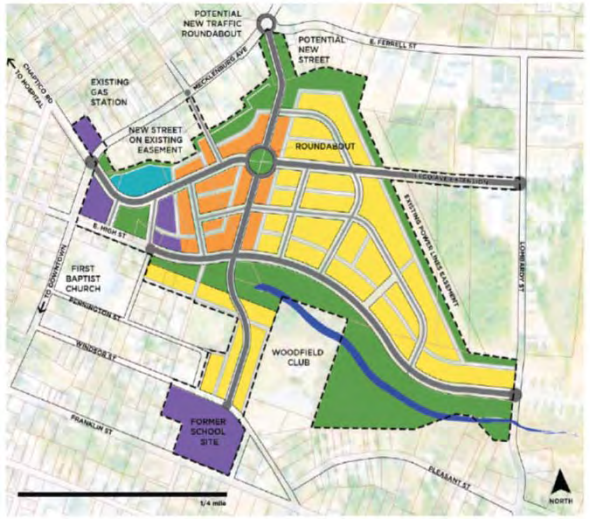
Detailed mapping resources to be provided to all field staff



Urban Development Areas
UDAs

- Areas voluntarily designated by local governments as prime areas for future economic growth pursuant to 15.2-2223.1

- Must reflect transportation-efficient land use principles including
  - Mixed-use land use
  - Interconnected streets
  - Moderately compact growth



HB2 Screening Process- ***Key Take Away***

- Only projects that meet a ***need identified in VTrans2040*** will be prioritized
- Projects must be located within one of the following areas:
  - Corridors of Statewide Significance
  - Regional Networks
  - Improvements to promote urban development areas
  - Or addresses an identified safety need
- Projects that do not meet the screening criteria will not be scored or prioritized under HB2

How HB2 is funded

HB 1887

- HB1887 removes the 40-30-30 formula put in place in by the 1986 Special Session legislation
- New construction formula established, effective FY 2021:
  - State of Good Repair – 45%
  - High-Priority Projects Program (Statewide) * – 27.5%
  - District Grant Programs* – 27.5%

*To be programmed according to HB 2 in FY17

How HB2 is funded

- In the interim (FY17-20):
  - Funds not programmed to projects are to be distributed 50/50 to:
    - High-Priority Projects Program (Statewide)
    - District Grant Programs

HB 1887

Funds Available for HB 2

(in millions - Subject to Revision)

Funds Available for HB 2 and SGR

(in millions)

	HB2 Percentage	Available for HB 2	SGR Percentage	Available for SGR
District Grant Programs		**$500.1**		**$332.7**
Bristol	*7.1%*	*35.3*	*11.7%*	*38.9*
Culpeper	*6.2%*	*31.1*	*6.0%*	*19.9*
Fredericksburg	*6.9%*	*34.3*	*12.1%*	*40.2*
Hampton Roads	*20.2%*	*100.8*	*14.8%*	*49.1*
Lynchburg	*7.1%*	*35.7*	*7.6%*	*25.3*
NOVA	*20.7%*	*103.7*	*10.6%*	*35.1*
Richmond	*14.4%*	*72.2*	*17.4%*	*58.0*
Salem	*9.6%*	*48.1*	*12.1%*	*40.2*
Staunton	*7.8%*	*39.0*	*7.9%*	*26.1*
High Priority Projects Program (Statewide)		**$500.1**		
Total	**100.0%**	**$1,000.2**	**100.0%**	**$332.7**

HB2 Overview

Schedule: May to October 2015

- Process must be used to develop FY17-22 Six-Year Improvement Program; Program will be considered by the Board in June 2016

Upcoming Events:

June 17th – CTB adopted the HB2 process

July 2015 – VTRANS2040 VMTP identification of transportation draft needs

June/July – Training for VDOT staff

July/Aug. – Training Entities (e.g. Localities, MPOs, PDCs)

- Process overview
- Online application system

July 1st – VDOT to begin working with Entities

Aug 1st – Entities begin inputting applications

Sept 30th – On-line applications deadline

HB2 Project Types

- **Eligible project types include:**
  - Highway improvements
    - ❑Widening projects
    - ❑Operational improvements
    - ❑Access management
  - Transit and rail capacity expansion projects
  - Transportation demand management
    - ❑Van Pools
    - ❑Park & Ride facilities
    - ❑Telecommuting
  - Passenger Rail

HB2 Project Types

- **Project types excluded:**
  - Asset Management
    - Structurally deficient bridges
    - Reconstructive paving
    - Routine maintenance
    - Transit and Rail State of Good Repair projects

Applicant Eligibility

Project System	Regional Entity (MPOs, PDCs)	Locality* (Counties, Cities, Towns)	Public Transit Agencies
Corridor of Statewide Significance	Yes	Yes, with a resolution of support from relevant regional entity	Yes, with resolution of support from relevant regional entity
Regional Network	Yes	Yes	Yes, with resolution of support from relevant entity
Urban Development Area	No	Yes	No

* Localities are also eligible to submit projects addressing a safety need identified in VTrans 2040 under the District Grant Program

HB 1887 Funding Program Eligibility

		High Priority Projects Program (Statewide)	District Grant Program*
Facility Type	CoSS	Yes	Yes
	Regional Networks	Yes	Yes
	UDA's	No	Yes
Eligibility to Submit	Regional Entity	Yes	No
	Locality	Yes	Yes

* Localities are also eligible to submit projects addressing a safety need identified in VTrans 2040 under the District Grant Program

HB2 Measure/Scoring

HB2 Scoring - Screening Process

REMEMBER:

- Only projects that meet a need identified in VTrans 2040 will be prioritized, and projects need to be on at least one of the following:
  - Corridors of Statewide Significance
  - Regional Networks
  - Improvements to promote urban development areas
  - Address a safety need from VTrans needs assessment

HB2 Scoring – Factor Areas

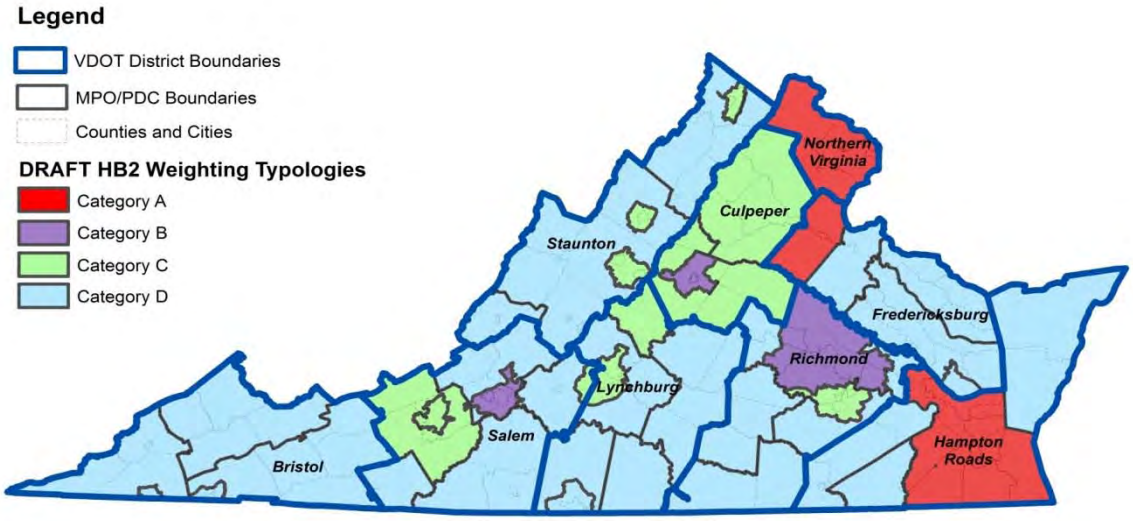
- The prioritization process is objective, quantifiable and considers at least the following factors relative to cost:
    - Congestion mitigation
    - Economic development
    - Accessibility
    - Safety
    - Environmental Quality
- For Area Types A and B a transportation and land use factor will be used

HB2 Scoring – Evaluating Benefits Relative to Cost

- House Bill 2 requires that benefits produced by a project be analyzed on a basis of relative costs
- Results to be provided to CTB based on:
  - Benefits relative to total costs
  - Benefits relative to HB2 costs

HB2 Scoring – Weighting – CTB Approved June 17, 2015

- House Bill 2 requires that the CTB weight the factors differently in different parts of the Commonwealth



Factor	Congestion Mitigation	Economic Development	Accessibility	Safety	Environmental Quality	Land Use
Category A	45%	5%	15%	5%	10%	20%
Category B	15%	20%	25%	20%	10%	10%
Category C	15%	25%	25%	25%	10%	
Category D	10%	35%	15%	30%	10%	

HB2 Scoring – Factors

For more details see:
www.VirginiaHB2.org

Factor Areas

Goals that guided measure development

- **Safety** – reduce the number and rate of fatalities and severe injuries
- **Congestion** – reduce person hours of delay and increase person throughput
- **Accessibility** – increase access to jobs and travel options
- **Economic Development** – support economic development, improve goods movement and improve travel time reliability
- **Environmental Quality** – improve air quality and avoid impacts to the natural environment
- **Land Use** – support transportation efficient land development patterns

Applicant Responsibilities
(with State support)

Applicant Roles and Responsibilities Scope/ Schedule/ Estimates

Local/Regional applicants will be required to provide the following information when submitting a project under HB2

- ✓ Point of contact
- ✓ Who will administer project?
- ✓ Project priority (if submitting more than one)
- ✓ Detailed project description/scope
- ✓ Project sketch (optional but strongly encouraged)
- ✓ Project status, cost estimate and duration by phase
- ✓ Measure information related to Accessibility, Economic Development, Environment, and Land Use (area types A & B)
- ✓ Amount of HB2 funding requested
- ✓ Description of any non-HB2 funding committed to project
- ✓ Applicable supporting documents (resolutions, plans, studies, etc)

Applicant Roles and Responsibilities
Scope/ Schedule/ Estimates

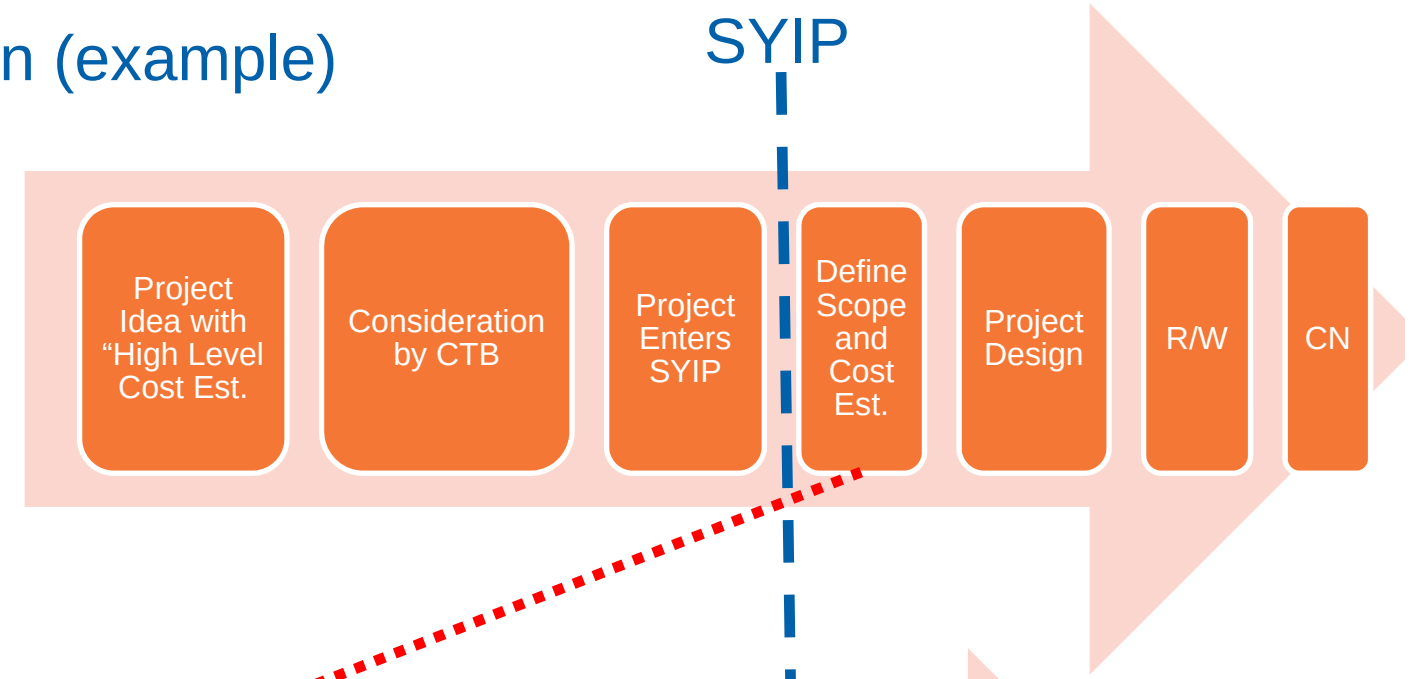
HB2 project applications must include the following information:

- **Scope** - The scope should define the limits of the project, its physical and operational characteristics, and physical and/or operational footprint.
- **Cost Estimate -** Cost estimate should be as realistic as possible – considering known information and should account for possible risk and contingencies.
- **Schedule –** Anticipated schedule should be realistic and reflect complexity of project and identify phase durations (PE, RW, CN)

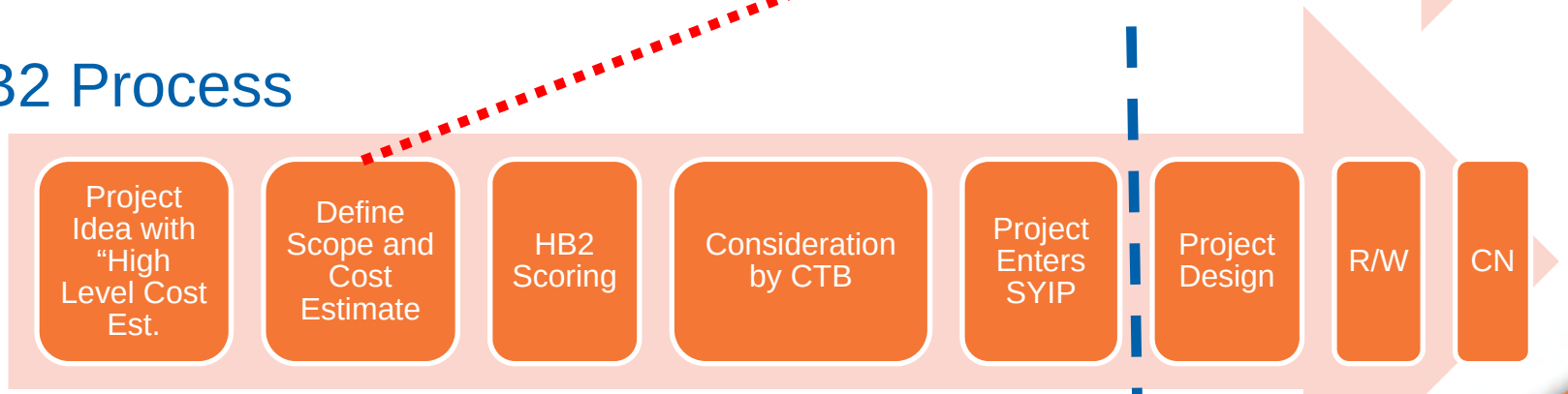
VDOT and DRPT will assist applicants in the development of project scopes, cost estimates, and schedules

Then/Now

Current Situation (example)



HB2 Process



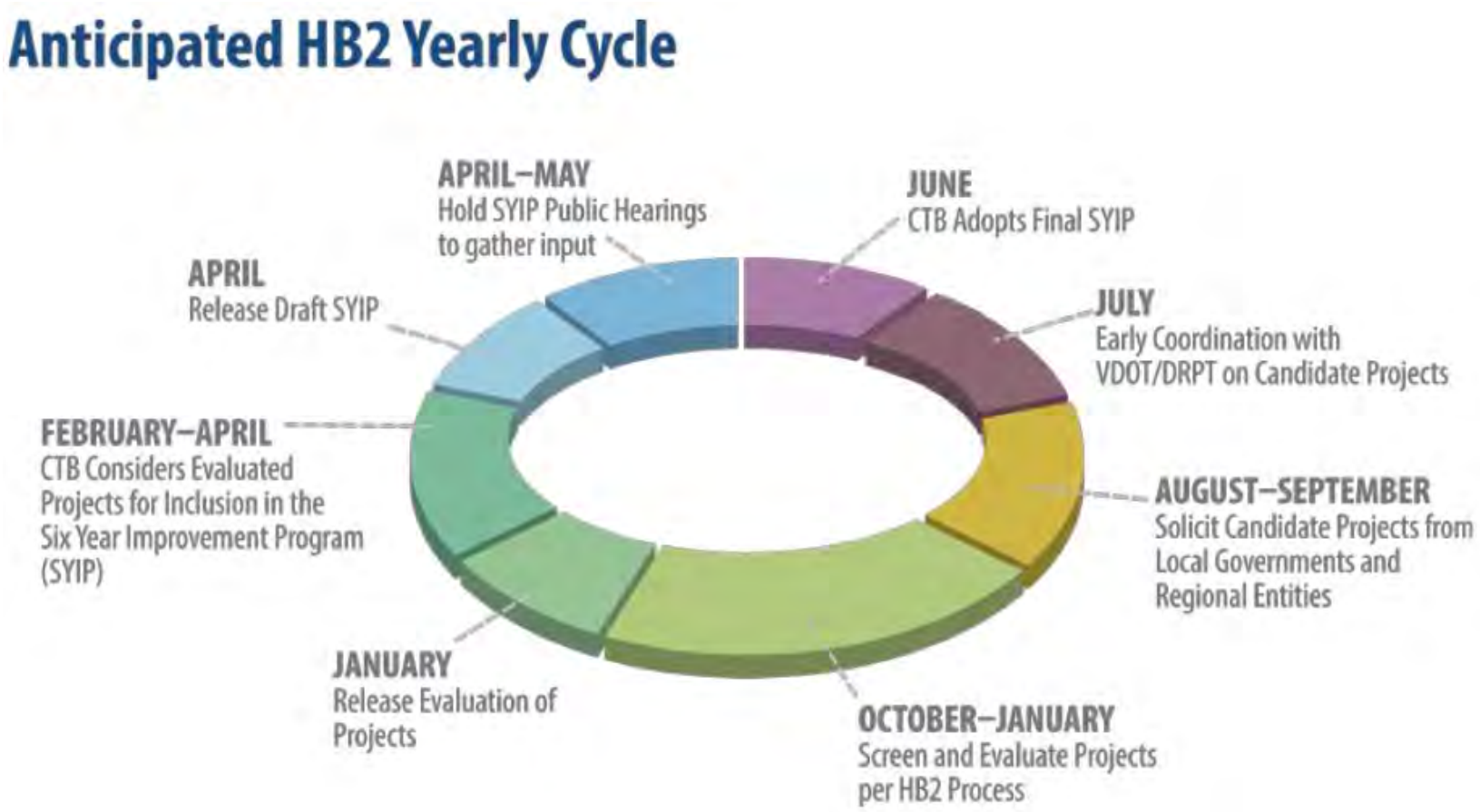
HB2 Cost Estimates

- PCES Workbook is the preferred tool for developing cost estimates for road improvements
- If quantities are known, TRANSPORT can be used for cost estimation
- Accurate cost estimates critical because:
  - Cost impacts the project score
  - Cost estimate increases could force project to be rescored
- VDOT/DRPT will assist applicants with the development of cost estimates

Project Readiness

- Projects that conceptual in nature and not well defined may need additional planning/pre-scoping level work before project can be submitted and scored under HB2
- In these cases, VDOT/DRPT may recommend to applicant the need for additional study prior to HB2 submittal

HB 2 Process
Timeline for implementation



HB2 Schedule

- Overall Schedule
  - June/July – Training and outreach to applicants
    - HB2 process – early July
    - HB2 web application – late July
  - July 1st to September 30th
    - Project coordination (now to August 30th)
      - Communication and coordination with applicants (RAs/REs/PIMs/DPMs/DRPT)
      - Project definition/scope
      - Project documentation
  - August 1st to September 30th – Application submission
  - October 1st to December 31st – Screening and Scoring
  - January – June 2016 – CTB considers results in developing SYIP

Additional Resources

- Presentations to the CTB
  - www.ctb.virginia.gov
- HB2 Implementation Guide and Appendices
  - http://virginiahb2.com/docs/HB2PolicyGuide_MeasuresAppendices_05182015.pdf
- HB2 Website
  - http://virginiahb2.org

VDOT Recommended HB2 Applications for Nelson County

1) **Route 151/6/638 HSIP Project (Existing Project)** Existing HSIP Project with revenue shortfall and identified VTRANS Safety Hotspot. Located on a Regional Network (US 151) and in an area of high Economic Development.

Intersection Improvement Safety Project submittal to secure shortfall

2015 Long Range Transportation Plan Prioritization**: Rank #5, Project ID: 28**
2013 Route 151 Corridor Study Identified Intersection **Recommendation #14**
VTRANS Top 100 PSI Intersections (Fatalities & Serious Injuries), **Lynchburg District #27**

2) **Route 29 / 655 Intersection Improvement** Identified VTRANS Safety Hotspot on a Corridor of Statewide Significance (Seminole Corridor, Segment I2-US Route 29)

    1) Right turn lane and taper to be constructed on Route 29 Southbound at the intersection of Route 655
    2) The existing right turn lane and taper on Route 29 Northbound at the intersection of Route 655 to be extended / widened

2015 Long Range Transportation Plan Prioritization: **Rank #2, Project ID: 10**
VTRANS Top 100 PSI Intersections (Fatalities & Serious Injuries), **Lynchburg District #3**

3) **Route 151 / 664 Turn Lane** Identified Safety Improvement in Route 151 Study and located on a Regional Network (US 151) and in an area of high Economic Development.

    1) Offset Right turn lane and taper to be constructed on Route 151 Southbound at the intersection of Route 664

2013 Route 151 Corridor Study Identified Intersection **Recommendation #1**

Nelson County Rural Long Range Transportation Plan Prioritization
Project Evaluation and Scoring Results

July 2015

Table of Contents

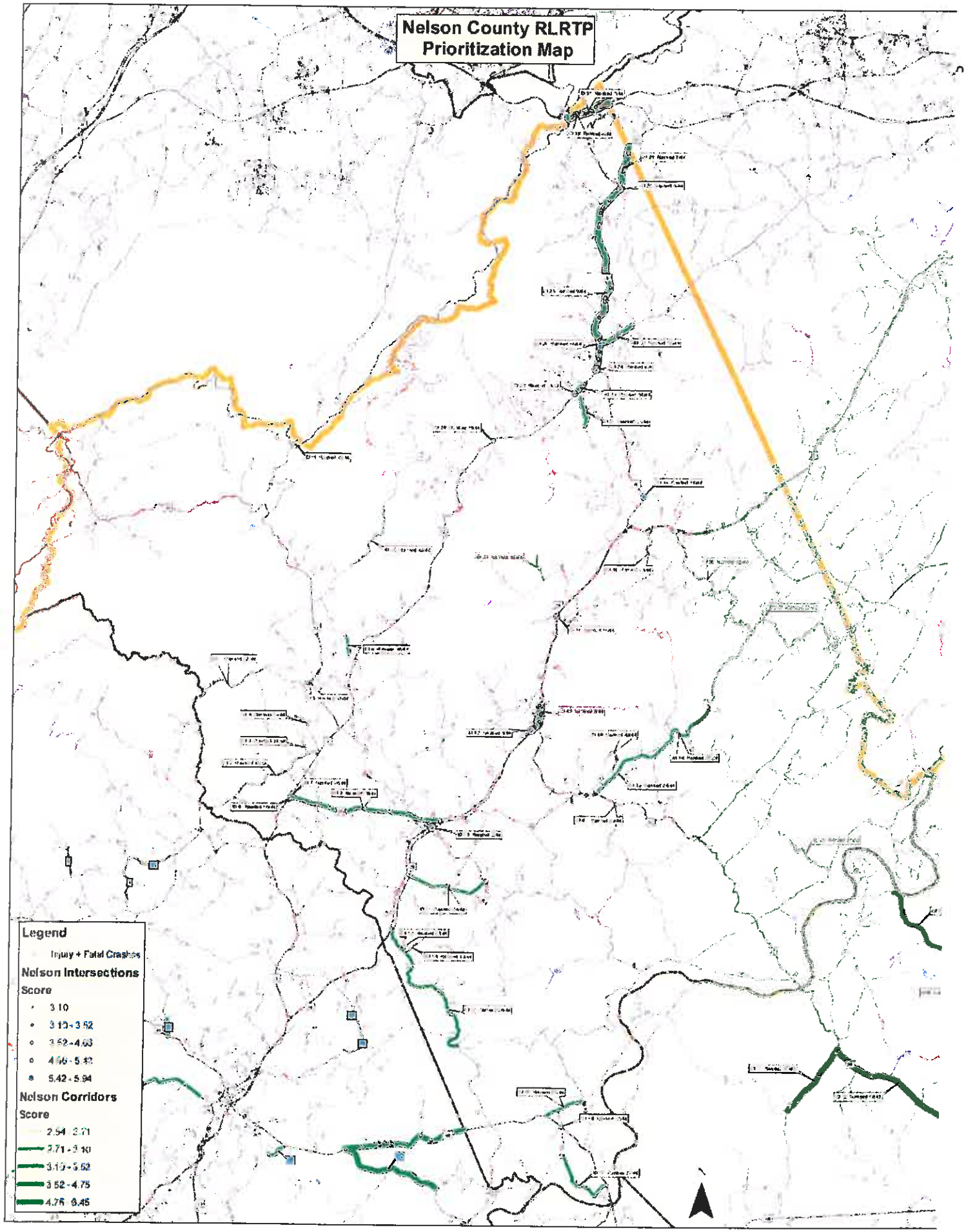
Introduction

- Recently, a growing emphasis has been placed both at the federal and state levels to develop a more objective and transparent method of evaluating transportation improvement projects in transportation plans in order to develop priorities. The development of a district-wide prioritization ranking process that ranks all of the rural long range transportation plan projects based on performance measures and the technical attributes of each project has become not only a priority at VDOT, but also at the national level.
- The MAP-21 transportation reauthorization bill, which took effect on October 1st, 2012, places new emphasis on performance-based measures as well as performance-based funding. In 2002, the Virginia Auditor of Public Accounts and in 2001, the Joint Legislative Audit and Review Commission developed separate reports recommending that VDOT develop a prioritization methodology for transportation plan improvement projects that would help provide additional justification for project selection and programming. This was further necessitated by the passage of HB 771 by the Virginia General Assembly in 2002 which specified requirements of plans to assess transportation needs and assign priorities. The VTrans2035 Statewide Multi-Modal Policy Plan and the Virginia Surface Transportation Plan (VSTP) placed new emphasis on performance-based ranking and the prioritization of transportation plan projects. There are a number of key reasons why the creation of a performance-based ranking of projects within a transportation plan will ultimately lead to more professional and thoughtful project selection and funding decisions as outlined below. Data compiled for the ranking process is meant to be transparent and without political bias to indicate the technical need of each project relative to all the others from a transportation plan.
- In January of 2014, Virginia House Bill 2 was passed which provides for the development of a prioritization process for projects funded by the Commonwealth Transportation Board (CTB). The new mandated prioritization process will score and rank CTB projects by factors such as economic development, accessibility, congestion mitigation, safety and environmental quality. This new focus on prioritizing projects at the state level only validates the importance of this document which aims to prioritize and rank rural projects based on similar weighted factors.
- Why develop a prioritization process and ranking for road improvement projects from long range transportation plans?
  - Brings more transparency to the project selection process.
  - Provides a common basis with which to rank planned transportation projects of different types, purposes, and origins.
  - Creates transparency in the public process.
  - Streamlines the project development process across the state.
  - Encourages decision makers to focus limited transportation funds on selecting projects for the SYIP with the most needs based on weighted technical attributes.
  - Strengthens the link between planning and programming.
  - To provide a better assessment of system performance using transparent data.
- The VDOT developed performance targets and a prioritization process in coordination with Metropolitan Planning Organizations (MPO's) and Planning District Commissions (PDC's) that aims to streamline the project selection process and create more transparency in the technical attribute data of each project within a transportation plan. MAP-21 identifies seven principle areas to determine performance measures including safety, infrastructure condition, system reliability, congestion reduction, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. Developing a prioritization process and ranking matrix is also consistent with the goals in the statewide multi-modal transportation policy plan known as VTrans2035 and House Bill 2. Funding constraints and declining revenue for transportation improvements means that funds must be optimized to ensure that the most critically needed projects receive a higher priority. The VTrans2035 report specifies that performance-based scenario analysis should be utilized in order to optimize revenue in a professional and sustainable fashion.
- Each project was ranked by county based on weighted attribute data such as vehicle to capacity ratio, current and future daily traffic counts (AADT), flow rate, level of service, number of crash injuries and fatalities per mile, number of heavy trucks, and a number of environmental and social attributes. The final priority rankings of the 2035 Rural LRTP planned transportation projects based on a technical needs assessment will serve as an additional guide and tool to assist in the project selection process and optimize funds available for projects.

Roadway Elements Weights Relative to Prioritization Goals

Roadway Element/Attribute	Description	Weight Relative to Prioritization Goals
Proposed Number of Lanes	Number of recommended lanes	N/A
Length of project	Total length in miles of the proposed recommendation.	N/A
2012 Level of Service	Measure used to determine the effectiveness	33%
2012 V/C Ratio	Volume-to-Capacity Ratio is an index to assess traffic	33%
2013 AADT	2011 Average Annual Daily Traffic is the total volume of	N/A
2035 AADT	Projected 2035 Average	N/A
Flow Rate (pcphpl)	The maximum rate of flow reasonably expected on an existing roadway while maintaining a certain LOS in person cars per hour per lane	33%
Fatal + Injury Crash Rate per Mile 2010-2013	Total number of aggregate injuries and fatalities on the roadway per mile from 2006 - 2010	100%
Number of Heavy Trucks	Total number of heavy trucks in 2011 on a select roadway	50%
Cultural Resources	Total number of historic properties and cultural resources	N/A
T&E Species	Threatened and Endangered	50%
R/W Impact	Any impacts on the right-of-way considered	50%
Include HOV, Bike/Ped. other Modes	Any special accommodation features for HOV, bicycle, pedestrian, or transit are considered here	25%
Sq. Ft. Structurally Deficient Bridge	Total Square footage of a structurally deficient bridge from the 2035 Rural LRTP	25%
Total Cost	Estimated cost of the recommended	25%

Nelson County RLRTP Prioritization Map



Prepared by the VDOT Lynchburg District Transportation Planning Section
November 2014

1 in = 0.8 mile

0 1.25 2.5 5 7.5 10
Miles

Project Prioritization Matrix Results

RANK	ID	ROUTE	CONSTRUC-TION DISTRICT	JURISDICTION	FROM:	TO:	TYPICAL SECTION	AVER-AGE
1	31	64	Lynchburg	Nelson	Augusta CL	Albemarle CL	6	6.45
2	10	29/655	Lynchburg	Nelson	Amherst CL	56	4	5.94
3	42	29/BUS29	Lynchburg	Nelson	56	29S BUS	4	5.58
4	24	151/635	Lynchburg	Nelson	6 S	784	2	5.56
5	28	151/6/638	Lynchburg	Nelson	6 N	Albemarle CL	2	5.42
6	30	250	Lynchburg	Nelson	Augusta CL	6	3	5.41
7	29	151	Lynchburg	Nelson	6 N	Albemarle CL	2	5.19
8	43	29 BUS	Lynchburg	Nelson	29S BUS	29N BUS	2	5.16
9	25	151	Lynchburg	Nelson	6 S	784	2	5.10
10	23	151	Lynchburg	Nelson	751	6	2	4.75
11	32	29/775	Lynchburg	Nelson	29N BUS	623	2	4.66
12	26	151/6	Lynchburg	Nelson	6 S	784	2	4.64
13	22	151/613	Lynchburg	Nelson	751	6	2	4.52
14	35	6/634	Lynchburg	Nelson	151	29	2	4.29
15	27	635	Lynchburg	Nelson	6/151	633	2	4.08
16	7	151/56	Lynchburg	Nelson	151 Y	56	2	3.52
16	8	151	Lynchburg	Nelson	151 Y	56	2	3.52
18	16	60/622	Lynchburg	Nelson	Amherst CL	622	2	3.38
19	20	151/627	Lynchburg	Nelson	707	751	2	3.29
19	9	56	Lynchburg	Nelson	151	29	2	3.29
21	21	613	Lynchburg	Nelson	612 S	612 N	2	3.19
22	12	739	Lynchburg	Nelson	657	29	2	3.10
22	41	56/647	Lynchburg	Nelson	639	722	2	3.10
24	11	665	Lynchburg	Nelson	29	655	2	3.00
24	39	639	Lynchburg	Nelson	56	719	2	3.00
26	13	657	Lynchburg	Nelson	721	739	2	2.99
27	15	626	Lynchburg	Nelson	60	606	2	2.90
27	17	656	Lynchburg	Nelson	60	622	2	2.90
27	38	639	Lynchburg	Nelson	719	643	2	2.90
30	5	666	Lynchburg	Nelson	679	56	2	2.81
30	6	681	Lynchburg	Nelson	666	679	2	2.81
32	1	666	Lynchburg	Nelson	827	679	2	2.71
33	2	676	Lynchburg	Nelson	778	151	2	2.65

Project Prioritization Matrix Results Continued

RANK	ID	ROUTE	CONSTRUC-TION DISTRICT	JURISDICTION	FROM:	TO:	TYPICAL SECTION	AVER-AGE
33	3	705	Lynchburg	Nelson	676	Dead End	2	2.65
33	4	780	Lynchburg	Nelson	674	Dead End	2	2.65
33	14	662	Lynchburg	Nelson	739	661	2	2.65
33	33	756	Lynchburg	Nelson	623	Dead End	2	2.65
33	34	828	Lynchburg	Nelson	19	Dead End	2	2.65
33	37	617	Lynchburg	Nelson	800	639	2	2.65
40	36	617	Lynchburg	Nelson	639	29	2	2.64
41	45	604	Lynchburg	Nelson	626	626	2	2.55
42	18	680	Lynchburg	Nelson	699	.5 699	2	2.54
42	19	814	Lynchburg	Nelson	Blue Ridge Pky	Augusta CL	2	2.54
42	40	694	Lynchburg	Nelson	649	Dead End	2	2.54

Project Description

Project ID: 28

Location: VA 151 at VA 6 at VA 638

Description: Deficiencies with low priority; **Continue to monitor for** potential improvements

Estimated 2020 Cost: $50,000

Prioritization Results

Final Score: 5.42 (High)

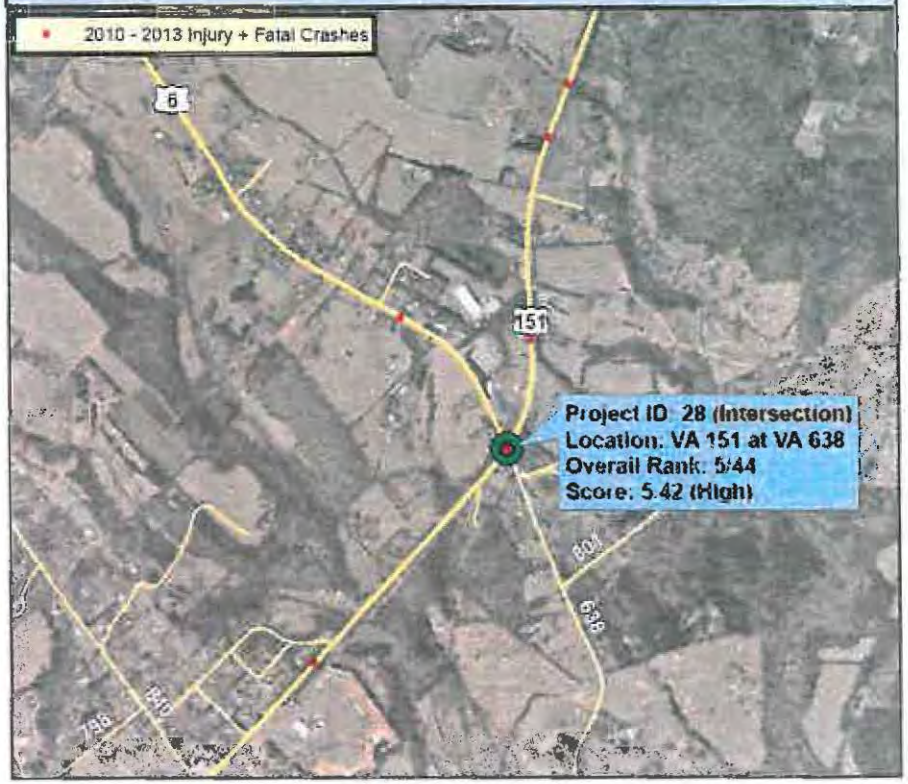
Overall Rank: 5 of 44

Intersection Projects Rank: 4 of 12

2010—13 Fatal + Severe Injuries Crashes per Mile: 8

Major Environmental Impacts: N/A

Project Location Map



Overview of Performance Measure Data

ID	CONSTRUCTION DISTRICT	JURISDICTION(S)	ROUTE	FROM:	TO:	PROPOSED NUMBER LANES	Goal 1					Goal 2	Goal 3		Goal 6			
							Mobility					Safety/Security	Economic Development		System Management and Preservation			
							A	B	C			A	A	B	A	B	C	D
							2012 LOS	2012 V/C	2013 AADT	2035 AADT	Flow Rate (pc/phpl)	Fatal+Injury Crashes per mile (2010-13)	# Heavy Trucks	ARRA Factors (Unemployment and Per Capita Income)	Pavement Condition	Include HOV, Bike/Ped other modes	Sq Ft Structurally Deficent Bridges	Total Cost (in thousands)
28	Lynchburg	Nelson	151/6/638	SN	Albemarle CL	2	4	0.32	8080	9853	529	8	435	1		1	0	50

* Coss / Sight Colleen / 29

Project Description

Project ID: 10

Location: US 29 at VA 655

Description: Short-term improve signage; Mid-term lengthen turn lanes. (Local Priority)

Estimated 2020 Cost: Short-term / Mid-term: $750,000

Prioritization Results

Final Score: 5.94 (High)

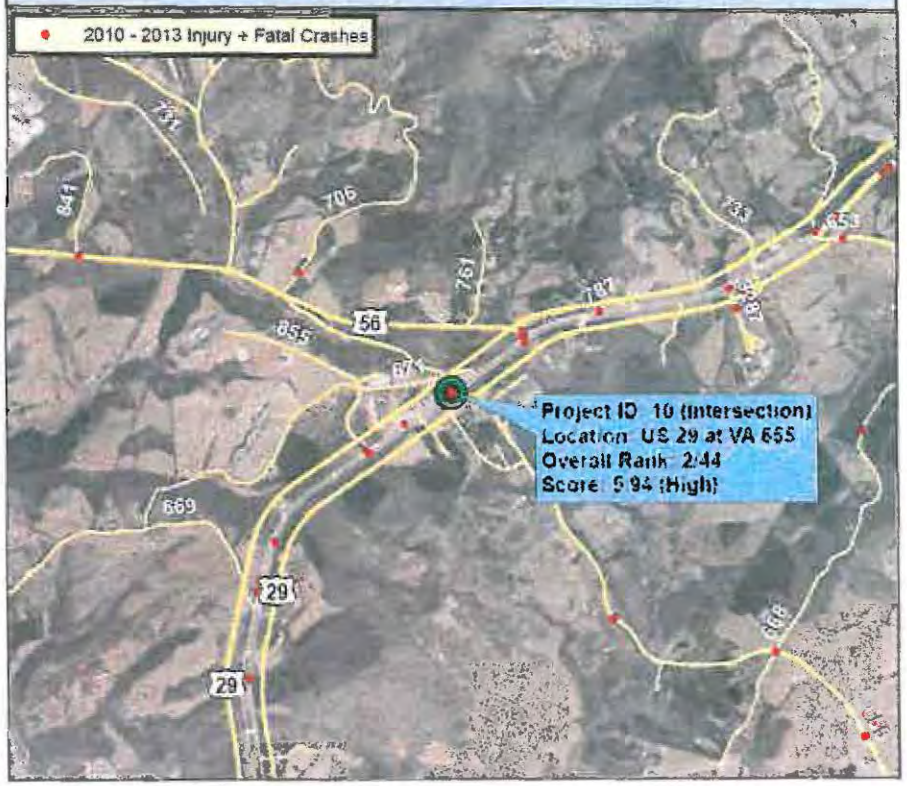
Overall Rank: 2 of 44

Intersection Projects Rank: 1 of 12

2010—13 Fatal + Severe Injuries Crashes per Mile: 22

Major Environmental Impacts: N/A

Project Location Map



Overview of Performance Measure Data

ID	CONSTRUCTION DISTRICT	JURISDICTION(S)	ROUTE	FROM:	TO:	PROPOSED NUMBER LANES	Goal 1					Goal 2	Goal 3		Goal 5			
							Mobility					Safety/Security	Economic Development		System Management and Preservation			
							A	B	C			A	A	B	A	B	C	D
							2012 LOS	2012 V/C	2013 AADT	2035 AADT	Flow Rate (pcphpl)	Fatal+Injury Crashes per mile (2010-13)	# Heavy Trucks	ARRA Factors (Unemployment and Per Capita Income)	Pavement Condition	Include HOV, Bike/Ped other modes	Sq Ft Structurally Deficent Bridges	Total Cost (in thousands)
10	Lynchburg	Nelson	29/655	Amherst Co	55	4	1	0.17	15737	26129	382	22	1791	0		1	0	750

3.5 Safety Assessments

The Existing Conditions safety assessment, presented in **Section 2.4**, focused on identifying crash patterns at the 15 study intersections along the study corridor, general patterns for the corridor, and identifying potential mitigation measures. Information gathered from public comments received at the first public meeting was also considered in the process. The safety assessment considered Crash Modification Factors (CMFs) to quantify an expected reduction in crashes if various measures were implemented. The primary source for CMF was the AASHTO Highway Safety Manual (HSM)[1], while the VDOT Highway Safety Improvement Program (HSIP) CRFs were used as a supplement reference where the HSM did not have listed factors. The HSM was also used to develop additional countermeasures or recommendations to improve safety. The operations of any improvements that recommended new turn lanes or a roundabout was tested and presented in **Section 3.4**.

Intersection Recommendations

Full details by intersection are presented in **Appendix D**, and include a crash type diagram, crash summary, including time of day, field observations, as well as detailed recommendations. Corridor-wide recommendations to address general deficiencies are also provided. Key recommendations, listed by intersections and the corridor, are as follows:

1. **Route 664 (Beech Grove Road / Glenthorne Loop) at Route 151**
   - Adjust the signage along northbound Route 151.
   - Add a southbound right turn bay; offset the turn bay by 6 feet to aid drivers on the eastbound approach to differentiating of southbound through movement versus right turning vehicles.

2. **Route 627 (Spruce Creek Lane and Glenthorne Loop) at Route 151**
   - Realign Route 627 to reduce skew (by 25 degrees) and improve sight distance.
   - Add intersection-ahead signage with flashers on the northbound approach.
   - Regrade the embankment in the southwest quadrant.

3. **Route 634 (Adial Road)/Nellysford area at Route 151**
   - Add sidewalks for pedestrians.
   - As new development or re-development occurs, improve access management and inter-parcel connectivity.

4. **Route 613 (Rodes Farm Drive and Lodebar Estate) at Route 151**
   - Reduce the crest of hill and regrade the embankments to improve sight distance.
   - Review commercial signage to ensure signage is not within the VDOT right-of-way.

[1] AASHTO, Highway Safety Manual, 1st Edition, 2010.

5. **Route 6 (River Road) at Route 151**
   - Widen the east leg of the intersection creating a wider receiving lane for turning vehicles.
   - Consider a roundabout or southbound left turn bay.

6. **Route 635 (Rockfish School Lane) at Route 151**
   - Construct a northbound left turn lane. Note that an HSIP grant for the turn bay was recently approved. Designs will be prepared and the preliminary start date of construction is October 2015.

7. **Route 635 (Greenfield Road) at Route 151**
   - Extend the northbound right turn bay by utilizing (restriping) the existing northbound shoulder prior to the start of the turn bay.

8. **Route 729 (Creek Road) at Route 151**
   - Restripe the roadway to provide a northbound left turn into the Ashley's Market southern access.
   - Add a southbound right turn bay on Route 151 for turning traffic onto Creek Road, move the stop bar on Creek Road closer to the southbound through lane.

9. **Route 784 (Bland Wade Lane) at Route 151**
   - Consider changing flashers to be demand responsive, so that they flash only when a vehicle is present or approaching (35 mph advisory speed sign with flashers already present).
   - Regrade the roadway to improve sight distance and eliminate the dip in the road, or
   - Consider relocating Bland Wade Lane south of the Fitness Center.

10. **Route 760 (Sunrise Drive) at Route 151**
    - Regrade the roadway to reduce crest and reduce embankment.
    - Add deer crossing signs in vicinity of intersection.

11. **Route 609 (Mill Lane) at Route 151**
    - Improve access management.
    - Widen the bridge structure.

12. **Route 638 S (Avon Road) at Route 151**
    - Move the stop bar on Route 638 closer to the roadway to improve sight distance.
    - Add deer crossing signs south of the intersection and gas station.

13. **Route 840 (Tanbark Drive) at Route 151**
    - Refresh the yellow lines and stop bars and move the stop sign.
    - Consider rumble strips on Route 840 approaches.
    - Regrade Tanbark Road to improve visibility to Route 151.
    - Regrade the embankment in the southwest and southeast quadrants.

14. Route 6 (Afton Mountain Road) and Route 638 North (Avon Road) at Route 151

- Construct left turn lanes for the northbound and southbound approaches. Note that an HSIP grant for the turn bays was recently approved, designs will be prepared and the preliminary start date of construction is March 2016.
- Reconfigure the eastbound right turn lane to reduce skew by 20 percent.
- Improve signage.
- Consider rumble strips on the approaches of Routes 6 and 638 to the intersection.
- Regrade the approaches of Routes 6 and 638 to the intersection.

15. U.S. Route 250 (Rockfish Gap Turnpike) at Route 151

- Extend the westbound left turn lane.
- Offset the eastbound right turn bay by 12 feet to improve the visibility of eastbound through vehicles.
- Consider street lighting at the intersection.
- Consider a roundabout or signalization with a northbound right turn lane. If this improvement would not be constructed, consider a northbound right turn lane with an acceleration lane on U.S. 250.

General Recommendations

In additional to the location-specific recommendations, general recommendations were developed for the corridor, which include:

- Perform speed studies to set speed limits appropriate for traffic patterns and land uses along the corridor.
- Improve access management for existing parcels by looking for opportunities to consolidate existing driveways and inter-parcel connectivity. Ensure new developments comply with VDOT access management guidelines.
- Develop a comprehensive plan for the Village of Nellysford. For the transportation components, key elements to be considered include parallel road(s) to Route 151, inter-parcel connectivity and pedestrian/bicyclist accommodations.
- Reconstruct Route 151 to correct geometric deficiencies (horizontal, vertical and/or sight distance) and to provide paved shoulders to accommodate pedestrians and cyclists. This project can be phased by segment.
- Reduce sign clutter. VDOT should improve wayfinding and other roadway signage as projects are implemented along the corridor. Nelson County will review and update its zoning ordinance relative to commercial signage within and adjacent to the VDOT right-of-way.
- As state funding becomes available, replace deficient guardrail or install new guardrail at the identified locations.
- Nelson County police should continue its active program in enforcing the speed limit and truck size regulations for the corridor. Nelson County should continue to work with VDOT on geometric safety issues.

Intersection Number	Jurisdiction	Route ID	AADT	Crashes 2010-2012	Fatal & Serious Injury Crashes 2010-2012	Rank by Total Crash PSI	Rank by Fatal & Serious Injury PSI
253129	City of Hampton	US00258	3533	38	14	32	88
611853	City of Franklin	14503904	3696	22	13	84	89
541189	City of Virginia Beach	SR00190	3437	18	12	98	90
484107	City of Portsmouth	12408540	1807	16	8	68	91
542061	City of Virginia Beach	13408726	4121	18	9	89	92
253170	City of Hampton	11407049	5592	33	13	41	93
483340	City of Chesapeake	C1SR00168	7670	42	15	28	94
398045	James City County	4700614	3592	11	9	95	95
398156	James City County	US00060	4472	15	10	100	96
483448	City of Chesapeake	C1SR00168	2126	13	8	88	97
541328	City of Virginia Beach	13408691	3669	12	7	86	98
730703	City of Norfolk	SR00165	4282	15	7	64	99
483281	City of Portsmouth	SR00141	2376	18	11	90	100

1ble A-5: Top 100 PSI Intersections (Fatalities & Serious Injuries), Lynchburg District

Intersection Number	Jurisdiction	Route ID	AADT	Crashes 2010-2012	Fatal & Serious Injury Crashes 2010-2012	Rank by Total Crash PSI	Rank by Fatal & Serious Injury PSI
178797	Campbell County	CBUS00460	6917	63	19	1	1
179392	City of Lynchburg	11806044	2595	18	11	6	2
373185 (2)	Nelson County	US00029	419	15	10	13	3
178442	Campbell County	CBUS00460	7134	46	15	2	4
519779	City of Danville	C1US00029	6997	24	12	10	5
519778	City of Danville	C1US00029	1651	21	9	4	6
802043	Albemarle County	SR00151	2603	17	10	11	7
519809	City of Danville	C1US00029	1986	27	9	8	8
368641	Halifax County	US00501	7008	34	14	12	9
531450	Prince Edward Co.	US00015	2433	12	7	15	10
575002 (4)	Nelson County	US00029	1615	13	7	22	11
130057	Appomattox County	US00460	237	9	6	32	12
179478	City of Lynchburg	CBUS00460	2985	16	8	51	13
519807	City of Danville	C1US00029	1645	26	9	9	14
125265	Amherst County	C5US00029	862	11	5	16	15
178558	Campbell County	CBUS00460	882	12	6	18	16
368777	Halifax County	SR00129	763	11	5	20	17
368217	Halifax County	4100654	1429	8	5	77	18
734281	City of Danville	C1US00029	958	9	5	23	19
519743	City of Danville	SR00293	2645	11	5	14	20
178232	Campbell County	US00460	1690	6	5	82	21
518588	Pittsylvania County	SR00041	1344	9	4	35	22
173151	Buckingham County	US00015	425	6	5	60	23
700706 (6)	Nelson County	SR00151	1870	10	5	24	24

Summary of Comments on Pages from 2_-_VMTP_Statewide_Safety_073015 Lynchburg District.pdf

Page: 1

Number: 1 Author: cmcgarry Subject: Highlight Date: 9/2/2015 12:13:11 PM

Number: 2 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:12:50 PM
location is Intersection of Rt. 29 and Route 655 (Arrington Rd.) in Colleen at the Dairy Isle Cross Over.

Number: 3 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:44:35 AM

Number: 4 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:11:49 PM
Location is the Food Lion intersection in Lovingston.

Number: 5 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:44:41 AM

Number: 6 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:11:43 PM
Location is intersection of Route 151 and Route 6 at Martin's Store.

Number: 7 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:44:46 AM

Intersection Number	Jurisdiction	Route ID	AADT	Crashes 2010-2012	Fatal & Serious Injury Crashes 2010-2012	Rank by Total Crash PSI	Rank by Fatal & Serious Injury PSI
125106	Amherst County	0500622	947	7	5	30	25
273535	Nelson County	SR00151	680	9	6	33	26
473118	Nelson County	SR00151	383	7	4	45	27
519923	City of Danville	CFUS00058	2158	26	7	5	28
178783	Campbell County	CBUS00460	585	8	4	71	29
178196	Campbell County	SR00024	911	11	4	25	30
518543	Pittsylvania County	7100729	1422	8	4	39	31
741483	Amherst County	SR00130	1668	8	5	28	32
179607	City of Lynchburg	11806012	2868	29	7	3	33
126036	Amherst County	US00029	992	11	5	26	34
519849	Pittsylvania County	SR00057	560	9	7	41	35
727314	Town of South Boston	US00501	643	8	4	40	36
531454	Prince Edward County	US00460	2690	13	5	21	37
179228	City of Lynchburg	11806035	1507	6	4	68	38
520338	City of Danville	10803755	982	6	4	34	39
178109	Campbell County	1500622	162	18	4	7	40
518909	Pittsylvania County	US00058	100	6	5	57	41
178299	Campbell County	1500682	1065	5	3	67	42
712480	Town of South Boston	1US00501P	429	10	3	19	43
520350	City of Danville	10803759	1071	8	3	31	44
368147	Halifax County	US00501	408	7	3	38	45
368214	Halifax County	SR00360	59	4	4	85	46
179546	City of Lynchburg	11806012	1284	10	3	27	47
518454	Pittsylvania County	SR00057	247	4	4	86	48
732957	Prince Edward Co.	US00015	806	8	4	44	49
178636	Campbell County	US00501	86	7	3	36	50
178462	Campbell County	US00501	948	7	3	47	51
125479	Amherst County	US00060	668	6	4	59	52
520132	City of Danville	10803727	682	4	3	78	53
673603	Nelson County	US00029	1870	8	4	50	54
178572	Town of Brookneal	US00501	27	5	5	70	55
518622	Pittsylvania County	7100750	1750	5	3	61	56
812074	Nelson County	US00029	201	4	3	84	57
518566	Pittsylvania County	7100729	226	5	3	58	58
130242	Appomattox County	US00460	1161	7	3	52	59
178230	Campbell County	SR00024	554	5	3	72	60
238004	Cumberland County	2400600	194	5	3	66	61
518531	Pittsylvania County	7100750	1434	10	3	17	62
178086	Campbell County	1500615	196	4	3	87	63
179223	City of Lynchburg	11806033	7	6	4	53	64
103413	Nelson County	SR00151	62	4	3	73	65
178606	Campbell County	US00029	155	5	3	81	66
727316	Town of South Boston	US00501	430	6	2	63	67
368082	Halifax County	US00501	97	3	3	90	68

Page: 2

Number: 1 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:11:26 PM
Location is US 151 and Route 635 Rockfish School Lane HSIP Project Area.

Number: 2 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:44:51 AM

Number: 3 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:11:09 PM
Location is US 151 and Route 6/Route 638 HSIP Project Area in Afton.

Number: 4 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:44:54 AM

Number: 5 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:13:26 PM
Location is US 29 and Route 6 Intersection at Woods Mill.

Number: 6 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:45:03 AM

Number: 7 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:13:35 PM
Location is US 29 South of Nelson County HS and Middle School in Lovingston.

Number: 8 Author: cmcgarry Subject: Highlight Date: 9/2/2015 11:57:41 AM

Number: 9 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:13:32 PM
Location is US 151 and Route 784 (Bland Wade LN) Intersection in Afton.

Number: 10 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:45:08 AM

Intersection Number	Jurisdiction	Route ID	AADT	Crashes 2010-2012	Fatal & Serious Injury Crashes 2010-2012	Rank by Total Crash PSI	Rank by Fatal & Serious Injury PSI
519274	Pittsylvania County	C1US00029	102	4	2	62	69
179806	City of Lynchburg	11806048	1233	5	2	43	70
179512	City of Lynchburg	C1US00501	1079	4	2	65	71
125342	Amherst County	0500681	935	7	2	29	72
50383	Prince Edward Co.	US00015	294	5	2	64	73
368412	Halifax County	US00360	238	6	2	55	74
173136	Buckingham County	US00060	470	4	2	94	75
273469	Nelson County	SR00151	145	7	2	46	76
473402	Nelson County	US00029	39	8	2	42	77
520337	City of Danville	10800011	1149	4	2	83	78
518444	Pittsylvania County	7100703	239	4	3	80	79
179845	City of Lynchburg	11806070	1058	4	2	88	80
518447	Pittsylvania County	7100703	299	3	2	95	81
125351	Amherst County	0500766	357	3	2	79	82
368216	Halifax County	4100654	62	2	2	97	83
706923	Pittsylvania County	7100729	31	3	3	92	84
178849	Campbell County	CBUS00460	79	6	2	37	85
178123	Campbell County	1500858	504	4	2	56	86
368937	Town of South Boston	13004713	848	5	2	54	87
518167	Pittsylvania County	7100634	195	3	2	89	88
238199	Cumberland County	SR00045	275	4	2	75	89
125107	Amherst County	0500622	300	3	2	74	90
178343	Campbell County	SR00024	221	2	2	96	91
518568	Pittsylvania County	7100730	324	6	2	48	92
710830	Pittsylvania County	US00058	116	7	2	49	93
130125	Appomattox County	US00460	392	5	2	76	94
178615	Town of Brookneal	US00501	313	2	2	100	95
518678	Pittsylvania County	US00029	95	4	2	93	96
178611	Campbell County	US00029	48	2	2	99	97
130145	Appomattox County	US00460	86	5	2	69	98
518459	Pittsylvania County	US00058	79	4	2	91	99
178627	Campbell County	US00460	28	3	2	98	100

Table A-6: Top 100 PSI Intersections (Fatalities & Serious Injuries), Northern Virginia District

Intersection Number	Jurisdiction	Route ID	AADT	Crashes 2010-2012	Fatal & Serious Injury Crashes 2010-2012	Rank by Total Crash PSI	Rank by Fatal & Serious Injury PSI
263347	Fairfax County	2900620	7362	88	50	1	1
549330	City of Manassas	15504361	13531	68	43	11	2
263257	Fairfax County	US00001	1495	63	30	4	3
263885	Fairfax County	US00029	8150	60	38	18	4
731589	Loudoun County	5300625	444	87	39	2	5

Page: 3

Number: 1 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:13:43 PM
Location is US 151 and Route 840 (Tan Bark Dr.) Intersection in Afton.

Number: 2 Author: cmcgarry Subject: Highlight Date: 9/2/2015 12:09:59 PM

Number: 3 Author: cmcgarry Subject: Sticky Note Date: 9/2/2015 12:13:41 PM
Location is US 29 and Route 775 (Anderson LN) North of Lovingston between Almost Home Pet Adoption Center and Davis Creek.

Number: 4 Author: cmcgarry Subject: Highlight Date: 8/14/2015 10:45:20 AM

2040 VTrans
SAFE • STRATEGIC • SEAMLESS

VTrans2040 Multimodal Transportation Plan

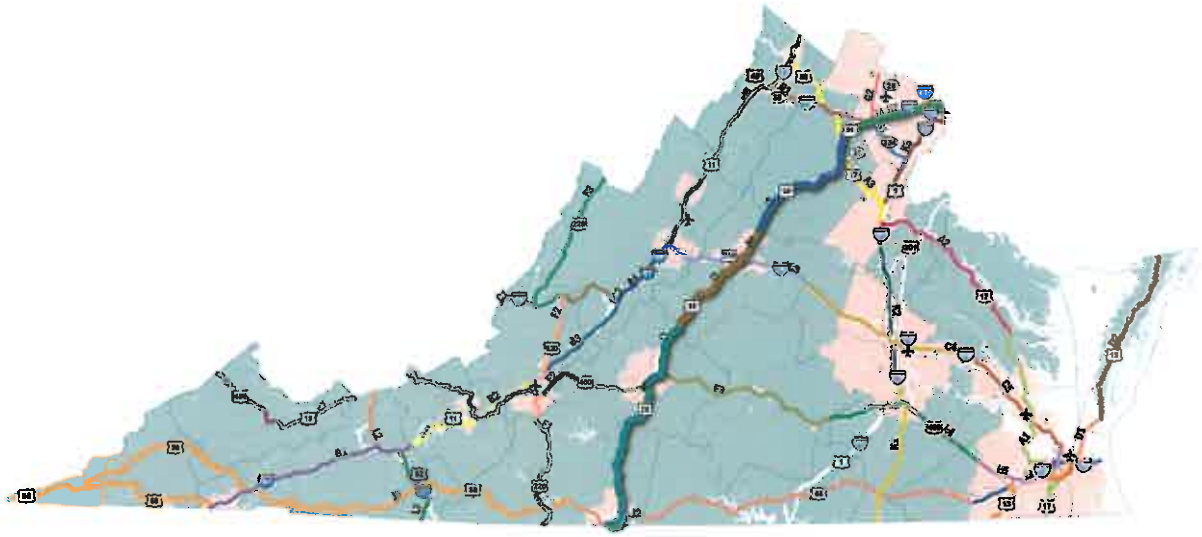
Corridors of Statewide Significance Needs Assessment

Seminole Corridor

Office of INTERMODAL Planning and Investment

DRAFT COPY

I. Corridor Overview



- Corridor of Statewide Significance Component Road
- Railroad
- Airport Facility
- Metropolitan Planning Organization Area
- Planning District Area

Corridors of Statewide Significance

A	Coastal Corridor (U.S. 17)
B	Crescent Corridor (I-81)
C	East-West Corridor (I-64)
D	Eastern Shore Corridor (U.S. 13)
E	Heartland Corridor (U.S. 460)
F	North Carolina to West Virginia Corridor (U.S. 220)
G	North-South Corridor (U.S. 234)
H	Northern Virginia Corridor (I-66)
I	Seminole Corridor (U.S. 29)
J	Southside Corridor (U.S. 58)
K	Washington to North Carolina Corridor (I-95)
L	Western Mountain Corridor (I-77)

The Seminole Corridor (Corridor I) is defined primarily by U.S. Highway (U.S.) 29, which runs north to south in the eastern United States for more than 1,000 miles. The northern terminus of U.S. 29 is in the suburbs of Baltimore, Maryland, and its southern terminus is in Pensacola, Florida. U.S. 29 serves as the major north-south corridor through central Virginia, as it lies west of Interstate 95 (I-95) and east of I-81. It provides the main connection between the Washington, D.C., metropolitan area and the cities of Charlottesville, Lynchburg, and Danville. It is a freight alternative to the heavy-freight corridor of I-81 to the west, and is one of two major corridors (along with U.S. 460) serving the Lynchburg area. U.S. 29 is also defined as a National Scenic Highway.

U.S. 29 is a multi-lane highway through Virginia, with most sections at four lanes. In Northern Virginia and the northern area of the Thomas Jefferson Planning District, U.S. 29 serves as an arterial roadway. Although U.S. 29 provides local access to many areas, there are numerous grade-separated interchanges and bypass routes along its length. U.S. 29 serves as a parallel corridor and local-access route for I-66 in Northern Virginia. Virginia Route 28 also serves as a parallel corridor for U.S. 29 between the western end of Fairfax County and Fauquier County. U.S. 50 serves as a parallel roadway through Fairfax and Arlington Counties. U.S. 29 runs concurrently with other roadways throughout its course in Virginia, including U.S. 15 for a long stretch near Warrenton, U.S. 250 near Charlottesville, and U.S. 460 near Lynchburg.

Multiple line-haul transit options are available along U.S. 29 in Northern Virginia. The Washington Metropolitan Area Transit Authority's (WMATA) Orange and Silver Lines run parallel to U.S. 29. The WMATA lines provide connections to many different local transit providers such as Metrorail, the City of Fairfax City-University Energysaver (CUE) bus system, Fairfax Connector, and Arlington Transit. The Virginia Railway Express (VRE) also operates commuter rail service within the Seminole Corridor between the suburbs of Northern Virginia and Washington, D.C., using the Norfolk Southern Piedmont freight rail line. The Potomac and Rappahannock Transportation Commission also provides commuter bus service along the Seminole Corridor to connect residents of Prince William County and the cities of Manassas and Manassas Park with Metrorail or destinations in Washington, D.C. In addition, express bus service from Culpeper to Washington, D.C., is provided by Rappahannock Rapidan Community Services, and there is an express-bus transit option between Lovingston in Nelson County and the city of Charlottesville, provided by JAUNT.

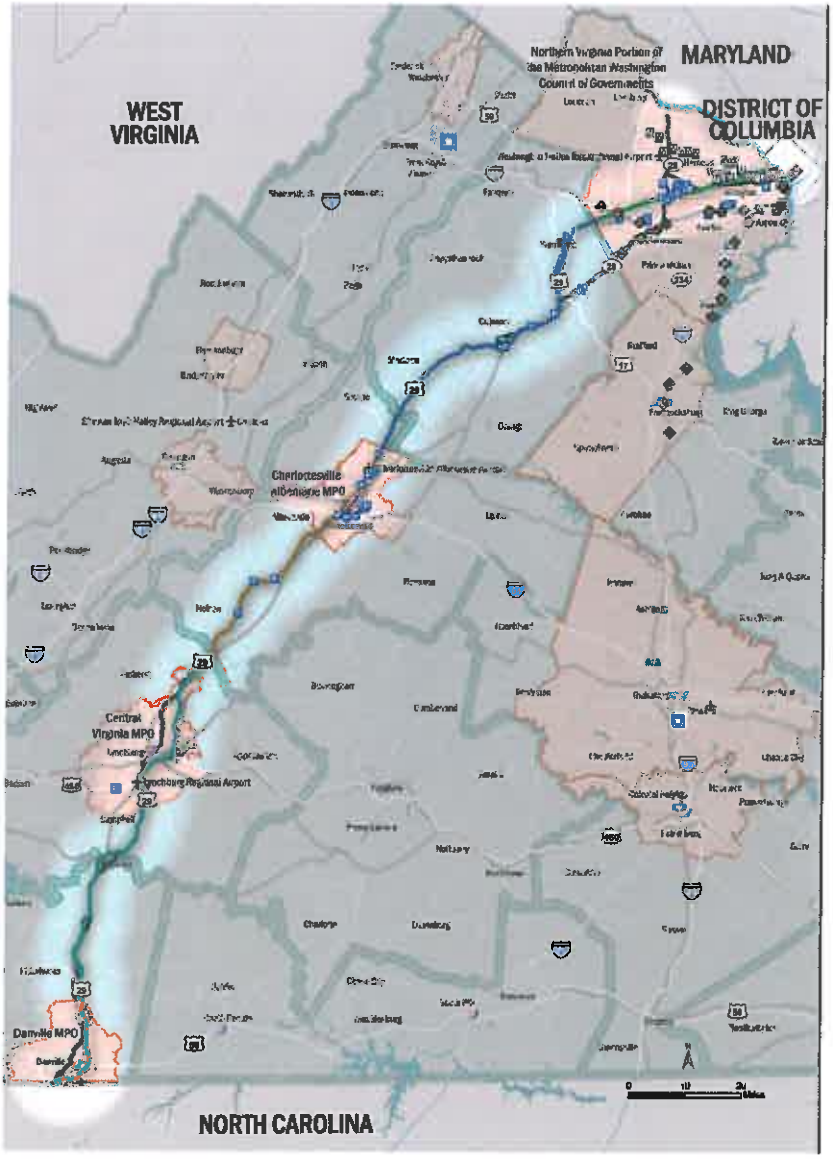
Line-haul transit options are limited south of Charlottesville and Nelson County, although Greyhound offers bus service along the entire Seminole Corridor, with stations located in Danville, Lynchburg, Charlottesville, and Northern Virginia (in Springfield and Woodbridge). Multiple park-and-ride lots exist in Prince William County along the Seminole Corridor, with more in Arlington and Fairfax Counties, generally associated with Metrorail and VRE stations. Park-and-ride lots are also available in Fauquier County, Culpeper County, the city of Charlottesville, and Nelson County. Amtrak's Crescent and Cardinal Routes provide passenger rail service, running directly along the Norfolk Southern rail lines within the Seminole Corridor with stops in Lynchburg, Charlottesville, Washington, D.C., and Manassas.

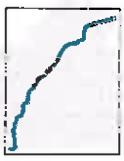
Commercial air service is most readily available using Dulles International Airport in Northern Virginia. Limited commercial service to larger cities is available at Charlottesville-Albemarle Airport and Lynchburg Regional Airport. In addition, there are numerous general-aviation facilities within the corridor.

Norfolk Southern freight rail lines run along virtually the entire Seminole Corridor in Virginia, offering a freight option to points south along U.S. 29 as well as north of Washington, D.C., and to the northeast. The eastern line of the Norfolk Southern's Crescent Route also runs along U.S. 29, connecting the Virginia Inland Port and the western line of the Norfolk Southern's Crescent Corridor via the I-66 corridor Norfolk Southern rail lines. In Charlottesville, these Norfolk Southern lines have a junction with CSX's Coal Corridor, which provides a connection between the Port of Virginia and the Appalachian coal fields to the west. In the Lynchburg area, these lines have a junction with both the Norfolk Southern's Coal Corridor and its Heartland Corridor, which connect the corridor to the Port of Virginia, the Appalachian coal fields, and the Midwest.

Corridor Components

Highway Facilities	
Primary Facility	• US 29
Primary Facility Segments	• I1 • I2 • I3 • I4
Parallel Facilities	• Route 50 • Route 28
Transit Facilities	
	• WMATA Metrorail • Virginia Railway Express • Amtrak • Intercity bus service
Rail Facilities	
Freight	• Norfolk Southern Crescent Corridor
Airport Facilities	
	• Washington Dulles International • Charlottesvill-Albemarle Airport • Lynchburg Regional Airport





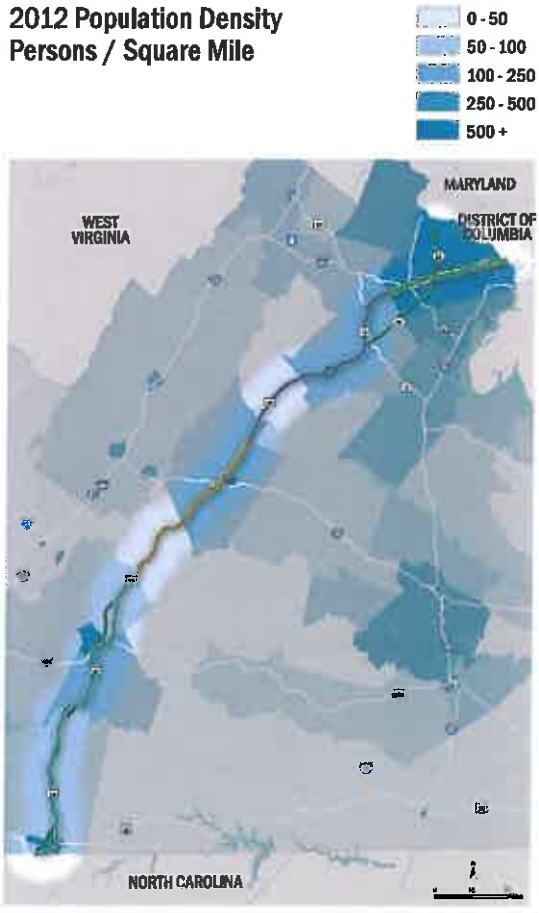
Demographics and Economic Trends

The primary population centers with greater than 500 persons per square mile along Corridor I are currently found in the cities and counties around Northern Virginia. Small pockets with populations greater than 500 persons per square mile along the corridor are also found in Danville, Lynchburg, and Charlottesville. The most densely-populated segment along the corridor is Segment I4 in Northern Virginia. Nelson and Madison Counties have the lowest population densities along the corridor with less than 50 persons per square mile.

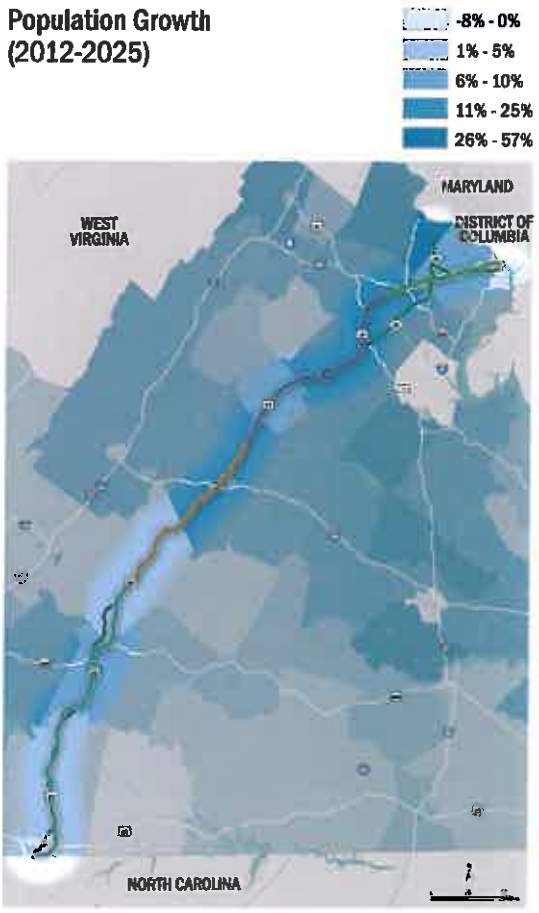
Between 2012 and 2025, Albemarle County adjoining Charlottesville, Greene, Culpepper and Fauquier Counties are anticipated to see the largest population growth (between 11 and 25 percent) among counties along the corridor. The Counties of Pittsylvania, Amherst and Nelson are expected to see the lowest growth, and the populations of Danville and Arlington Counties are expected to shrink. Overall, population along the corridor is expected to grow.

Current employment centers follow a pattern similar to the population centers. Employment is expected to have the highest growth in Greene and Prince William Counties, but is expected to decline in Danville, Lynchburg, and Amherst Counties.

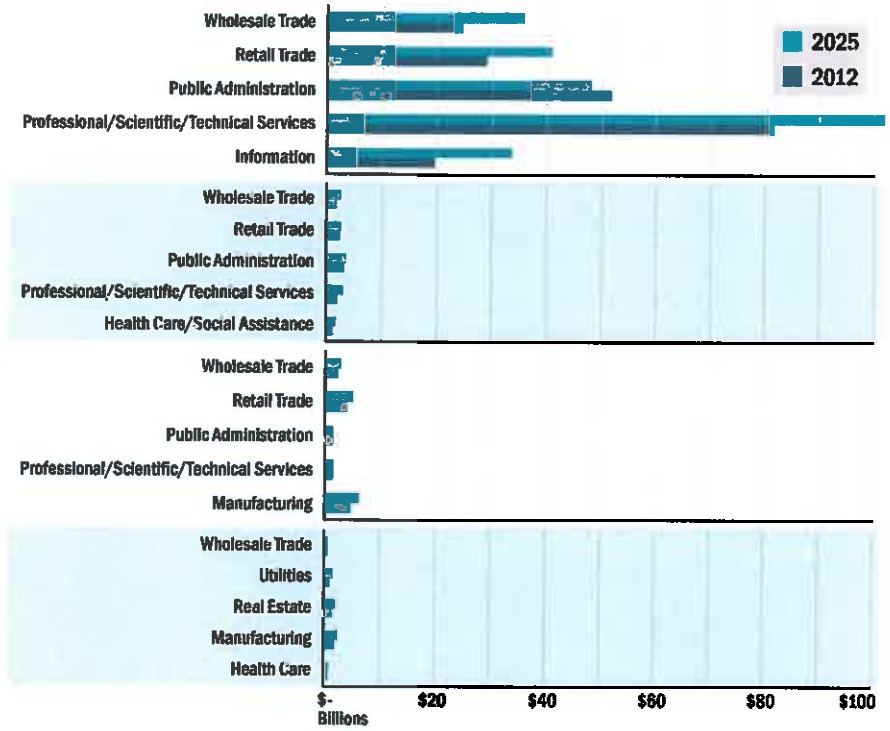
2012 Population Density Persons / Square Mile



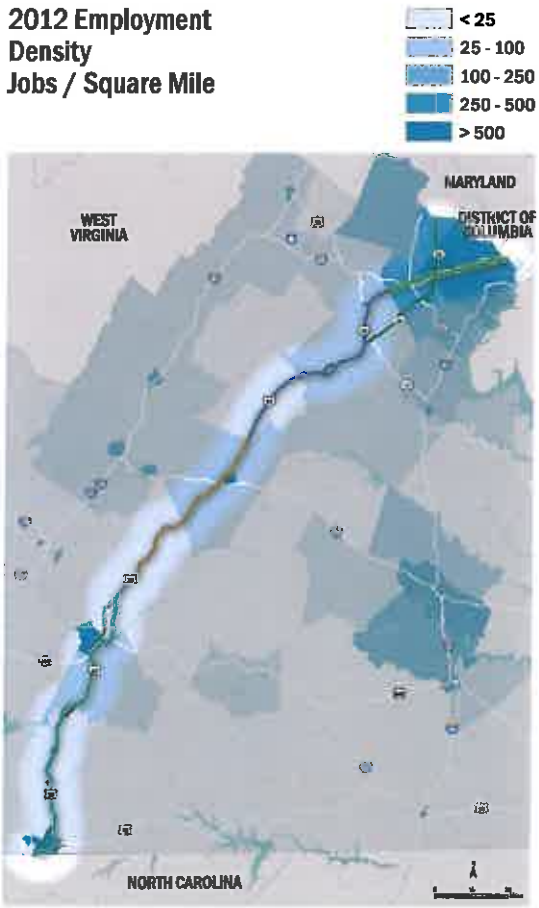
Population Growth (2012-2025)



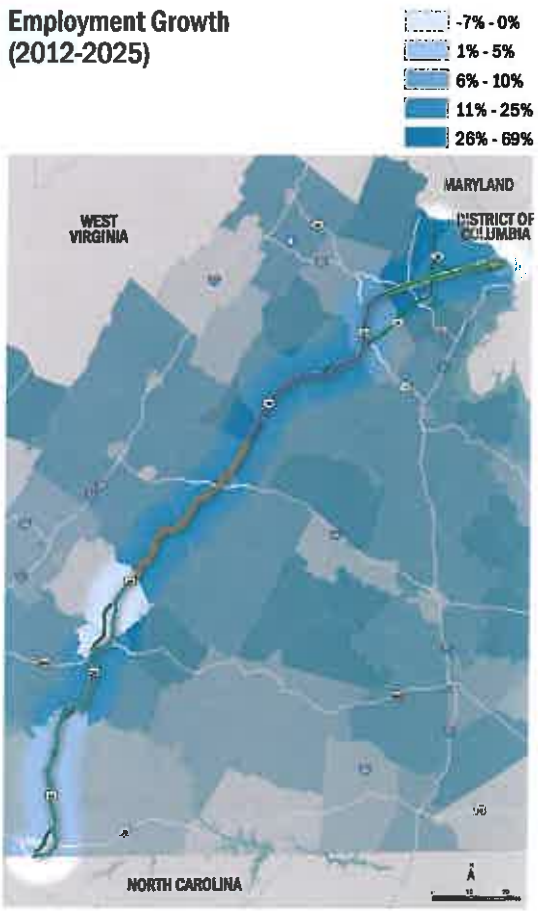
Top Industries (GDP)



2012 Employment Density Jobs / Square Mile



Employment Growth (2012-2025)

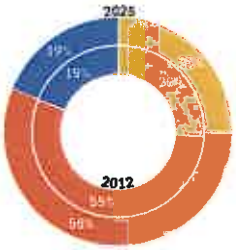


Corridor Travel Patterns

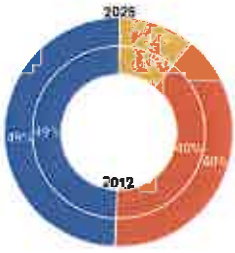
Northern Virginia MPO

Charlottesville-Albemarle MPO

Lynchburg Area MPO

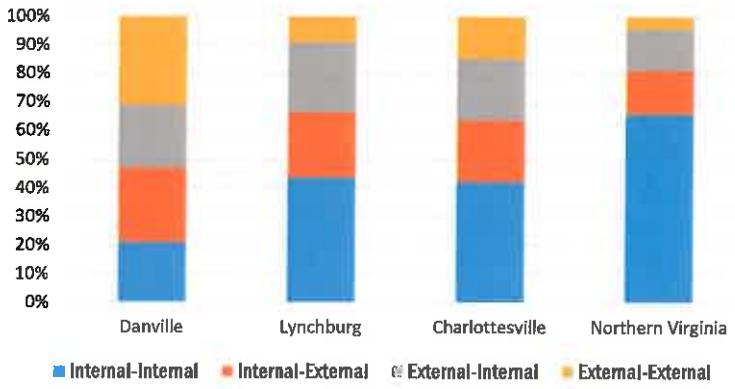


Danville MPO



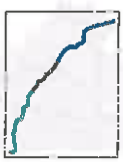
Corridor I connects the District of Columbia to North Carolina, and passes through four MPO areas along its route: Danville, Lynchburg, Charlottesville, and Northern Virginia. In the Danville MPO area, traffic on Corridor I is distributed fairly evenly between local (21 percent) and pass-through (31 percent) traffic. In the Lynchburg area, traffic is more oriented towards local trips, with 44 percent comprised of internal local trips and less than ten percent, pass-through trips. In the Charlottesville-Albemarle MPO area, local trips are also more prevalent - 42 percent of the traffic consists of local internal trips and 15 percent consists of pass-through trips. In the Northern Virginia region, Corridor I is dominated by local internal trips which account for 65 percent of the total passenger traffic. Less than five percent of the total traffic along Corridor I is pass-through traffic in Northern Virginia.

Distribution of Internal and External Travel



GDP by Sector, 2012 and 2025

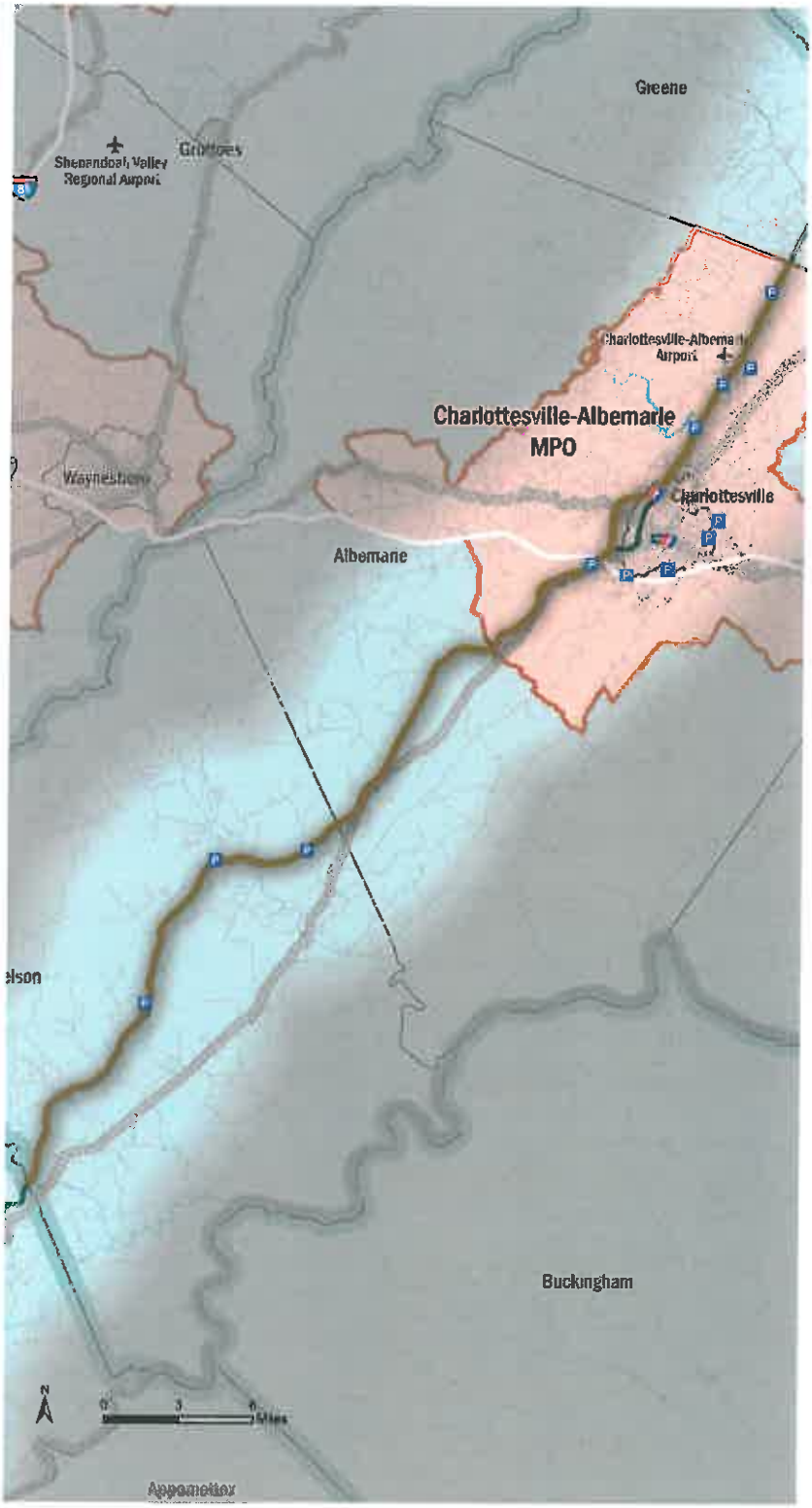
Knowledge
Freight Dependent
Local Serving



III. Segment I2

Corridor Segment I2 Components

- U.S. 29
- Norfolk Southern Crescent Corridor
- Amtrak
- Charlottesville Albemarle Airport



- Segment I2
- Corridor Component Road
- Railroad
- Amtrak Facility
- Greyhound Facility
- VRE Facility
- Metrorail Facility
- Port Facility
- Park & Ride Facility
- MPO Area
- Planning District Area

I2 SEGMENT PROFILE

Number of Lanes (both directions)

- 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 - 12
- Primary facility

Segment I2 runs from north Lynchburg to Madison County through the counties of Nelson, Albemarle, and Greene, and the City of Charlottesville. The segment serves the area covered by the Charlottesville-Albemarle Metropolitan Planning Organization (MPO). The primary facility that defines this segment is U.S. 29.

Highway Facilities: Throughout the majority of Segment I2, U.S. 29 is a four lane highway.

Intercity Transit Service: Charlottesville Area Transit (CAT) provides bus service to the greater Charlottesville area. Amtrak also has a station in Charlottesville. This station offers service to destinations north, to the District of Columbia, and east towards Norfolk and Virginia Beach. The Charlottesville station provides service to destinations north (Washington, Philadelphia, New York) via the Northeast Regional route as well as north and south destinations along the Crescent Route, which includes New York, Atlanta, and New Orleans. Greyhound also provides intercity bus service with a station in Charlottesville.

Aviation: The Charlottesville-Albemarle Airport is the only commercial airport in this segment.

Freight Rail: Norfolk Southern freight rail lines run along virtually the entire Seminole Corridor in Virginia, offering a freight option to areas south along U.S. 29, as well as to the north of Washington, D.C., and to the northeast.

Major planned and future projects include:

Albemarle County:

- New road grade separated intersection on U.S. 29 (Segment I2) between Route 851 (Dominion Drive) and Route 1417 (Woodbrook Drive)
- Road reconstruction with added capacity on U.S. 29 (Segment I2) between Polo Grounds Road and Town Center Drive

City of Charlottesville:

- Hydraulic road grade separated intersection on U.S. 29 (Segment I2) between Ivy Road and the northern city limit of Charlottesville

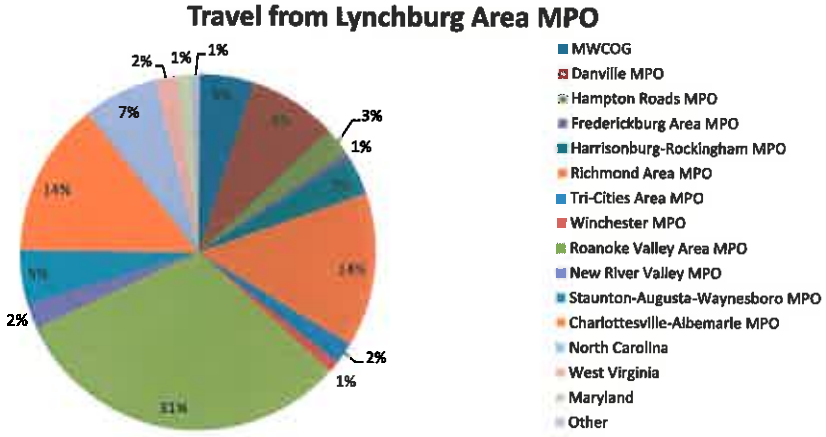
Future Projects

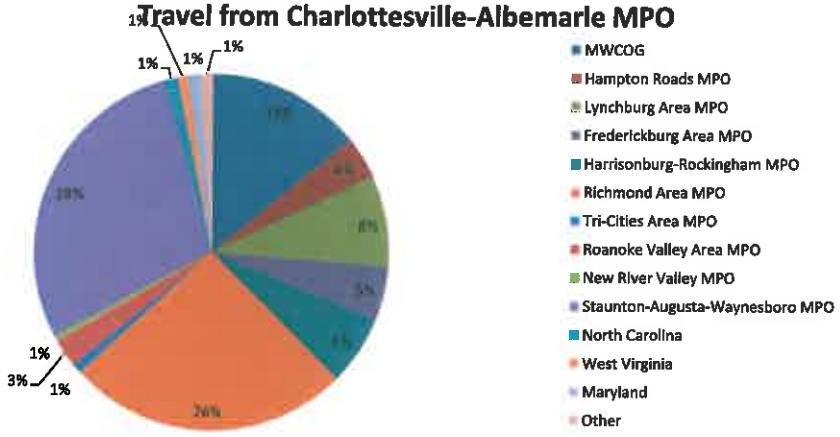
- Reconstruction with added capacity
- Safety improvements
- Primary facility

Travel Demand

Passenger Demand

Segment I2 connects from the Lynchburg MPO in the south through the Charlottesville-Albemarle MPO to the north. Of the intercity passenger travel originating in the Lynchburg region, only a limited portion is likely to use this segment including 14 percent destined for Charlottesville and the five percent destined for the Metropolitan Washington region. Travel from the Charlottesville region is also distributed fairly widely across the Commonwealth and the largest markets for intercity passenger travel include the Metropolitan Washington region (14 percent) and Lynchburg (eight percent).

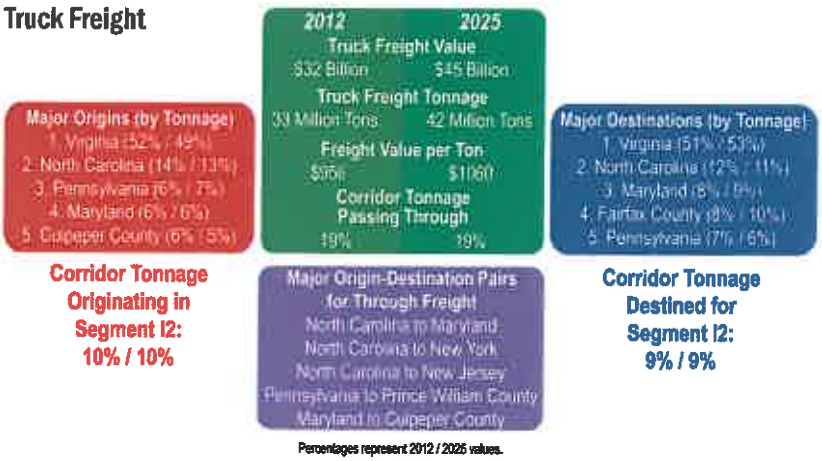




I2 SEGMENT PROFILE

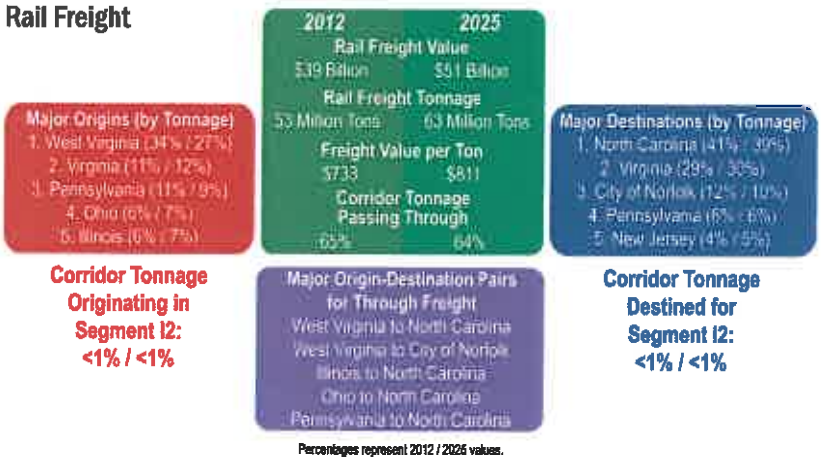
Truck Freight Demand

By truck, Segment I2 carried 13M tons of freight worth $19B in 2012, and is estimated to carry 17M tons of freight worth $27B in 2025. North Carolina is the largest generator and attractor of truck freight traveling on Corridor I, in terms of both tonnage and value. Between 13 and 14 percent of the total truck freight tonnage on the corridor originates in North Carolina and another 11 percent of truck freight is destined for the state. The major truck freight movements on Corridor I are between North Carolina and the Middle Atlantic region, accounting for ten percent of the total truck freight tonnage on the corridor. Ten percent of the corridor truck freight by tonnage originates in jurisdictions adjacent to Segment I2 and another nine percent is destined for the jurisdictions along the segment. Albemarle County, adjacent to Segment I2, has significant truck freight flows heading towards and coming from North Carolina, Maryland, and Pennsylvania. The City of Lynchburg and Pittsylvania County are the largest attractors of truck freight along Segment I2, accounting for a combined two percent of the total truck freight value on the corridor.



Rail Freight Demand

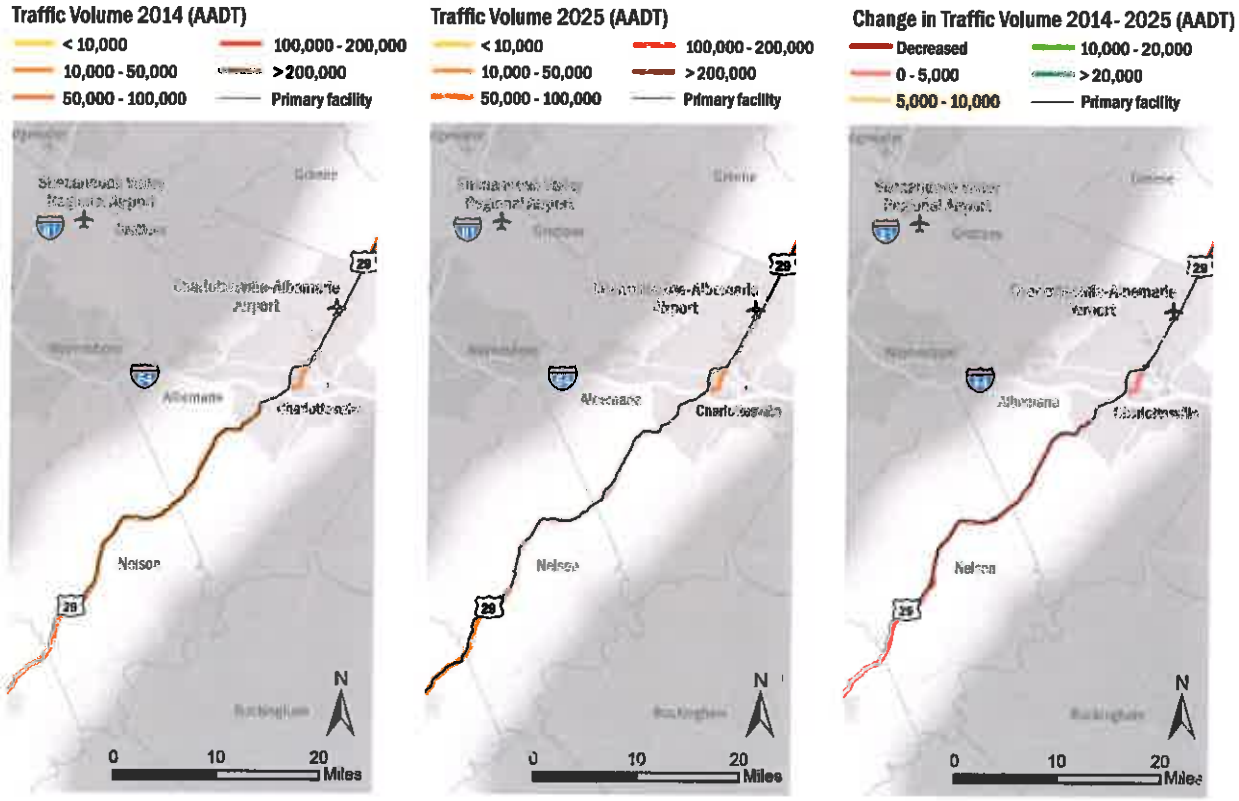
By rail, Segment I2 carried 7M tons of freight worth $11B in 2012, and is estimated to carry 9M tons of freight worth $14B in 2025. Rail freight movements mainly consist of through-patterns on Corridor I with 75 percent of all rail freight on the corridor passing through Virginia. West Virginia is the largest generator of rail freight tonnage on Corridor I, with major rail freight flows destined for North Carolina, accounting for 18 to 22 percent of the total tonnage, and the Port of Virginia, accounting for eight to nine percent of the total tonnage. North Carolina is the largest attractor of rail freight tonnage on the corridor, accounting for 40 percent of the total corridor rail freight tonnage, with major flows originating in the Midwest region and Pennsylvania. The most valuable rail freight movements on Corridor I are between Georgia and Pennsylvania, accounting for 10 to 11 percent of the total corridor rail freight value. Rail freight flows, in terms of both tonnage and value, are negligible for jurisdictions adjacent to Segment I2, accounting for less than one percent of the total corridor rail freight tonnage and value.



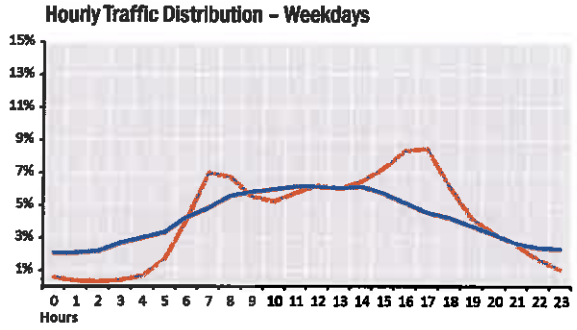
Traffic Conditions

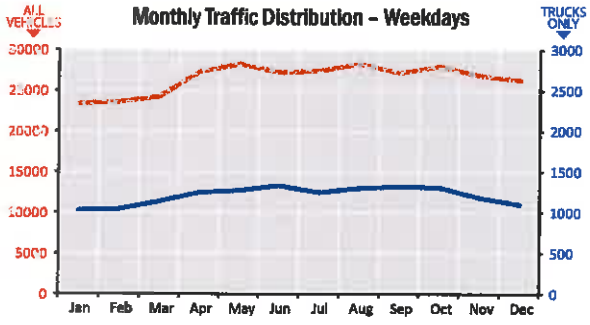
Traffic Volume and AADT

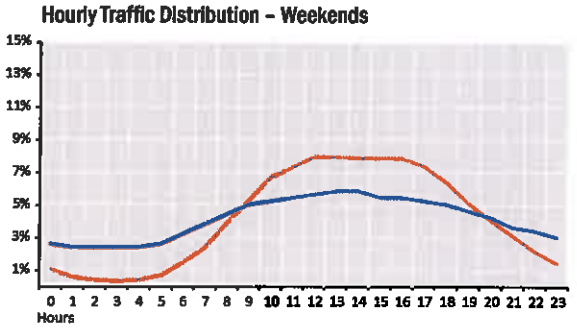
Traffic volume in Segment I2 varies by highway section. Along U.S. 29 in Nelson County and in Albemarle County south of Charlottesville, traffic volumes range from 12,000 to 17,000 vehicles per day on average. Along U.S. 29 to the west and north of Charlottesville, average daily traffic volumes range from 45,000 to 56,000 vehicles, and in northern Albemarle County along U.S. 29, traffic volumes are about 35,000 vehicles per day on average. By 2025, the highest increase in traffic volumes is projected to occur along U.S. 29 to the west and north of Charlottesville, ranging from 4,000 to 6,000 additional vehicles per day. Along U.S. 29 in Nelson County and southern Albemarle County, by 2025 traffic volumes are forecasted to range from 13,000 to 20,000 vehicles per day. Along U.S. 29 in Charlottesville, by 2025 average daily traffic volumes are projected to range from 49,000 to 69,000 vehicles.

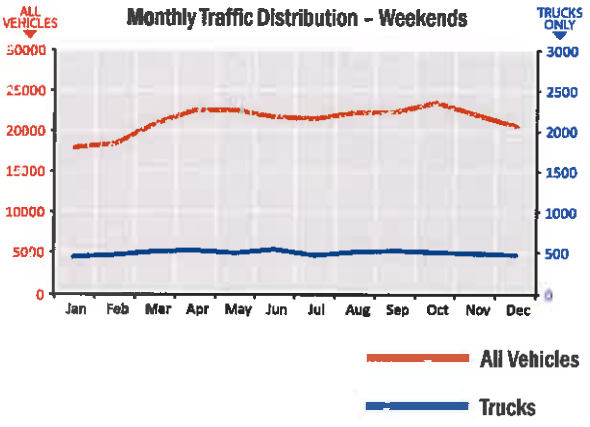


I2 SEGMENT PROFILE









Freight Volume

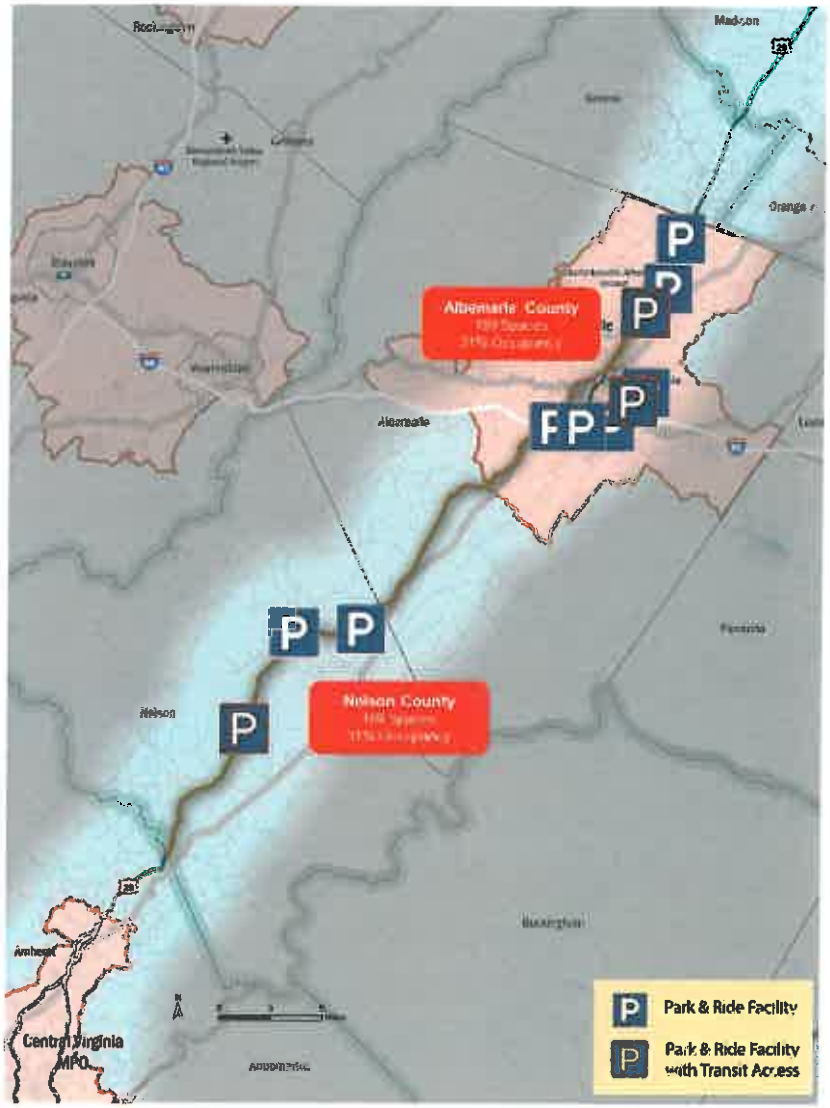
The percent of average daily traffic comprised of heavy trucks on Segment I2 is low relative to other segments in Corridor I. Along U.S. 29 in Nelson County and southern Albemarle County, heavy trucks comprise 5 percent of total traffic. Along U.S. 29 from Charlottesville to the northern border of Albemarle County, heavy trucks make up 2 percent or less of total traffic.

Redundancy and Mode Choice

Passenger

Passenger trips on Segment I2 of the Seminole Corridor have limited travel options, both in terms of travel path and mode choice. Aside from short various U.S. 29 Business routes that provide local access, no parallel highway facilities exist in the segment. Based on the 2014 federal standard mileage rate of 56 cents per mile, as well as travel time, trips from Charlottesville to destinations like Culpeper, Washington D.C., Lynchburg, and Danville are typically less expensive by alternative modes, such as rail or bus, than by automobile and comparable in terms of travel time. Air travel along the corridor, with service offered from Charlottesville-Albemarle Airport, is much faster than any other mode, but far more expensive. Greyhound offers service to the corridor from Charlottesville, as does Amtrak, which serves the segment with its Northeast Regional and Crescent Routes.

Within Segment I2, commuters can utilize several Park-and-Ride locations in Nelson and Albemarle Counties. Albemarle County has the most Park-and Ride-locations, the highest number of Park-and-Ride spaces, and the highest utilization rate of spaces available in the region. Neither county has a rate higher than the statewide average of 76% for Park-and-Ride utilization.



I2 SEGMENT NEEDS

Annual Freight by Tonnage, 2012

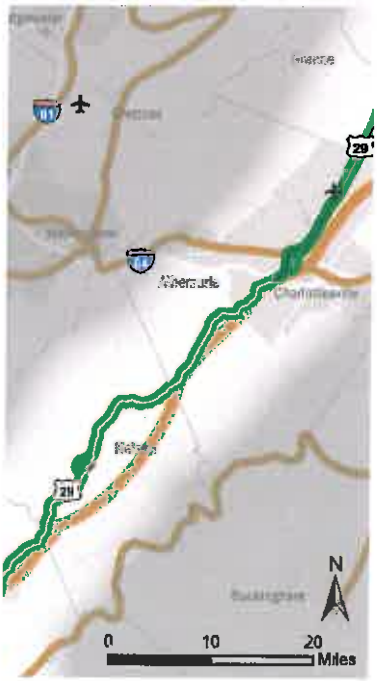
Freight

In the Lovingston area in Segment I2, freight is moved primarily by truck in terms of both tonnage and value. In total, 13.4 million tons (68 percent) of freight is moved through this section of Segment I2 by truck, compared to 6.4 million tons (32 percent) by rail. By value, $19.1 billion (63 percent) of freight value travels by truck, compared to $11.1 billion (37 percent) by rail. On average, a ton of freight traveling through this section of Segment I2 by truck is worth $1,428 while a ton of freight traveling by rail is worth $,1717. In 2025, both rail and truck freight tonnages and total values in this area of Segment I2 are expected to increase. The percentage of the freight traveling by truck in terms of tonnage is expected to remain the same and in relation to value, is expected to increase to 66 percent. Freight value per ton is anticipated to increase to $1,524 for trucks and decrease to $1,722 for rail.

North of Route 250, freight is moved primarily by truck by tonnage and by value. In total, 12.5 million tons (64 percent) of freight is moved through this section of Segment I2 by truck, compared to 6.9 million tons (36 percent) by rail. By value, $17.0 billion (60 percent) of freight value travels by truck, compared to $11.1 billion (40 percent) by rail. On average, a ton of freight traveling through this section of Segment I2 by truck is worth $1,359 while a ton of freight traveling by rail is worth $1,606. In 2025, both rail and truck freight tonnages and total values in this area of Segment I2 are expected to increase. The percentage of the freight traveling by truck is expected to increase by tonnage and value to 65 percent and 63 percent, respectively. Freight value per ton on trucks and rail is expected to increase to $1,492 and $1,608, respectively.

Annual Freight by Tonnage, 2025

Annual Freight by Value, 2012



Annual Freight by Value, 2025

Truck Freight (in tons)
- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Rail Freight (in tons)
- < 10M
- 10M - 25M
- 25M - 50M
- 50M - 100M
- > 100M
- Primary facility

Truck Freight
- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

Rail Freight
- < $10B
- $10B - $50B
- $50B - $100B
- $100B - $200B
- > $200B
- Primary facility

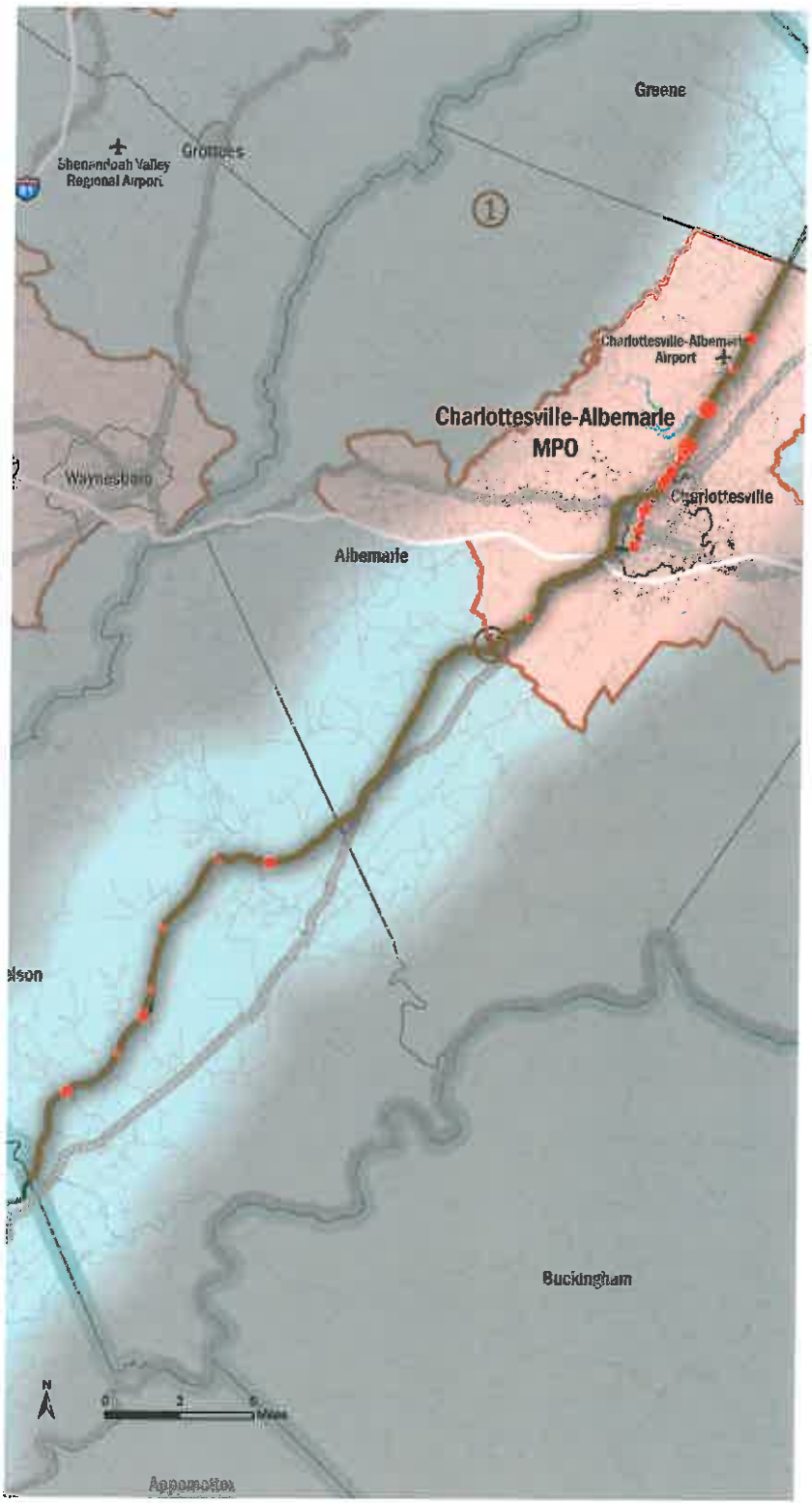
I2 SEGMENT NEEDS

Safety

Performance Metrics

Number of Severe Crashes	169
Severe Crashes/Million VMT	3.5
Number of Railroad Crashes	1

The areas along Segment I2 with the highest concentrations of severe crashes are in and north of Charlottesville. In Charlottesville along US 29-Business (Fontaine Avenue/ Emmet Street), adjacent to the University of Virginia campus, there were 43 crashes that occurred over a 2-mile stretch between Shamrock Road and Earhart Street. On US 29 (Seminole Trail) in Albemarle County, there were 19 collisions in a span of less than 0.5 mile, just north of the intersection with Hydraulic Road. In another stretch of US 29 (Seminole Trail), a total of 34 incidents took place over a distance of approximately 1 mile between Dominion Drive and Woodbrook Drive and, in another more northern span of US 29, north of the South Fork Rivanna River, 15 crashes occurred over 0.79 mile between Polo Grounds Road and Ashwood Boulevard.



Fatality and Injury Crashes

- < 5
- 5 - 10
- 11 - 15
- 16 - 20
- > 20

Railroad Incidents/Accidents per County (2011-2014)

(#)

Congestion

Performance Metrics

Person Hours of Delay	7K
Freight Ton Hours of Delay	4.5M

Passenger Delays

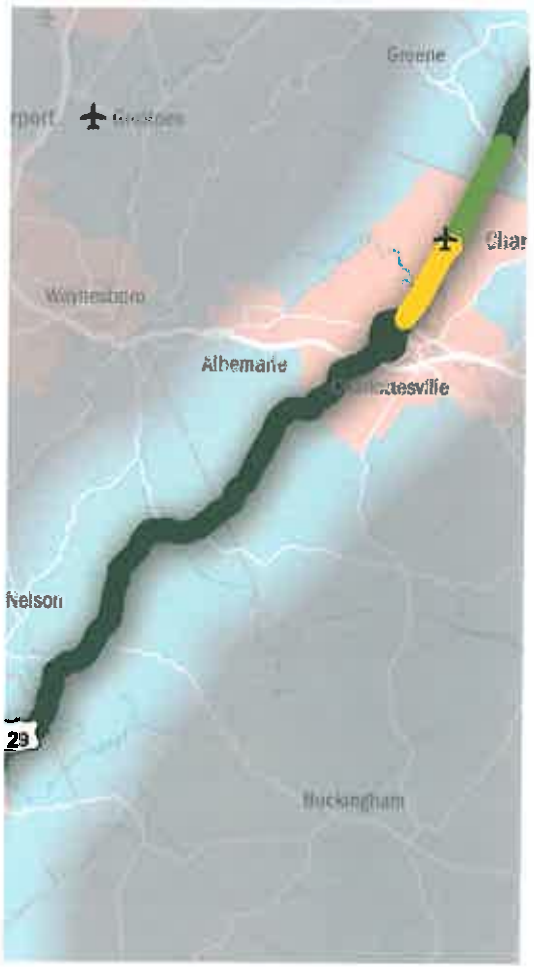
Total passenger delays along this segment are in the top 40th percentile among corridor Segments of Statewide Significance. Passenger delays are higher along Segment I2 than along Segments I1 and I3, but lower than along Segment I4. Passenger congestion is most severe around Charlottesville-Albemarle Airport, with delays reaching 1,000 person-hours per mile.

Person Hours of Delay Per Mile

- < 100
- 101 - 200
- 201 - 500
- 501 - 1,000
- > 1,000

Freight Delays

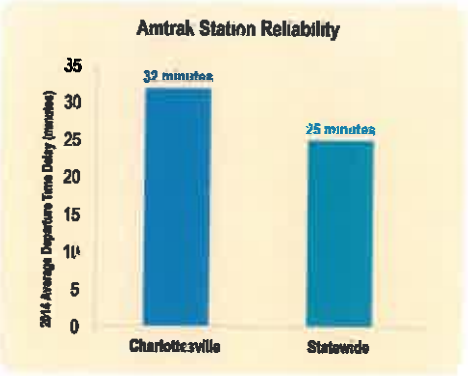
Freight delays are insignificant for most of Segment I2, except around the Charlottesville-Albemarle Airport, where daily delays reach 1 million ton-hours per mile. The airport serves DHL, operated by Ameriflight to Wilmington and Lynchburg. Overall freight delays per mile along this segment are in the bottom 35th percentile among all the corridor segments and only slightly higher than along Segment I1 among Corridor I segments. Approximately 40 percent of daily freight delays are experienced in the peak period, which is just about average for the peak-period share of congestion along corridor Segments of Statewide Significance.



Freight Ton Hours of Delay Per Mile

- < 100,000
- 100,001 - 500,000
- 500,001 - 1,000,000
- 1,000,001 - 5,000,000
- > 5,000,000

Reliability



Weekday Peak Reliability

Reliability of travel during the peak period on a typical weekday on Segment I2 ranges from 0.00 to 0.64 in terms of reliability index, with an average value of 0.13. The maximum reliability index along Segment I2 is around 50th percentile, while the average is in the top 30th percentile among segments of statewide significance. A higher reliability index during peak period compared to rest of the day suggests that peak period congestion results in unpredictable travel times. None of the locations along Segment I2 have reliability index values exceeding the statewide threshold.

Weekday Reliability

Reliability of travel during a typical weekday ranges from 0.00 to 0.50 in terms of reliability index, with an average value of 0.11. The maximum reliability index along Segment I2 is around 50th percentile, while the average is in the top 25th percentile among segments of statewide significance. A short stretch through Charlottesville (about half a mile) has reliability index values exceeding the statewide threshold.

Weekend Reliability

Reliability of travel during a typical weekend ranges from 0.02 to 0.57 in terms of reliability index, with an average value of 0.13. The maximum reliability index along Segment I2 is around 50th percentile, while the average is in the top 25th percentile among segments of statewide significance. A higher reliability index during weekends compared to weekdays suggests that weekend travel times are more unpredictable than weekday travel times. None of the locations along Segment I2 have reliability index values exceeding the statewide threshold.

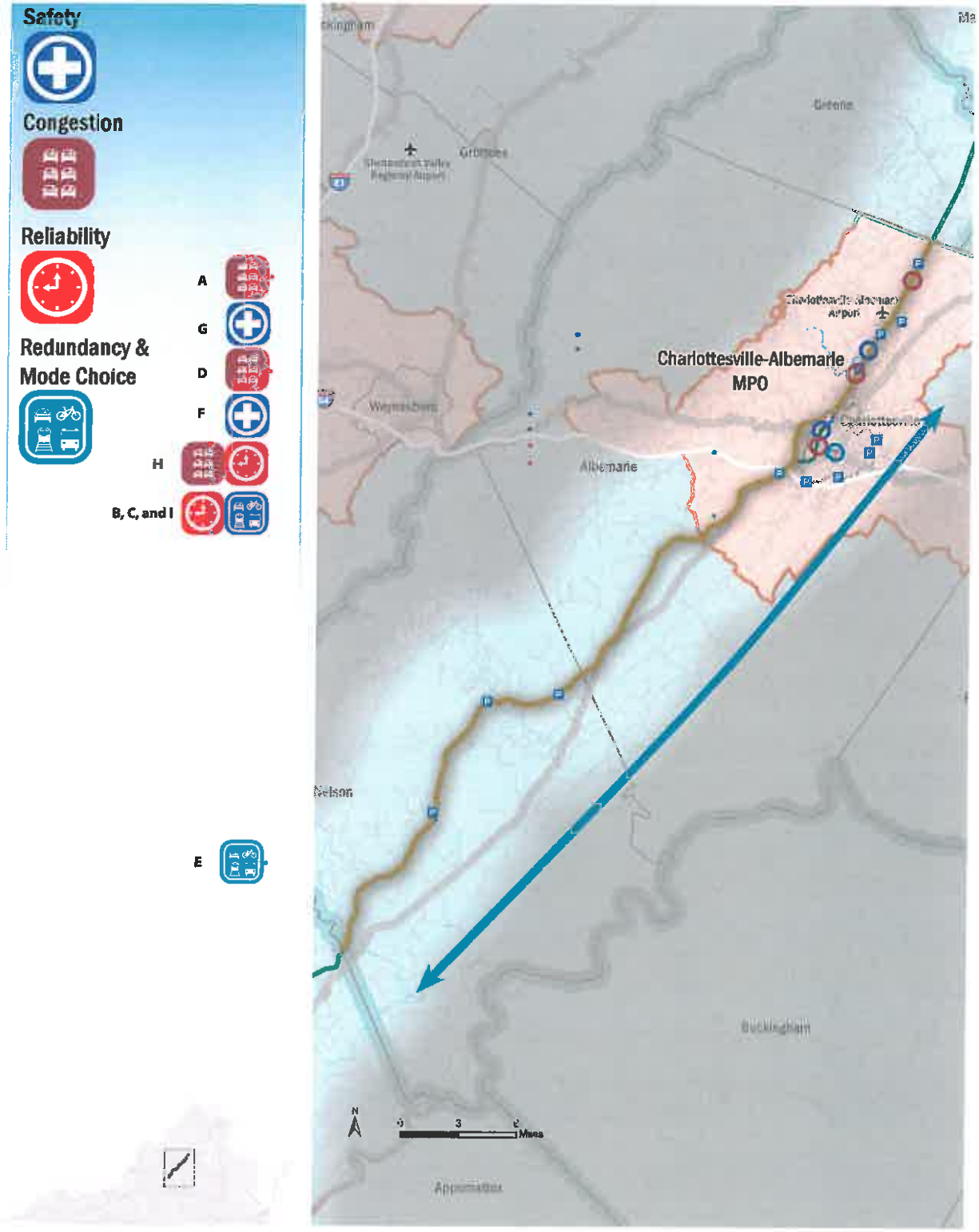
Reliability Index

- < 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- > 0.8
- Primary facility (in white)

Statewide reliability index thresholds have been set for weekday peak, weekday and weekend travel to assess the reliability of travel on each segment on all corridors of statewide significance. The following are the reliability index thresholds:

- Weekday Peak - 0.80
- Weekday - 0.40
- Weekend - 0.60

Summary of Needs



I2 SEGMENT NEEDS

Summary of Needs - I2 Segment

A.	US 29 from US 29-Business to Greene County Line in Albemarle County: Significant person-hours of delay; moderate freight ton-hours of delay
B.	Insufficient passenger amenities (including waiting area) at Charlottesville Amtrak station
C.	Poor connections between Amtrak and Greyhound Bus stations
D.	US 29 between downtown and River: Frequent driveways and access points result in slow moving traffic
E.	No parallel highway facilities to US 29 between Charlottesville and Lynchburg
F.	US 29-Business between Shamrock Rd and Earheart St in Charlottesville: 43 severe crashes
G.	US 29 between Hydraulic Rd and Ashwood Rd north of Charlottesville: 66 severe crashes
H.	US 29-Business between Jefferson Park Ave and US 29 in Charlottesville: significant person-hours of delay; Weekday Reliability Index >0.4
I.	Unreliable Amtrak service from Charlottesville station. Average departure delay is 32 minutes (highest in the State) totaling over 35,500 person-hours of delay from this segment.