COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Shannon Valentine
Chairperson

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

December 10, 2019
10:00 a.m.

1. Fast Act Rescission Update
   Wendy Thomas, Virginia Department of Transportation
   Russ Dudley, Virginia Department of Transportation

2. Virginia Research Council Overview
   Cathy McGhee, Virginia Department of Transportation

3. SMART SCALE Project Cancellation Briefing
   Arcola Boulevard (Route 50 to Loudoun County Parkway) UPC 111481
   Kimberly Pryor, Virginia Department of Transportation

4. I-66 Transit/TDM Plan Update
   Jennifer Debruhl, Virginia Department of Rail & Public Transportation

5. I-66 Inside the Beltway MOA
   Nick Donohue, Secretary of Transportation

6. Naming Rights Guidelines
   JoAnne Maxwell, Virginia Department of Transportation

7. Woodrow Wilson Bridge
   Bundled Interstate Maintenance Services
   Second Supplement to Ownership Agreement
   Branco Vlalich, Virginia Department of Transportation

8. Martinsville Southern Connector
   Route 220 Environmental Impact Statement
   Angel Deem, Virginia Department of Transportation

9. Smart Scale Policy Update
   Chad Tucker, Office Intermodal Planning and Investment

10. VTrans Mid-Term Needs
    Jitender Ramchandani, Office Intermodal Planning and Investment

11. I-95 Corridor Improvement Plan
    Ben Mannell, Virginia Department of Transportation

12. Director's Items
    Jennifer Mitchell, Virginia Department of Rail & Public Transportation

13. Commissioner's Items
    Stephen Brich, Virginia Department of Transportation

14. Secretary's Items
    Shannon Valentine, Secretary of Transportation

# # #


VDOT
Virginia Department of Transportation

FAST ACT RESCISSION UPDATE

Wendy E. Thomas
Director, Federal Programs Management Division

December 10, 2019

FAST Act rescission update

- **Best possible outcome**
- **Continuing Resolution (CR) was approved for federal FY 2020 appropriations that also included repeal of $7.569 billion FAST Act rescission**
- **However, steps taken to reduce rescission had it taken place impact our federal program planning and execution**

What did we do?

- **Ensured investment in our program rather than losing federal funds**
  - **Identified additional obligation opportunities**
  - **Advanced phases where possible**
  - **Took apportionment management actions to reduce balances**
- **Exceeded our objective in terms of limiting impact of rescission**
  - **Balance subject to rescission calculation reduced to $53 million (projection was $60 million)**
  - **FHWA calculated our share of rescission to be $75 million**

What happens now?

- While we did not lose any apportionments, necessary actions taken to mitigate rescission limit flexibility moving forward
- Apportionment management, obligation planning, and strategy execution will be impacted for several years
  - Continued focus on programming of funds to maximize ability to obligate and meet federal obligation authority
  - Anticipate greater reliance will be needed on fund sources that are less flexible and traditionally slower to obligate
- Review of programming and policy adjustments to support efficiency of funding programs

TRANSPORTATION ALTERNATIVES RESCISSION AND NEXT STEPS

Russ Dudley, Director, Local Assistance Division

December 10, 2019

Transportation Alternatives Rescission Recap

TAP/EN Obligations

- 2019 - $34,154,431
- 2018 - $12,782,712
- 2017 - $27,851,254

TAP/EN Phase Authorizations & Obligation Transactions

- 2019 – 456
- 2018 – 284
- 2017 – 375

Unobligated Balances Decreased from $58,034,796 in 2018 to $33,508,885 in 2019

Transportation Alternatives Rescission Recap

- **Allocations from District Balance Entry Accounts**
  - To Maximize use of Allocations (particularly population-based allocations), necessary to move approximately $507,000 in balance entry allocations across Districts.
  - Identified as Priority to Replace Allocations if Rescission Repealed
  - Recommendation to take off top FY21/22 Allocations

Transportation Alternatives – Next Steps

December 2019	Currently Validating/Scoring Applications
January 14, 2020	Present TAP Update and Scores to CTB District Members/MPO for use in Selections
January 30, 2020	CTB District Member Selections to LAD / LAD Provides to MPOs
February 20, 2020	MPO Project Selections to LAD
March 17/18, 2020	CTB At-Large Member Selection Meeting
April – May 2020	SYIP Public Meetings
June 17, 2020	CTB Approval of Project Allocations

2020 – Address Potential Policy Modifications to Improve Program Efficiency and align with Other Department Funding Programs

VTRC
Virginia Transportation Research Council

We Bring Innovation to Transportation

VDOT's Investment in Research:

Virginia Transportation Research Council Overview

December 10, 2019

History

- Research Section – 1944
- Research Council – 1948
  - Cooperative effort between VDOT and UVA
  - Department provided funds, staff
  - UVA provided space

- Ultimate Purpose: Bring Innovation to Transportation by Serving as the Research Division of VDOT

Core Functions

- Conduct applied, practical research that supports VDOT mission
- Serve as expert consultant to VDOT and Transportation Secretary
- Provide post-research implementation support
- Educate future professionals





Research Staffing

- 45 full-time positions
- 25 hourly/student employees
- University collaborations
- Graduate research assistants

Advisory Committees

- Traffic and Safety
- Environmental
- Pavements
- Bridge
- System Operations
- Transportation Planning
- Concrete





Implementation

- Begin with the end in mind
- Look for champions
- Commit to an implementation plan
- Provide funding
- Document

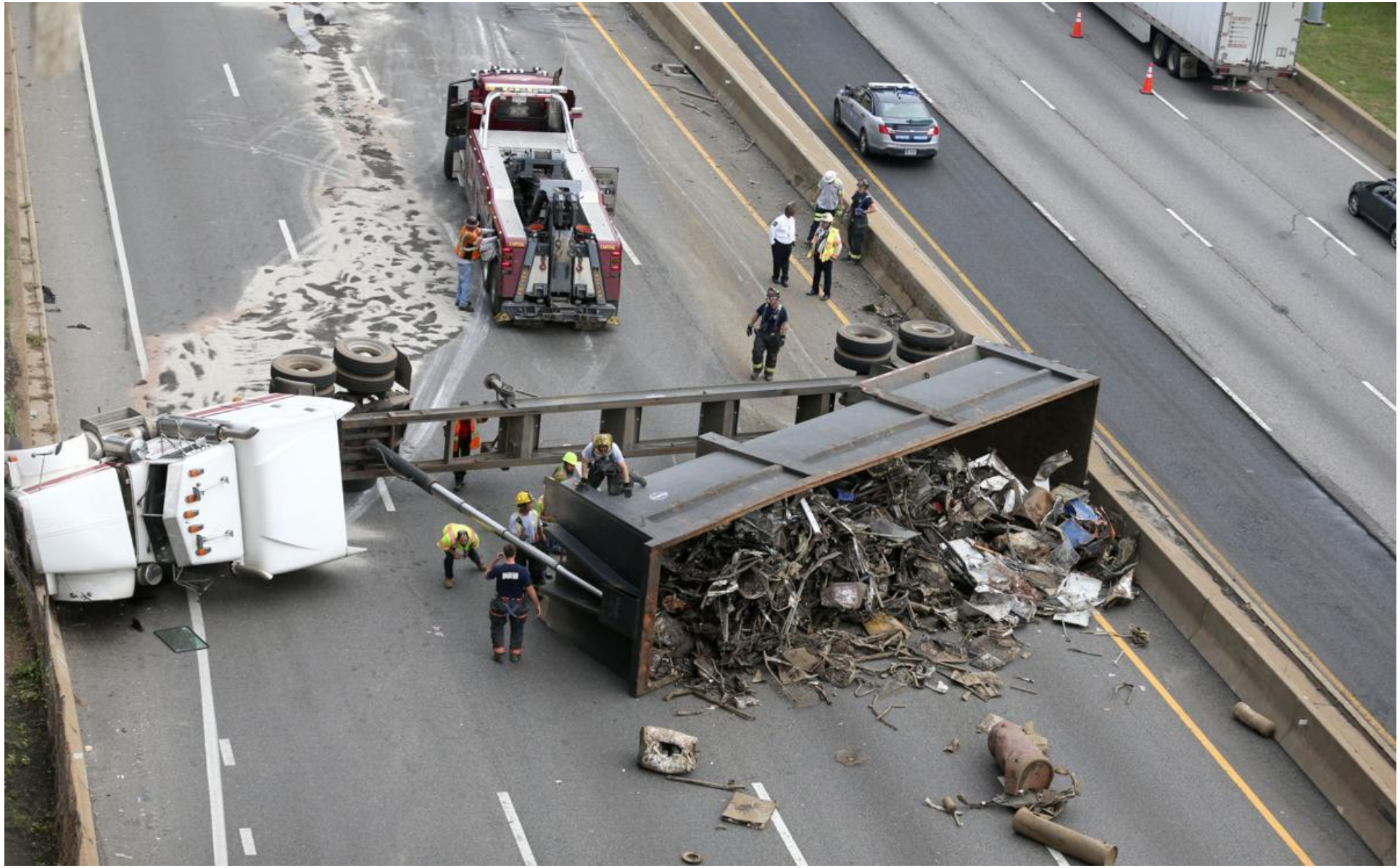
Moving Research Into Practice

Program Characteristics and Metrics

- Closely tied to VDOT business plan
- 125-140 active projects in pipeline
- Complete 80-95 projects each year
- 24 grants for FY 2019
- 64 active university contracts
- Flexibility to provide on-call consulting to VDOT and Office of the Secretary

Safety, Operations, and Traffic Engineering

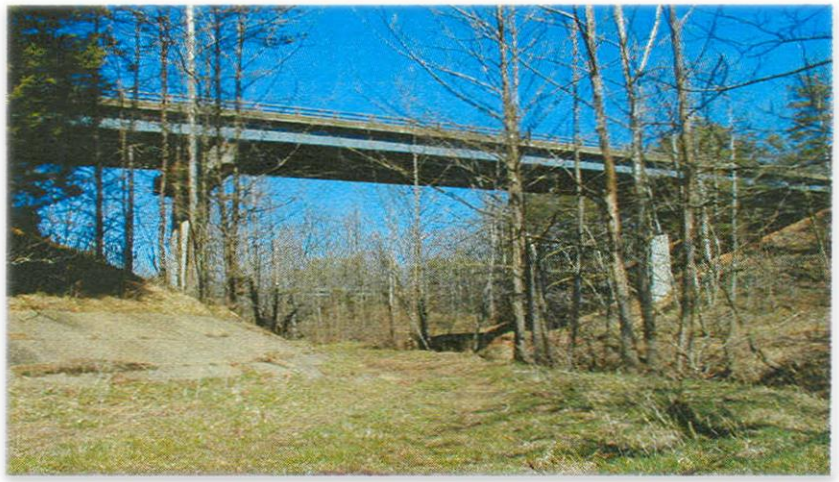
- Connected and automated vehicles
- Intelligent transportation systems
- Highway safety
- Performance measurement and data analytics
- Arterial and freeway operations
- Traffic control devices and human factors
- Traffic signal operations
- Emergency response and incident management



Environment, Planning, and Economics

Environment

- Stormwater management
- Climate change-related design considerations
- Animal-vehicle collisions mitigation
- Identification and management of VDOT's cultural resources



Planning

- Trip generation methods
- Transportation and land use
- Socioeconomic forecasts
- Bicycle and pedestrian
- Transit

Economics

- ROI and benefit-cost analyses for VTRC engineering research projects
- Transportation finance studies

Pavements

- Performance-based materials
- End-result construction specs
  - Incentivizing quality
- Rapid (& relevant) evaluation
- Deep stiffness & strength
- Towards a more sustainable system

Structures

- Evaluation of bridge elements and structures
- Use of innovative materials for the construction and preservation of structures
- Design and performance characteristics
- Addressing geotechnical issues as applied to the construction and preservation


04/23/2010

Commonwealth Transportation Board Environmental Task Force

Start Date: August 2019

Mission: Develop recommendations for the CTB on goals and policies to mitigate i) the impacts of the transportation system on the environment, and ii) the impacts of climate change on transportation infrastructure.

Focus Areas: Green House Gas emissions reduction
Sea Level Rise / Sustainability

Members:

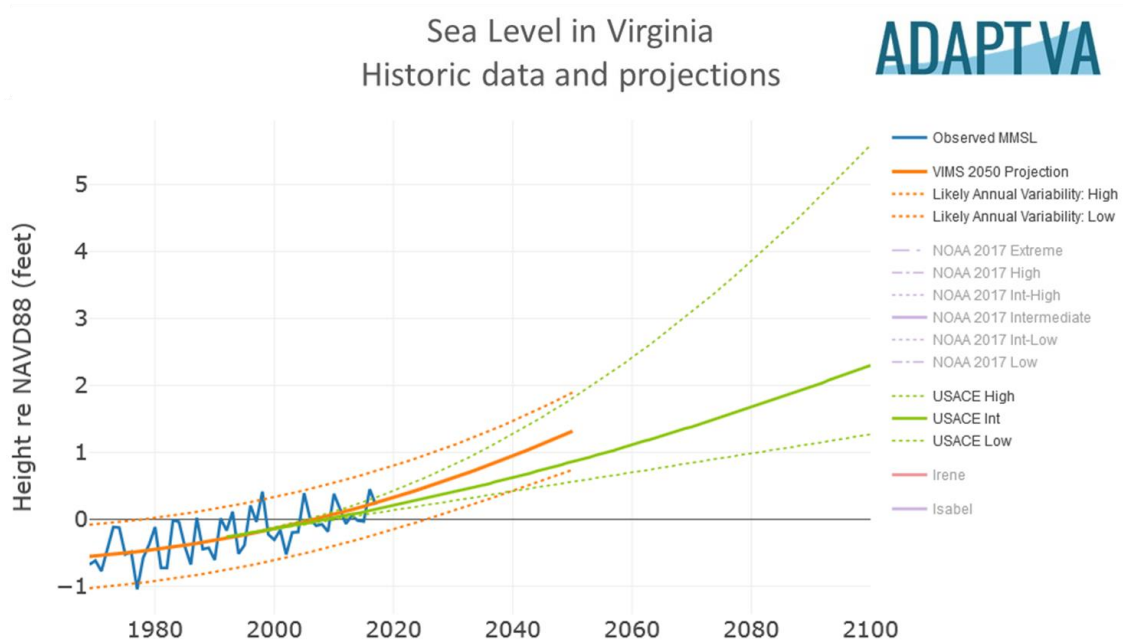
Steve Johnsen, CTB
Grant Sparks, DRPT
Angel Deem, VDOT
Amy Wight, Secretary's Office
Scott Kasprowicz, CTB
Rick Walton, VDOT
Branco Vlacich, VDOT
Mike Fitch, VDOT

Impacts of recurrent flooding and sea level rise on road accessibility

Center for Coastal Resources Management
Virginia Institute of Marine Science

William & Mary Law School
Virginia Coastal Policy Center

+ Sea Level Rise



Traditional analysis

Average Annual Duration

Flood Duration (hours/year)

0

0-5

5-100

100-200

> 200

Not accessible

Flooded

Center for Coastal Resources Management

Virginia Institute of Marine Science

William & Mary Law School

Virginia Coastal Policy Center

Average Annual Flooding: 2050

Questions?

SMART SCALE PROJECT CANCELLATION BRIEFING

Arcola Boulevard (Route 50 to Loudoun County Parkway) UPC 111481

Commonwealth Transportation Board

Kimberly Pryor

December 10, 2019

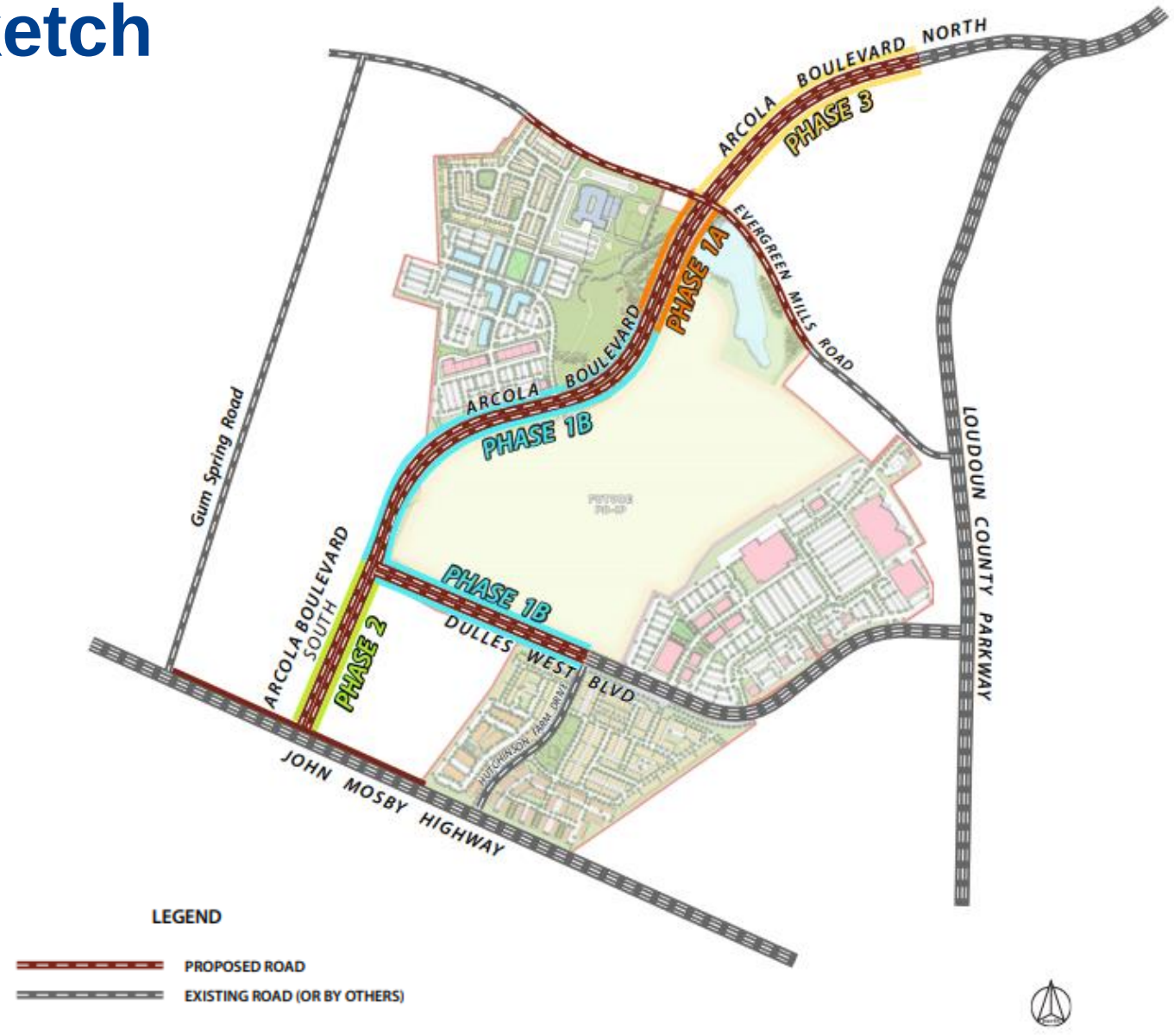
SMART SCALE Project Cancellation - Policies

- **SYIP Development Policy, December 2016**
  - A project that has been selected for funding through either the High Priority Projects Program or Construction District Grant Program may be cancelled only by action of the Board
  - In the event that a project is not advanced to the next phase of construction when requested by the Board, the locality or metropolitan planning organization may be required, pursuant to § 33.2-214 of the Code of Virginia, to reimburse the Department for all state and federal funds expended on the project
- **SMARTSCALE Policy, February 2018**
  - A project that has been selected for funding must be initiated and at least a portion of the programmed funds expended within one year of the budgeted year of allocation or funding may be subject to reprogramming to other projects selected through the prioritization process

Project Information

- **Arcola Boulevard (Route 50 to Loudoun County Parkway)**
  - New four-lane divided highway to include 4 new signalized intersections and 10' multi-use paths
  - Submitted by Loudoun County in Round 2 of SMART SCALE
  - Total Project Cost: $54.9M
  - Total SMART SCALE Request: $28.9M
  - Full request funded with DGP funds
  - Project is locally administered
  - Scheduled to begin preliminary engineering in November 2017, but project has not advanced to scoping

Project Sketch



Cancellation Request

- **On October 17, 2019 Loudoun County Board of Supervisors voted unanimously to:**
  - Direct staff to process a budget adjustment rescinding the appropriation of SMART SCALE funds to the Arcola Boulevard project
  - Direct staff to inform VDOT that the County will not accept future SMART SCALE allocations for the Arcola Boulevard project
- **County intends to complete the project by working with developers to advance delivery of their preferred alignment using proffers**

Recommendation

- **Cancel the Arcola Boulevard (Route 50 to Loudoun County Parkway) UPC 111481**
- **Transfer all $28.9M in Construction District Grant funds to the Northern Virginia Construction District Grant balance entry (UPC -15988) for allocation to projects selected in Round 4**


VDOT
Virginia Department of Transportation

I-66 Transit/TDM Plan Update

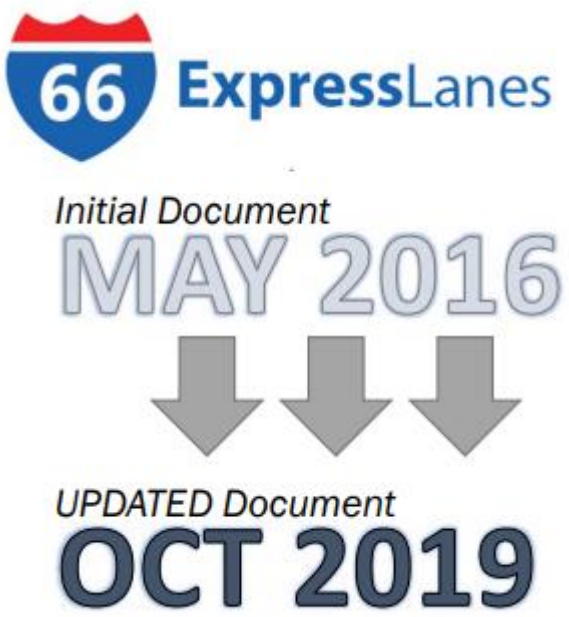
CTB Workshop – December 10, 2019

Jennifer DeBruhl, Chief of Public Transportation
Department of Rail and Public Transportation

Virginia Department of Rail and Public Transportation

I-66 Transit/TDM Plan Update

- Goal of the I-66 project is to transform Northern Virginia's Interstate 66 into a multimodal corridor that moves more people, provides reliable trips and offers new travel options
- Original strategies were developed 2014-2016 with the intent to update prior to initial implementation, based on updated assumptions



DRPT

What Are The Goals?

- Increased mobility and maximize person throughput in the corridor through the identification of new transportation alternatives, including transit and TDM service improvements

- Coordination of projects that are funded by the two funding mechanisms, ***I-66 Commuter Choice*** and ***Transform 66 Outside the Beltway*** to achieve efficiency and reliability of travel along the corridor

- Evaluate the future mix of transit strategies to increase travel options and intermodal connectivity, as well as, reduce congestion in the corridor

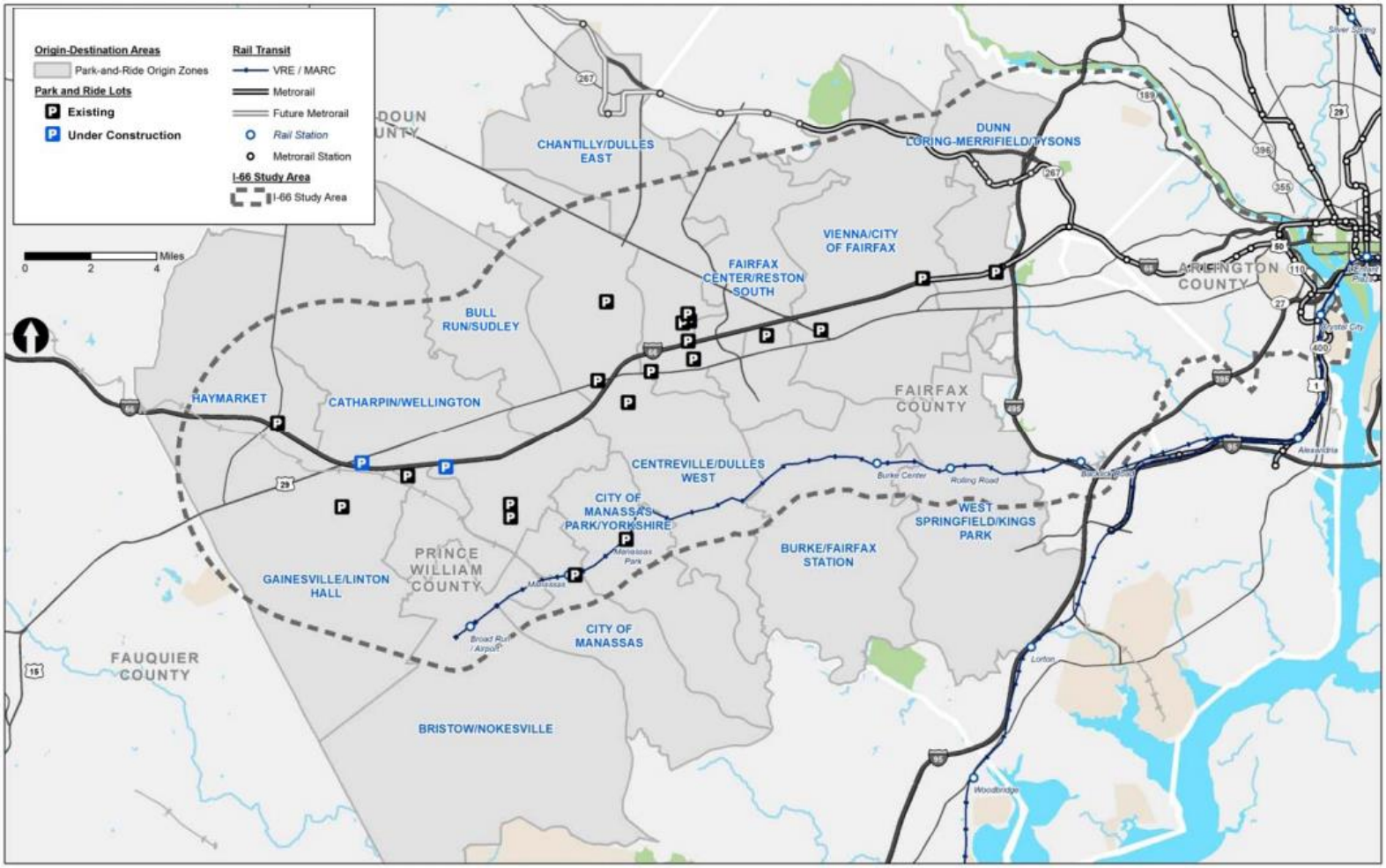
What is different?

- Extended the study corridor to include I-66 Inside the Beltway
  - Impact of I-66 Commuter Choice on multimodal options in the corridor
  - Partnership with NVTC to coordinate services that could be funded with one or both funding programs

- Updated base assumptions with more current information –
  - Newer regional model – updated land use and travel patterns
  - Ability to support expanded commuter rail service
  - Information from the implementation of projects through I-66 Commuter Choice

DRPT

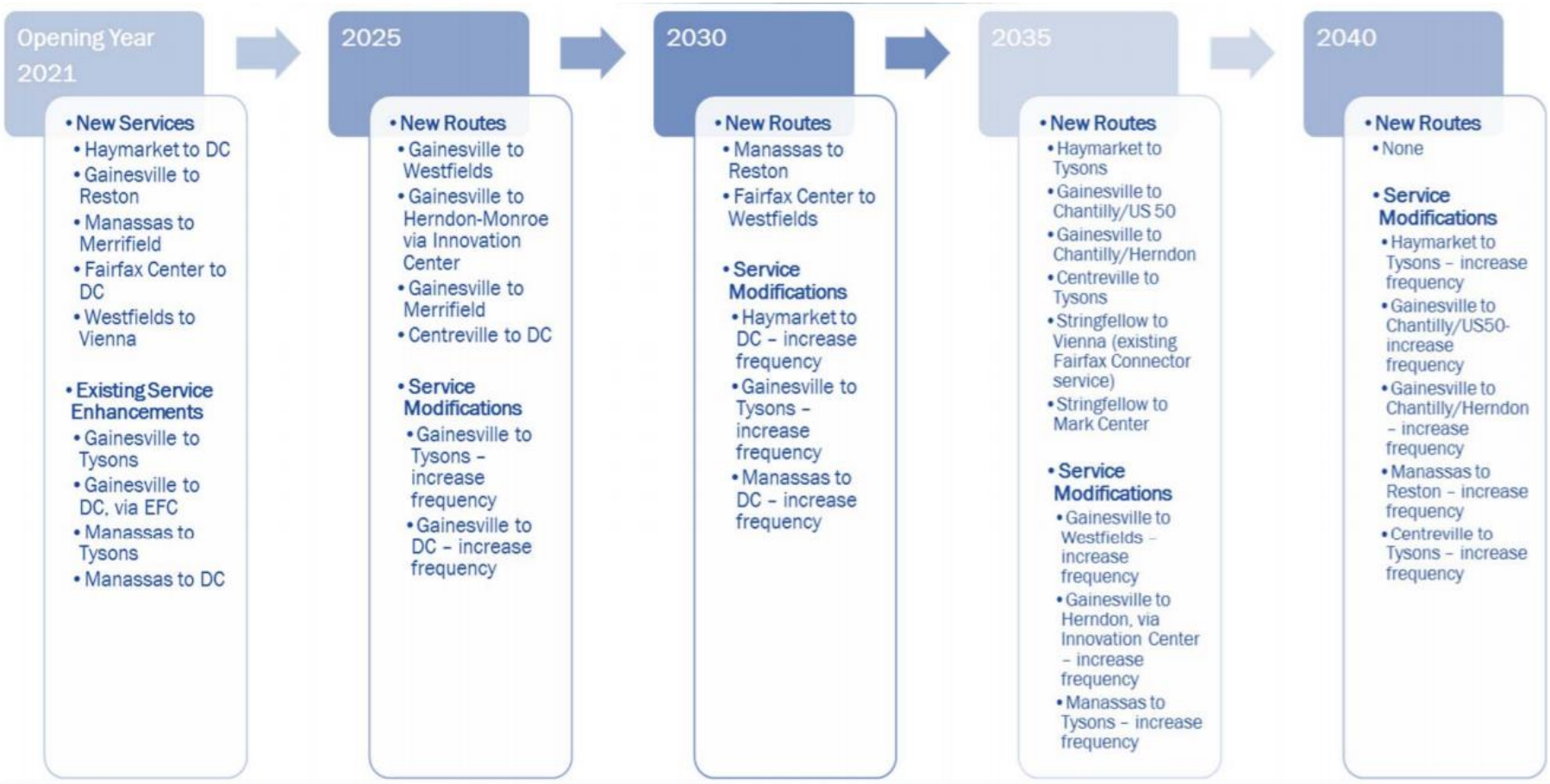
Study Area



The I-66 Corridor in this plan extends from Haymarket on the west to Washington, D.C. in the east.

Service Recommendations from the Previous Plan

Transit Recommendations From Previous Plan



Recommendations moved about 900,000 people by bus/TDM annually in 2030

DRPT

Draft Service Recommendations

Draft Transit Recommendations

Route (Origin/Destination)	2022 Service			2030 Service			2045 Service		
	Headway	Peak Trips	Annual Ridership	Headway	Peak Trips	Annual Ridership	Headway	Peak Trips	Annual Ridership
Stringfellow-Pentagon	10	54	268,500	5	106	632,000	5	116	810,000
Gainesville-Pentagon	30	12	90,000	15	16	141,000	15	16	171,000
Manassas-Tysons	20	16	112,400	13	46	394,000	13	36	367,000
Stringfellow-Tysons	10	48	242,600	6	88	530,000	5	106	741,000
Stringfellow-L'Enfant Plaza	16	34	169,000	8	60	353,000	10	52	364,000
Haymarket-Ballston/Rosslyn	40	8	60,900	40	8	75,000	40	10	99,000
Manassas-L'Enfant Plaza (Downtown DC in 2030)	30	17	125,900	15	42	373,000	15	34	350,000
Gainesville-L'Enfant Plaza (Haymarket-Downtown DC in 2030)	35	14	104,600	15	38	330,000	20	26	259,000
Fairfax Center-Downtown DC	20	25	122,500	8	62	372,000	10	56	383,000
Manassas-Reston	20	20	142,300	16	34	290,000	16	30	304,000
Fairfax Center-East Falls Church	20	16	78,200	16	18	113,000	20	16	109,000
Gainesville-Tysons (Haymarket in 2045)	40	8	51,200	20	18	163,000	20	24	237,000
TOTAL BUS		272	**1,568,100**		536	**3,766,000**		522	**4,194,000**
VRE Manassas Line (Broad Run - Union Station)			1,963,500			4,090,200			5,084,700
TOTAL BUS & RAIL			**3,531,600**			**7,856,200**			**9,278,700**

Annual Ridership
3.7 million bus riders
4 million rail riders
In 2030

DRPT

Draft Transit Recommendations – Currently funded by I-66 Commuter Choice

		2022 Service		2030 Service		2045 Service	
Commuter Bus Route (Origin-Destination)	**Service Provider**	**Headway (Peak Trips)**	**Annual Ridership**	**Headway (Peak Trips)**	**Annual Ridership**	**Headway (Peak Trips)**	**Annual Ridership**
Stringfellow-Vienna Metro-Pentagon	Fairfax Connector	10 min 54 trips	268,500	5 min 106 trips	632,000	5 min 116 trips	810,000
Gainesville-Pentagon	OmniRide	30 min 12 trips	90,000	15 min 16 trips	141,000	15 min 16 trips	171,000
Stringfellow-L'Enfant Plaza (DC)	Fairfax Connector	16 min 34 trips	169,000	8 min 60 trips	353,000	10 min 52 trips	364,000
Haymarket-Ballston/Rosslyn	OmniRide	40 min 8 trips	60,900	40 min 8 trips	75,000	40 min 10 trips	99,000
Gainesville-L'Enfant Plaza (DC) *(Extend to Haymarket in 2030)*	OmniRide	35 min 14 trips	104,600	15 min 38 trips	330,000	20 min 26 trips	259,000
Fairfax Center-Downtown DC	Fairfax Connector	20 min 25 trips	122,500	8 min 62 trips	372,000	10 min 56 trips	383,000
Gainesville-Tysons *(Extend to Haymarket in 2045)*	OmniRide	40 min 8 trips	51,200	20 min 18 trips	163,000	20 min 24 trips	237,000
TOTAL BUS			**866,700**		**2,066,000**		**2,323,000**

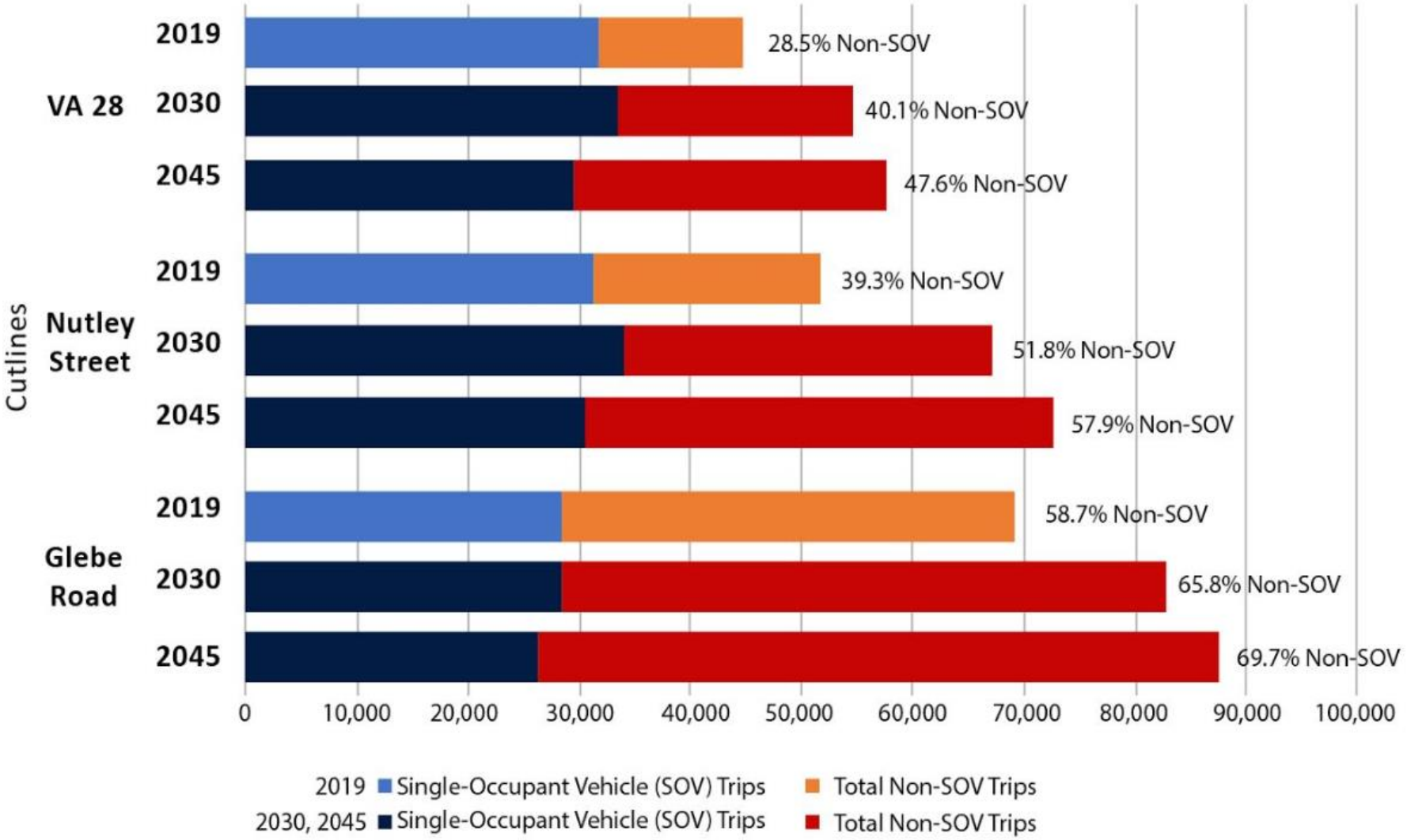
Draft Transit Recommendations for I-66 Outside the Beltway funding

		2022 Service		2030 Service		2045 Service	
Commuter Bus Route (Origin-Destination)	**Service Provider**	**Headway (Peak Trips)**	**Annual Ridership**	**Headway (Peak Trips)**	**Annual Ridership**	**Headway (Peak Trips)**	**Annual Ridership**
Manassas-Tysons	OmniRide	20 min 16 trips	112,400	13 min 46 trips	394,000	13 min 36 trips	367,000
Stringfellow-Tysons	Fairfax Connector	10 min 48 trips	242,600	6 min 88 trips	530,000	5 min 106 trips	741,000
Manassas-L'Enfant Plaza (DC) *(Extend to Downtown DC in 2030)*	OmniRide	30 min 17 trips	125,900	15 min 42 trips	373,000	15 min 34 trips	350,000
Manassas-Reston	OmniRide	20 min 20 trips	142,300	16 min 34 trips	290,000	16 min 30 trips	304,000
Fairfax Center-East Falls Church Metro	Fairfax Connector	20 min 16 trips	78,200	16 min 18 trips	113,000	20 min 16 trips	109,000
TOTAL BUS			**701,400**		**1,700,000**		**1,871,000**
VRE Manassas Line *(Broad Run-Union Station)*	Virginia Railway Express		1,963,500		4,090,200		5,084,700
TOTAL BUS & RAIL			**2,664,900**		**5,790,200**		**6,955,700**

DRPT

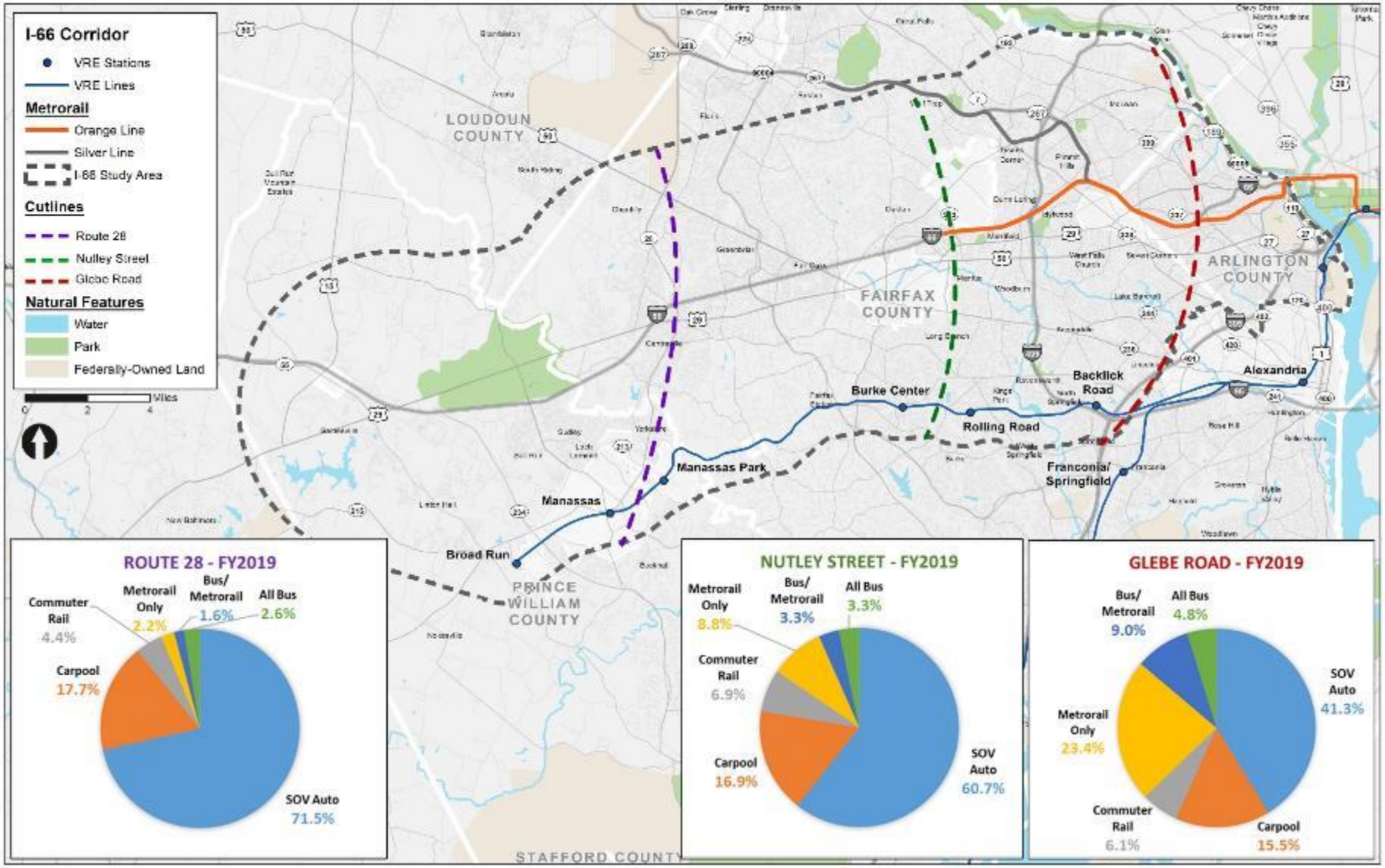
Impact of Draft Recommendations

Persons Moved on Eastbound I-66
Current (2019) and Future Conditions with Investment (2030, 2045)

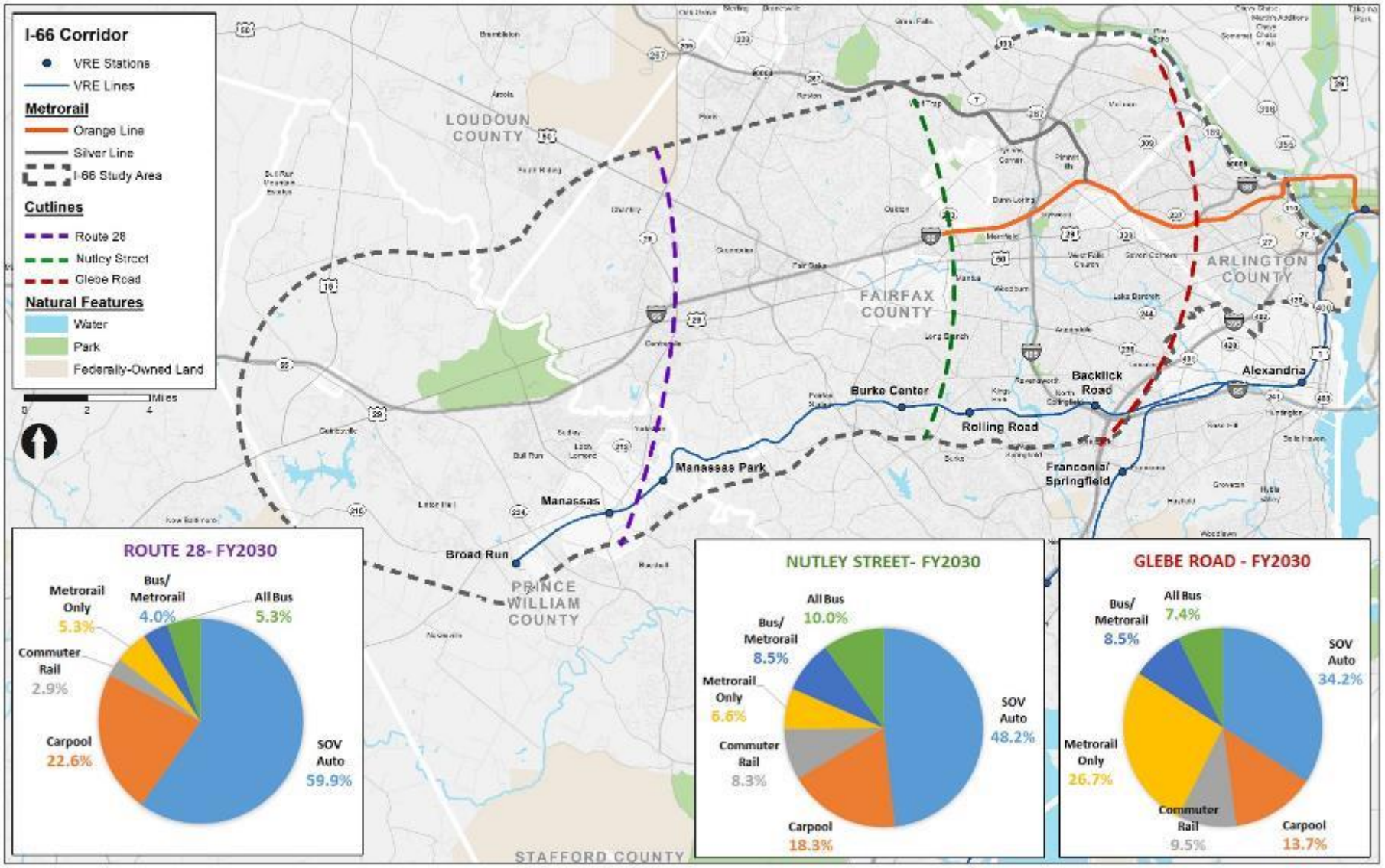


DRPT

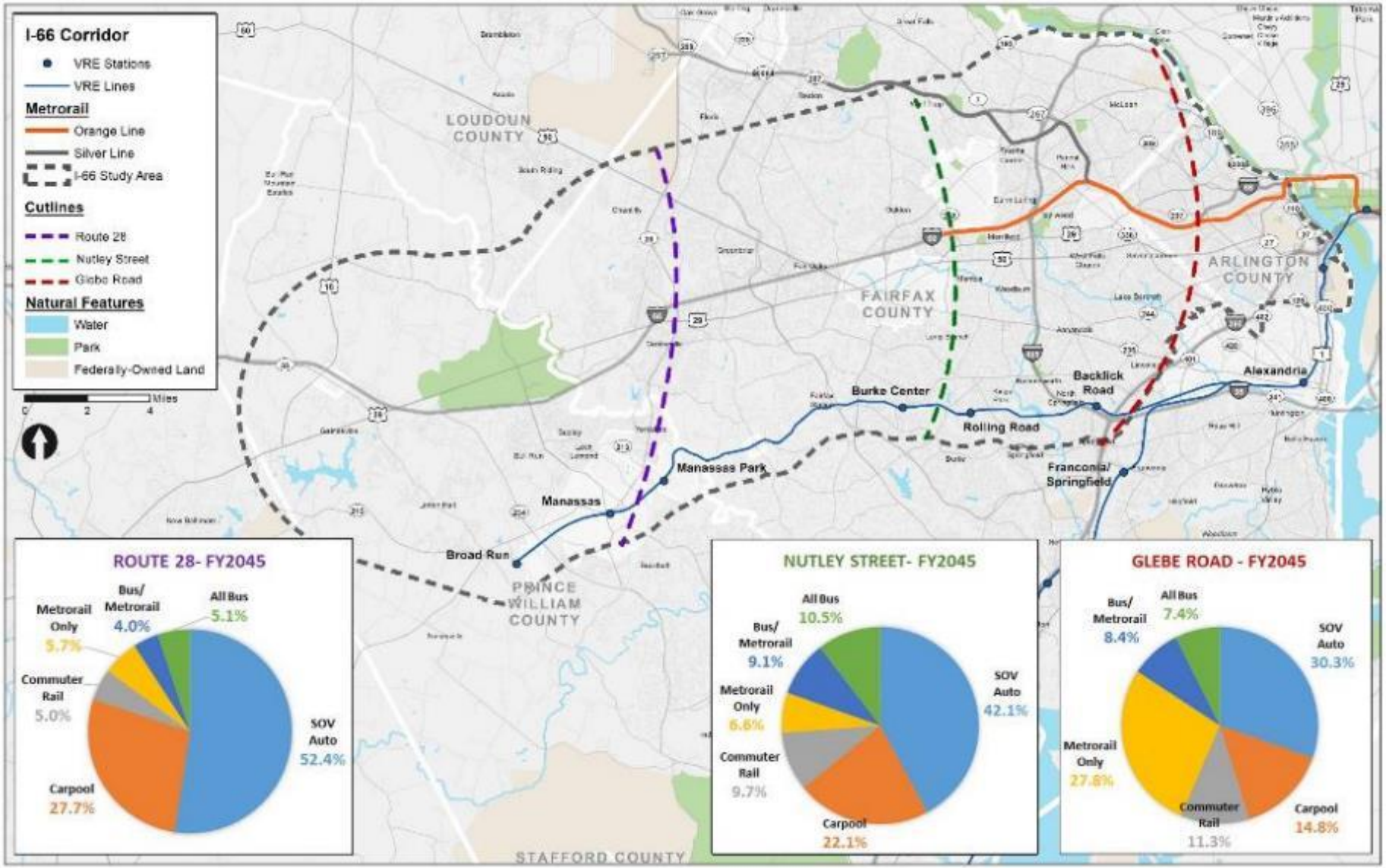
Mode Split - 2019



Mode Split - 2030



Mode Split - 2045



Impact of Revised Recommendations on Person Throughput

Annual Peak Period Ridership: Draft Transit Plan			
	2022 Service	**2030 Service**	**2045 Service**
Total Bus Service	1,568,100	3,766,000	4,194,000
Total Rail (VRE Manassas Line)	1,963,500	4,090,200	5,084,700
Total Bus & Rail	3,531,600	7,856,200	9,278,700

Annual Peak Period Ridership: Previous Plan*		
	2025 Service	**2040 Service**
Bus Service Recommendations	813,120	986,040

*Daily peak period ridership was used in previous plan and has been converted to annual peak period ridership

Next Steps

- Completion of plan/coordination with stakeholders
- Service demands change over time – continual need for evaluation and adjustment of services
- Availability of technology to assist in first/last mile solutions will evolve over time – RM3P and other projects will inform future services

I-495/American Legion Bridge Transit/TDM Study

I-495/American Legion Bridge Transit/TDM Study

The American Legion Bridge provides the only direct connection between the region's most populous counties.

The goal of the I-495/American Legion Bridge Transit/TDM Study is to:

Identify a range of current and future multimodal solutions that can be implemented to reduce highway and transit congestion and improve overall mobility within the corridor.

DRPT

Study Process

- Evaluate forecasted changes in land use, population, households, and employment
- Review existing and projected travel patterns
- Identify opportunities to move more people through transit and transportation demand management
- Develop optimized slate of multimodal recommendations

DRPT

Next Steps

- Identify and coordinate with stakeholders
- Finalize project scope and secure consultant resources
- Kick-off meeting – early 2020
- Align transit/TDM recommendations with project development milestones

I-66 Transit/TDM Plan Update

CTB Workshop – December 10, 2019

Jennifer DeBruhl, Chief of Public Transportation
Department of Rail and Public Transportation

Virginia Department of Rail and Public Transportation

COMMONWEALTH *of* VIRGINIA

Office of the

SECRETARY *of* TRANSPORTATION

I-66 Memorandum of Agreement with the Northern Virginia Transportation Commission

Nick Donohue

December 9, 201

I-66 Memorandum of Agreement

- CTB voted in December 2015 to enter into MOA with NVTC regarding the use of I-66 toll revenues
- Allows NVTC to identify, evaluate and select projects for funding with I-66 toll revenues, subject to CTB approval
- To date $45M has been invested in projects benefitting the 66 corridor
  - 9 new express bus routes
  - Added service on 7 existing routes
  - Park-n-ride lot and other TDM

Proposed amendments to the Agreement

- **Would allow the Commonwealth to sell bonds backed by toll revenues to finance 'rail components'**
  - **Long Bridge improvements**
  - **Rosslyn Metro Station improvements**
- **Would guarantee NVTC $10M/year with escalation from 66 inside the Beltway and $5M/year with escalation from 66 outside the Beltway**
- **Revise other terms related to goals of the program and restrictions on operating funds to mirror language in the 395 Agreement with NVTC and PRTC**

Use of Revenues under Existing Agreement

- Tolling operations and maintenance
- Repayment of the Toll Facilities Revolving Fund
- NVTC debt service for projects benefitting 66 Corridor
- Projects benefitting the 66 Corridor

Proposed Use of Toll Revenues

- **Tolling operations and maintenance**
- ***Debt service for rail components***
- ***NVTC payment ($10M+$5M/year with escalation)***
- ***Pay-go for rail components through 2034***
- **Repayment of the Toll Facilities Revolving Fund**
- **NVTC debt service for projects benefitting 66 Corridor**
- **Additional projects benefitting the 66 Corridor *w/ any remaining toll revenues***

Proposed Improvement Goals

- Move more people
- Enhance transportation connectivity
- Improve transit service
- Reduce roadway congestion
- Increase travel options

Restrictions on Operating Assistance

Existing

- **Up to 50% of toll revenues available to NVTC may be used for operating assistance**
- **Sliding scale for percentage of operating cost that may be covered**

Proposed

- **Maintains general structure**
- **Allows operating cost of 'regional' transit service to be funded at percentage and length of time determined by NVTC**

Other Minor Changes

- Adds DRPT as a party to the Agreement
- Minor modifications to eligible projects (same as 395)
- Minor modification to process for approval of projects (same as 395)
- Adds an exhibit showing guaranteed minimum payment to NVTC
- Technical corrections

Moving Forward

- **NVTC and DPRT are preparing language for review by CTB and Commission members**

- **After consideration by NVTC, agreement will be brought to CTB for its consideration**

NAMING RIGHTS GUIDELINES

Briefing to the Commonwealth Transportation Board

Jo Anne Maxwell, Director, Governance and Legislative Affairs

December 10, 2019

Background

- Section 33.2-213, provides the CTB with authority to name highways and other transportation facilities:
  - When requested by local governments;
  - When requested by state agencies that employed state officials who have been killed in the line of duty; and
  - When requested by/for private entities, in exchange for an annual fee, which is to be established by the CTB.
- The underlying legislation requires the CTB and VDOT to develop/adopt guidelines on the naming of highways and other transportation facilities by/for private entities and the applicable fees for such naming rights.

Recommendation

- **After deliberation of the issues and based on the information received, it is recommended that the CTB and VDOT develop and adopt the draft Naming Rights Guidelines.**

- **VDOT has drafted proposed guidelines that address commemorative namings, namings by/for private entities for a fee, and “other namings”.**

Draft Guidelines

Key aspects of the draft Guidelines:

- For commemorative namings and “other” namings, the process used for those namings (consistent with § 33.2-213) is set out in the Guidelines:
  - The locality in which the highway or other transportation facility is located must request and pay the costs of the naming.
  - In the case of namings for state officials killed in the line of duty, the state agency that employed the state official must request and the costs of the naming are paid from Commonwealth Transportation Fund.
  - Costs are the costs of producing, placing and maintaining the signs.
  - These namings would be taken/considered on a case by case basis.

- For namings by/for private entities for a fee, the process to be used and the proposed fees are set out in the Guidelines.

Next Steps

- If the CTB agrees with the recommendation, copies of the draft Naming Rights Guidelines will be made available to members and the public** and the CTB will be presented an opportunity to discuss and vote on the Guidelines in the near future.

- **Per new statutory requirements for guidance documents, the Naming Rights Guidelines (given that they meet the definition of a guidance document in § 2.2-4101) would need to be posted in the Register of Regulations 30 days for public comment before they could become effective.

- It is also noted that legislation requires the Commissioner to, prior to adoption of the Guidelines, “report to the Chairmen of the House and Senate Transportation Committees and the Chairmen of the House Appropriations Committee and Senate Finance Committee.”


VDOT
Virginia Department of Transportation

WOODROW WILSON MEMORIAL BRIDGE (WWB)

Bundled Interstate Maintenance Services (BIMS) Second Supplement to Ownership Agreement

Commonwealth Transportation Board Briefing

Branco Vlacich
Division Administrator
Maintenance Division

December, 10th 2019


WOODROW
WILSON
MEMORIAL
BRIDGE

Ownership Agreement

- **Initial Ownership Agreement Signed June 15th, 2001**

- **Maryland and Virginia jointly own and share responsibility for the Bridge. Maryland owns and is also responsible for the Non-Bridge portion of the Project located in Maryland. Virginia owns and is also responsible for the Non-Bridge portion of the Project in Virginia**

First Supplement

- First Supplement to Ownership Agreement was signed September 17th, 2009

- First Supplement addressed Operation, Inspection, Maintenance and Rehabilitation of Woodrow Wilson Memorial Bridge using a Turn-key Asset Management Services Contract

- First Supplement will expire on April 14th, 2020

- **VDOT will be requesting next month CTB's approval for the Commissioner to enter into a Second Supplement to the Agreement with the State of Maryland covering Ownership, Operation, Inspection and Maintenance of the Woodrow Wilson Memorial Bridge (WWB)**

- **The Second Supplement addresses operation, maintenance, inspection and repair services for the WWB**

- **Previous contract performance method used was the Turn-key Asset Management Services Contract**

- **New contract performance method to be used is the Bundled Interstate Maintenance Services Contract**

Bundled Interstate Maintenance Services Performance Method

- **Bundled Interstate Maintenance Services performance requirements are more stringent**
- **Bundled Interstate Maintenance Services Contract outlines performance and administrative requirements for the contractor as defined by the Ownership Agreement and all of its Supplements**
- **Bundled Interstate Maintenance Services Contracts have been awarded previously by Commonwealth Transportation Board**

VA Code § 33.2-221(B)

Pursuant VA Code § 33.2-221 (B):

The Board shall have the power and duty to enter into all contracts with other states necessary for the proper coordination of the location, construction, maintenance, improvement, and operation of transportation systems, including the systems of state highways with the highways of such other states, and where necessary, seek the approval of such contracts by the Congress of the United States.

Second Supplement

- VDOT is currently developing the Second Supplement with Maryland for the proposed Woodrow Wilson Bridge Bundled Interstate Maintenance Services Contract to define Operation, Inspection, and Maintenance

- Second Supplement is needed due to a change in performance method and expiration of the First Supplement

- Second Supplement defines how contractor payment is administered between the two jurisdictions for the Woodrow Wilson Memorial Bridge Bundled Interstate Maintenance Services Contract.

Second Supplement Cont.

- The Second Supplement identifies the use and implementation of the WWB BIMS contract as the resource to meet both joint and individual responsibilities of Maryland and Virginia under the provisions of the Ownership Agreement

- Second Supplement will remain in effect for the duration of the Woodrow Wilson Memorial Bridge Bundled Interstate Maintenance Services Contract, including any contract extension

- VDOT will be requesting next month approval and authorization from the CTB for the Commissioner to enter into a Second Supplement to the Agreement with Maryland

MARTINSVILLE SOUTHERN CONNECTOR
ROUTE 220 ENVIRONMENTAL IMPACT STATEMENT

Angel Deem, Environmental Division Director

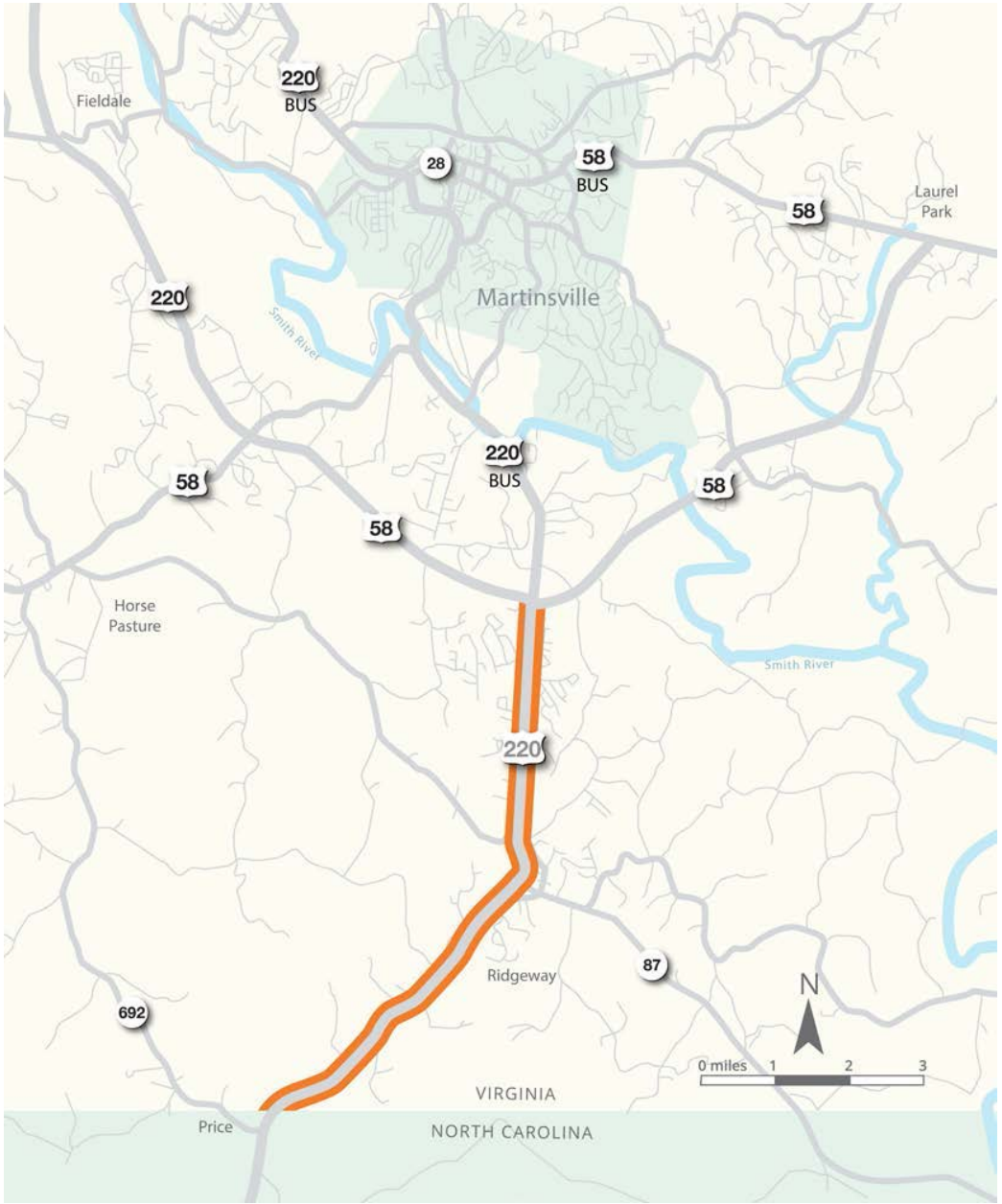
December 10, 2019

UPDATES SINCE MAY BRIEFING

- Elimination of Alternatives D and E as potential preferred alternatives
- Completion of all draft NEPA documentation and corresponding agency reviews
- Public hearing held on August 15, 2019 to solicit public input on VDOT's recommended preferred alternative
- The U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (USEPA) have concurred to recommending Alternative C as the preferred alternative
- Henry County Board of Supervisors has taken action

STUDY OVERVIEW

- Study initiated in early 2018 to analyze Improvements to U.S. Route 220 between the North Carolina State line and U.S. 58 south of Martinsville
- FHWA has identified the study as one of three that will comply with the One Federal Decision (OFD) Executive Order
- OFD applies time limits on study activities and results in permits being issued during the study phase



PUBLIC AND AGENCY INVOLVEMENT TO DATE

- **Held two Citizen Information Meetings, one Public Hearing, and three online surveys resulting in over 1,300 survey responses received to date**
- **Maintained monthly meetings with federal, state, and local agencies that have resulted in concurrence on study methods, the Purpose and Need, alternatives retained for detailed study, and VDOT's recommended preferred alternative**
- **Provide a monthly email newsletter to keep interested parties informed on the study schedule (389 subscribers)**
- **Owners of 1,331 parcels notified in writing in advance of ongoing field work**

PURPOSE AND NEED SURVEY

- Conducted September – October 2018
- 775 responses
- Asked participants about how and why they use the U.S. Route 220 corridor and solicited feedback on how to improve travel

Which would best improve travel through the 220 corridor?	Percent
Add additional capacity	31
Separate local and through traffic	51
Improve intersections	38
Reduce access points	23
Other	25

PURPOSE AND NEED

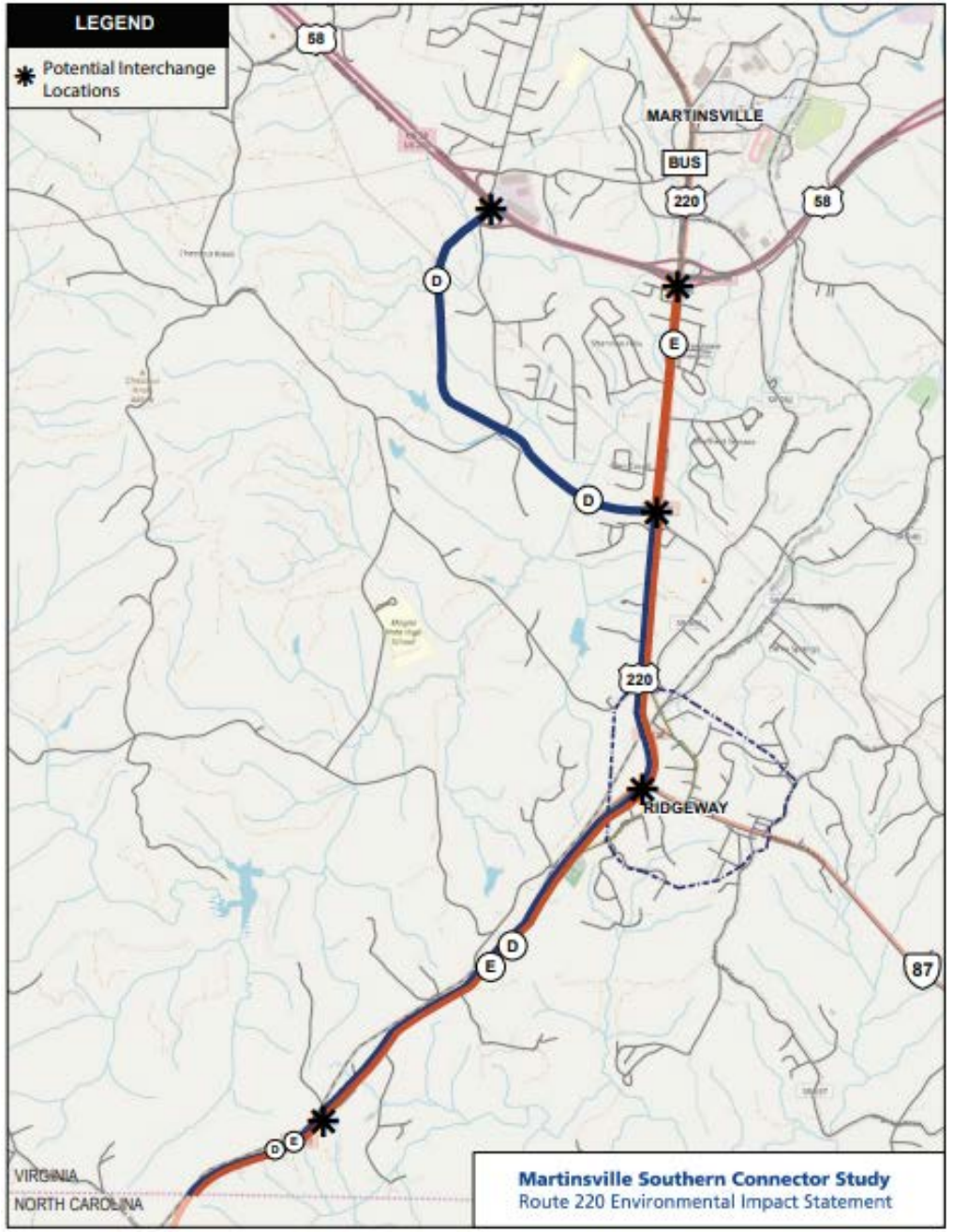
The purpose of the Martinsville Southern Connector Study is to enhance mobility for both local and regional traffic traveling along U.S. Route 220 between the North Carolina state line to the U.S. Route 58 Bypass near Martinsville, Virginia.

The study addresses the following needs:

- **Accommodate Regional Traffic**
- **Accommodate Local Traffic**
- **Address Geometric Deficiencies and Inconsistencies**

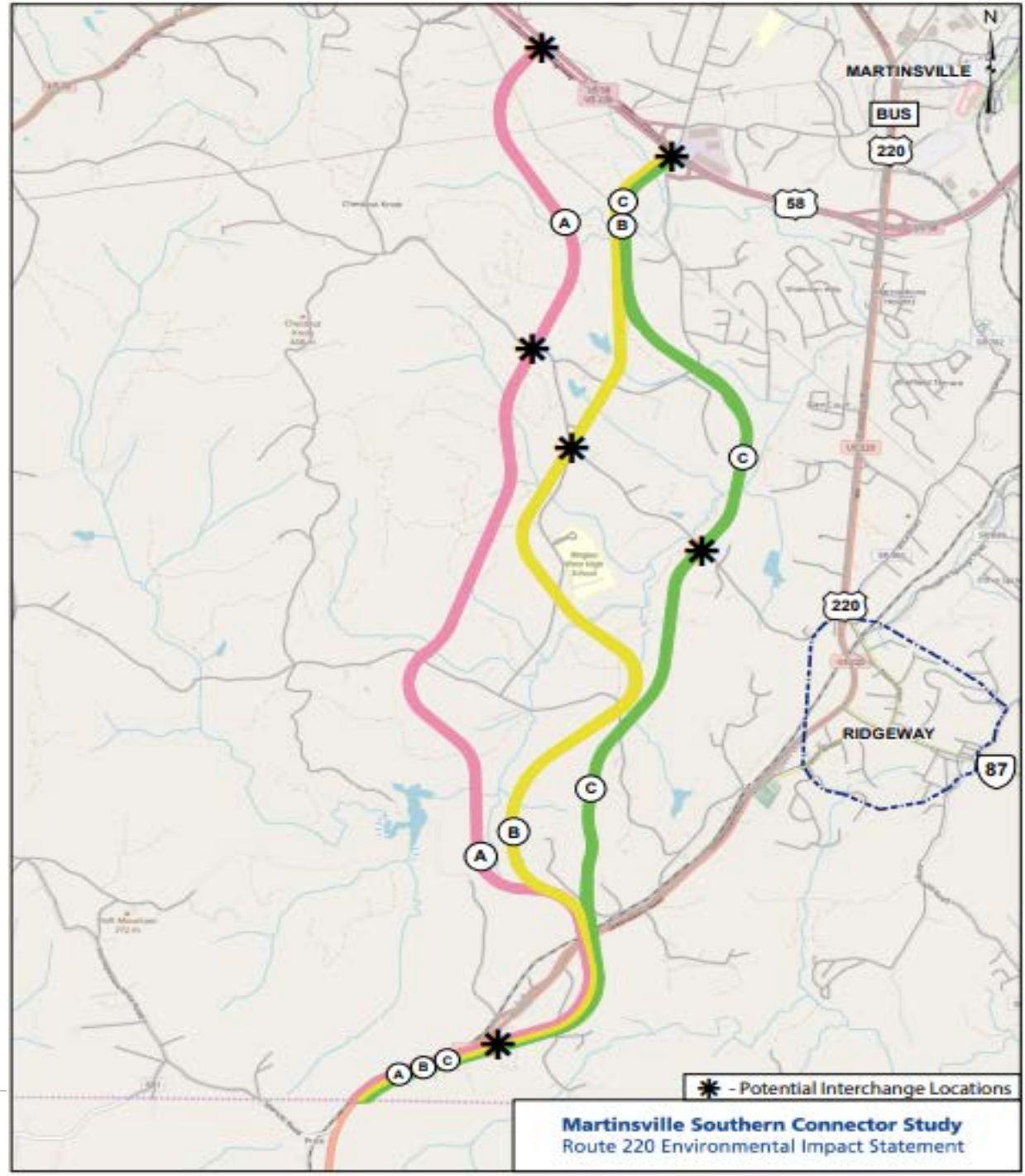
ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

- **Alternative D - Western Spur Alignment**
- **Alternative E - 220 Reconstruction Alignment**
- **Private property impacts associated with these alternatives made both infeasible**



ALTERNATIVES RETAINED FOR DETAILED STUDY

Western Alignments – Alternatives A, B & C



ALTERNATIVES RETAINED FOR ANALYSIS

Alternative	Approximate Length	Relocations		Wetlands (acres)	Streams (linear feet)	Planning Level Cost Estimate
		Residential	Commercial and Other			
A	8.3 miles	17	1	7.8	28,530	$760 million
B	7.7 miles	26	5	5.9	20,548	$750 million
C	7.4 miles	25	4	3.7	21,881	$620 million

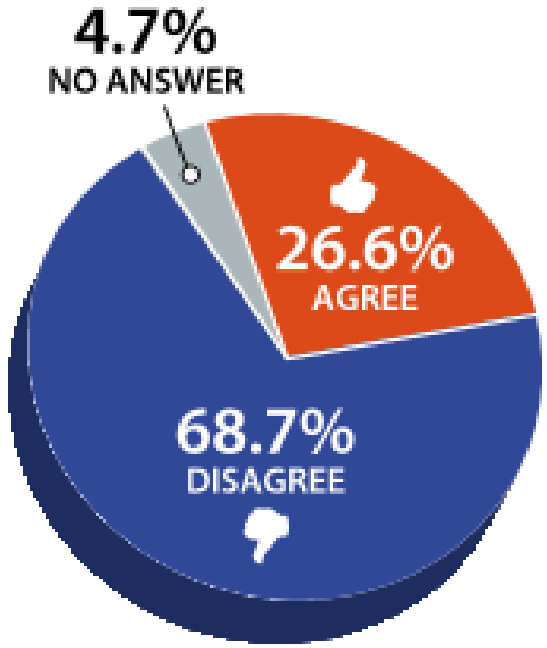
- Impacts have been estimated based on the planning level limits of disturbance (LOD) of 400 feet, which would be refined if an alternative advances beyond the study to a more detailed phase of project development
- Cost estimates will be refined as the study progresses

BASIS FOR RECOMMENDATION OF THE PREFERRED ALTERNATIVE

- 14 meetings with local, state, and federal agencies that have resulted in concurrence through the study process
- VDOT's recommendation is based on how each alternative meets the Purpose and Need, while balancing cost and impacts
- The recommendation is informed by public review and has achieved concurrence from the federal agencies
- Concurrence by USACE implies the recommended preferred alternative can successfully advance through the permitting process

PUBLIC COMMENT ON THE RECOMMENDED PREFERRED ALTERNATIVE

- **659 public comments received through the public hearing, court reporter, online survey, email, and standard mail**
- **Additional public comment opportunity will be offered when the Draft EIS is issued**



26.6%

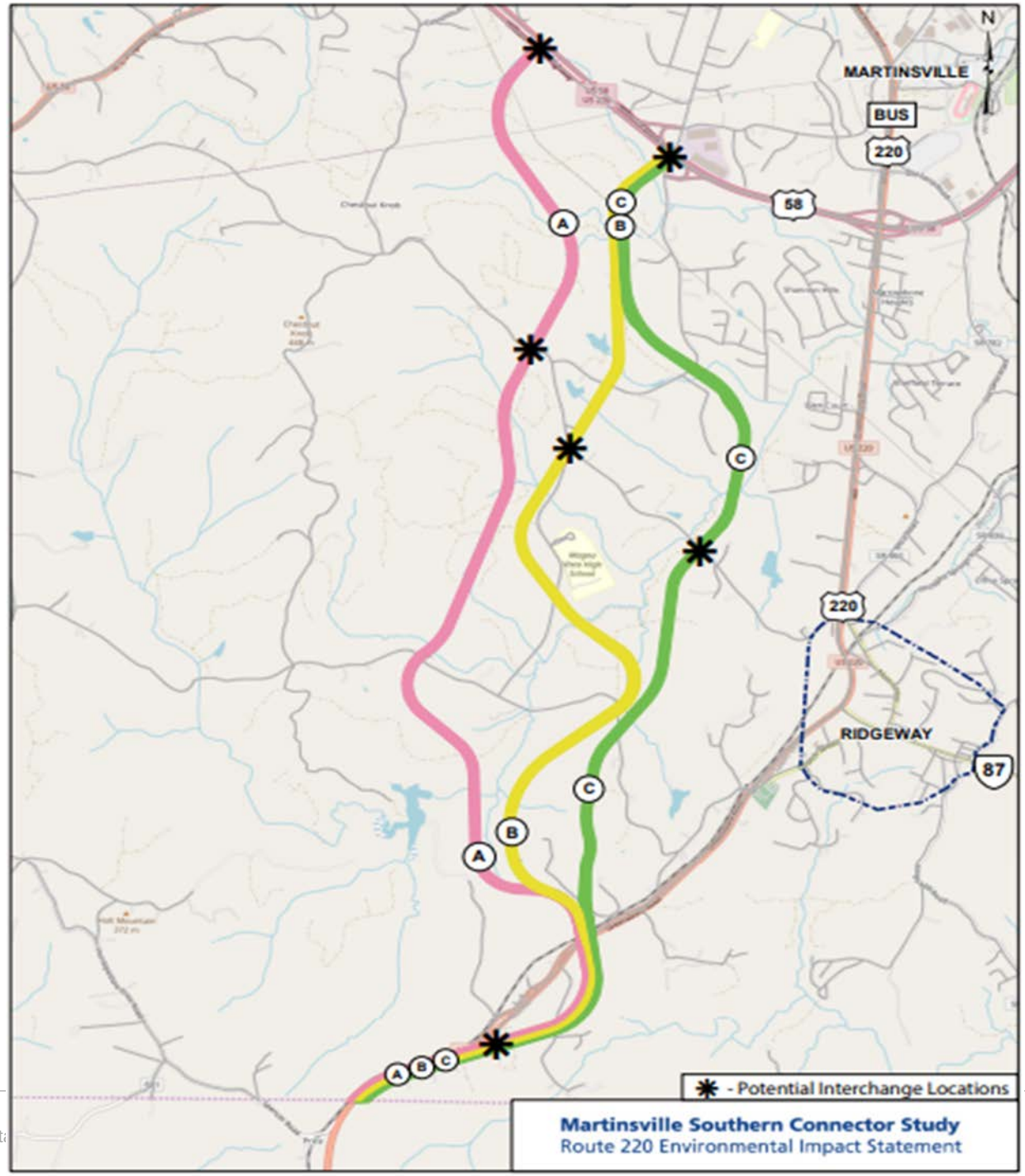
Agree With VDOT's Recommendation of Alternative C as the Preferred Alternative

PUBLIC HEARING – AUGUST 15, 2019

- 295 signed-in attendees
- 69 comment forms received at the public hearing
- 21 comments received via court reporter
- Four letters from individual citizens received
- One petition received
- Primary concerns: potential impacts to properties and noise
- Letters of support received since the public hearing

CTB DECISION OPTIONS

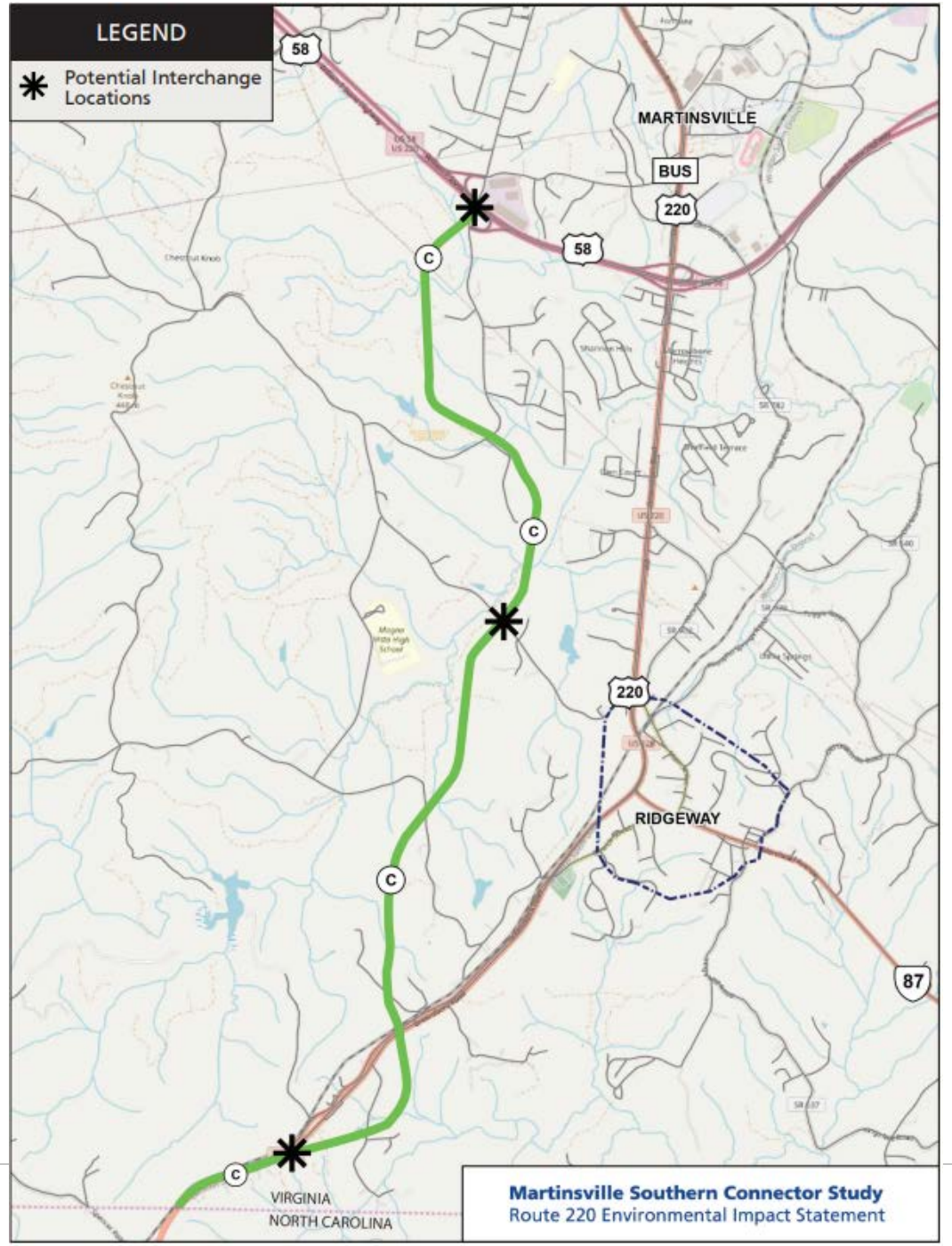
- **The CTB can designate the preferred build alternative route location as Alternative A, B or C**
- **The CTB can also select the No-Build option**



STAFF RECOMMENDATION OF THE PREFERRED ALTERNATIVE

Alternative C

- Satisfies Purpose and Need and best balances impacts and cost
  - Lowest estimated cost by $130 million
  - Lowest estimated wetland impacts by over 2 acres
- Refinements to the preferred alternative to be considered



STEPS THAT WILL FOLLOW CTB ACTION

1. CTB action to identify preferred alternative
2. Publication of Draft EIS documenting preferred alternative
3. Public hearing to present Draft EIS
4. Publication of Final EIS responding to public comments and supporting a permit application
5. FHWA Record of Decision/USACE and DEQ permits issued

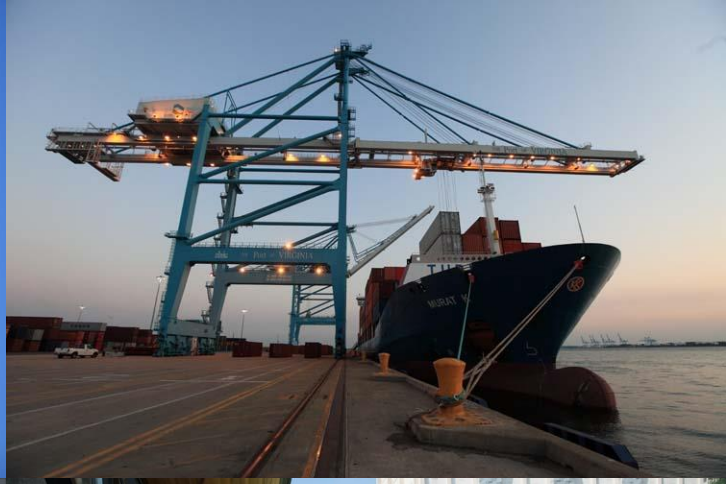
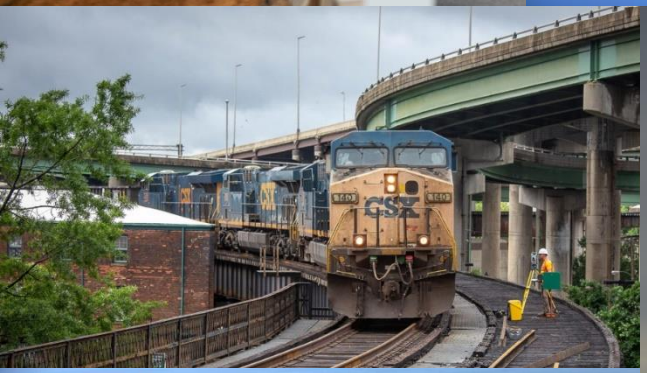
QUESTIONS, COMMENTS, DISCUSSION

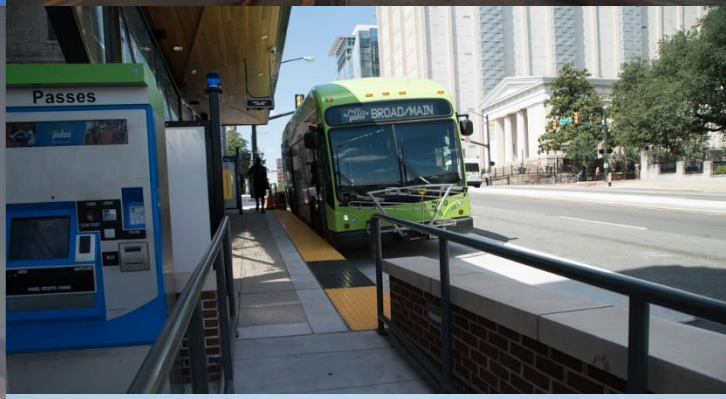
COMMONWEALTH of VIRGINIA
Office of the
SECRETARY of TRANSPORTATION

Proposed Changes to SMART SCALE Policies and Methods - Round 4

December 10, 2019




Passes
BROAD/MAIN

Summary

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Recap of Proposed Changes
  - Timeline and schedule
  - Project eligibility
  - Project Readiness
  - Analytical methods and weights
  - Other minor changes

SMART SCALE

Funding the Right Transportation Projects in Virginia

Changes to Timeline

- Pre-App intake window reduced from **3 months to 1 month**
- NEW - Pre-apps that can be submitted will be based on cap limits
  - **Cap limit of 10: will be allowed to submit 12 pre-apps (10+2)**
  - **Cap limit of 4: will be allowed to submit 5 pre-apps (4+1)**
- Pre-application cap limits prevent VDOT/DRPT staff from reviewing applications that will not be submitted while providing cushion in case a project screens out
- Two full months to complete final application - refine cost estimate, enter econ dev sites, upload supporting documents, etc

Localities	MPOs/PDCs/Transit Agencies	Pre-Application Cap	Final Application Cap
Less than 200K	**Less than 500K**	**5**	**4**
Greater than 200K	**Greater than 500K**	**12**	**10**

Project Eligibility

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Two areas to clarify/limit eligibility:
  - Transit Maintenance Facilities - propose that stand-alone maintenance facilities not be eligible - must include capacity expansion of transit system
  - Systemwide Investments - improvements that do not have a typical from/to and often cover a larger geographic area
    - ***Examples***
      - Jurisdiction-wide implementation of adaptive signal controllers
      - Countywide bus stop upgrades
    - Prohibit project applications that include improvements that are jurisdiction-wide
    - Expansive scope and multi-faceted nature of improvements present considerable challenges for scoring and validation

Project Readiness

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Board has strengthened project readiness requirements each round
- Strengthened policies to-date have focused on highway expansion investments - requiring alternative analysis and planning studies
- Recommend similar policy provisions for corridor level adaptive signal controller upgrades and major transit capital investments such as Bus Rapid Transit (BRT) and light rail
    - Corridor level adaptive signal controllers
        - require detailed corridor study/plan
    - BRT/Light Rail
        - require planning study that shows alternatives considered
        - inclusion in agency's Transit Strategic/Development Plan

SMART SCALE

Funding the Right Transportation Projects in Virginia

Project Evaluation and Scoring

Congestion

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Feedback - concern that current methods do not account for congestion on both weekdays and weekends
- Implement method to better account for peak period congestion throughout entire week (weekdays and weekends)
- Datasource: INRIX dataset
- OIPI will present more detail on proposed approach in January

Congestion- Recommendation for Round 4

1) Implement method to better account for peak period congestion throughout entire week (weekdays and weekends)

Safety

SMART SCALE
Funding the Right Transportation Projects in Virginia

- **SMART SCALE team has been working on the following areas related to safety**
  - **Targeted Crash Modification Factors (CMFs)**
  - **Weighting of S1 (crash frequency) versus S2 (crash rate) - currently 50/50**
    - Recommend changing weight to 70/30
    - Supports Board targets to reduce fatal and injury crashes and pending policy changes related to HSIP program
  - **Increase weight for Safety factor in Area Type A from 5% to 10%**

Safety - Recommendations for Round 4
1) For certain project types a targeted CMF will be used
2) 70/30 split in weighting - more weight to reduction in crash frequency
3) Area Type A - Increase safety weight from 5% to 10%

Economic Development Sites

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Policies adopted by the Board for Round 3 improved the reasonableness of economic development results
- Zoned only properties has to be adjacent to the proposed transportation improvement
- In validating zoned properties and conceptual site plans we noticed several examples of high floor area ratios (FAR) - values in range of 5 were not uncommon
- Applicants uploaded zoning ordinances showing that larger FAR are allowed, but that does not mean they are likely

Weighting Sites based on Readiness

Highest

Lowest

Approved Detailed Site Plan
Submitted Detailed Site Plan
Approved Conceptual Site Plan
Submitted Conceptual Site Plan
Zoned Only

Economic Development Sites

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Floor Area Ratio (FAR) assumptions for zoned-only properties can be problematic
- Large industrial tracks (250+ acres) with assumed FARs of 1 250 acre would equate to 10,890,000 sq ft building
  - **Boeing Everett Factory - 4.28M sqft**
- Several tracts with assumed FARs of 5.0 or higher
- Applicants provided documentation of local ordinances allowing FAR value used - just because it is allowed does not mean it is likely

Economic Development - Recommendation for Round 4

1) FAR for zoned only properties capped at 0.3 unless applicant can prove average FAR around project is higher or minimum FAR in local zoning ordinance is higher than 0.3

Economic Development Sites: VEDP Business Ready Sites

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Virginia Economic Development Partnership (VEDP) Business Ready Sites proposed to be recognized within Urban Development Area need category
- In recognition of this change we proposed change in weighting process used to scale ED1 measure - Project Support for Economic Development
- Proposed changes will not affect eligibility or site identification practices
- Changes would provide additional weight to VEDP Business Ready Sites and additional weight to redevelopment projects

Economic Development Sites: VEDP Business Ready Sites

SMART SCALE
Funding the Right Transportation Projects in Virginia

Current weighting process

- Development square footage scaled by *up to 5 points*:
  - 0.5 points if proposed project is specifically referenced in comprehensive or development plan, and
  - Up to 0.5 points based on level of economic distress
  - ***PLUS***
  - .5 points for Conceptual Site Plan Submitted, or
  - 1 point for Conceptual Site Plan Approved, or
  - 2 points for Detailed Site Plan Submitted, or
  - 4 points for Detailed Site Plan Approved

Economic Development Sites: VEDP Business Ready Sites

SMART SCALE
Funding the Right Transportation Projects in Virginia

Proposed weighting process (changes in orange)

- Development square footage scaled by *up to 5 points*:
  - 0.5 point if proposed project is specifically referenced in comprehensive or development plan, and
  - Up to 0.5 point based on level of economic distress

  PLUS
  - .5 points for Conceptual Site Plan Submitted, or
  - 0.5 point for Conceptual Site Plan Approved, or
  - 1 points for Detailed Site Plan Submitted, or
  - 2 points for Detailed Site Plan Approved

  PLUS
  - 0.5 points for VEDP Tier 4 (“infrastructure ready”), or
  - 1 points for Tier 5 (“shovel ready”) Business Ready sites, and
  - 1 points for redevelopment of existing site

Environment
Resource Impact Measure

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Problem: treating measure as a benefit
- Significant potential impact = 0 and No impact = 100
- After lessons of Round 1 - potential impact was then scaled by points in all other measures
- Results can be counter intuitive - if you do not consider $
- Example - HRBT, which had the second-highest total impact to sensitive resources received the greatest number of points for this measure due to high benefit score

Environment - Recommendation for Round 4

1) Convert E1 to subtractive measure (subtracting up to 5 points at end of scoring)
2) E2 (Air Quality Energy) measure weight changed to 100%

Environment
Resource Impact Measure

SMART SCALE
Funding the Right Transportation Projects in Virginia

Proposed method would be subtractive, taking away up to five benefit points based on potential sensitive acres impacted

Project	Description	Impacted Acres	E1 Weighted Score	Benefit Score Before E1	Benefit Score After E1	Requested Amount	SS Score
W	High score, high cost, large footprint	900	-5.00	59.00	54.00	$ 80,000,000.00	6.75
X	High score, moderate cost, moderate footprint	300	-1.67	26.00	24.33	$ 15,000,000.00	16.22
Y	Moderate score, moderate cost, large footprint	450	-2.5	6.00	3.5	$ 40,000,000.00	0.85

Land Use

SMART SCALE
Funding the Right Transportation Projects in Virginia

- For Round 3, the Board adopted a new method objective metric to replace subjective metric to measure a project's support for transportation efficiency of development
- L1 multiplies non-work accessibility by future density; existing dense areas do well in this measure but emerging areas may not due to lack of current non-work destinations
- L2 multiplies non-work accessibility by the *change* in population and employment; areas that do well in L1 also tend to perform well in L2;

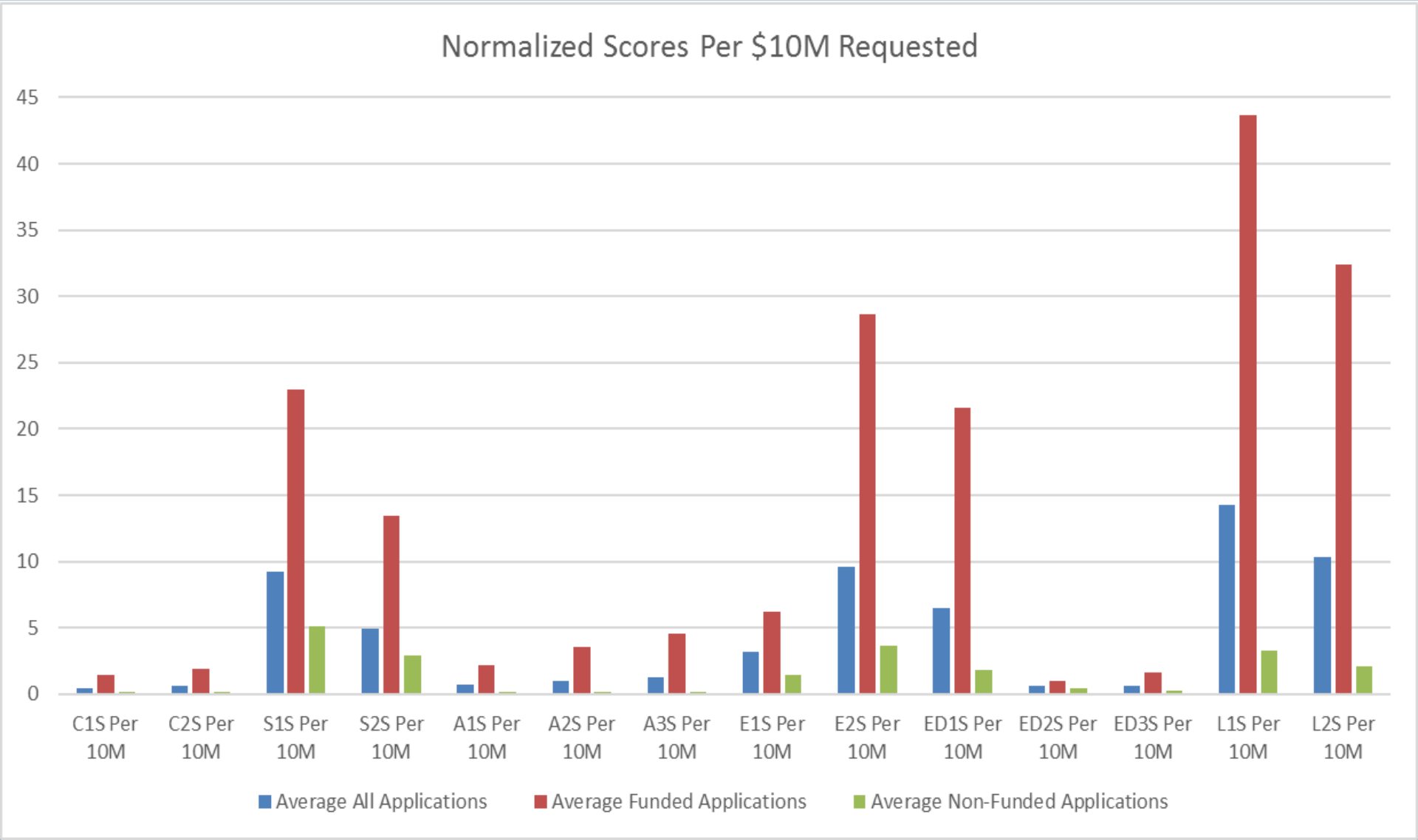
Land Use - Recommendations for Round 4

1) Drop L1 measure and give 100% of weight to L2
2) Area Type A - Land Use weight changed from 20% to 15%
3) Area Type A = Safety weight changed from 5% to 10%

Avg Normalized Scores Per $10M Requested

SMART SCALE

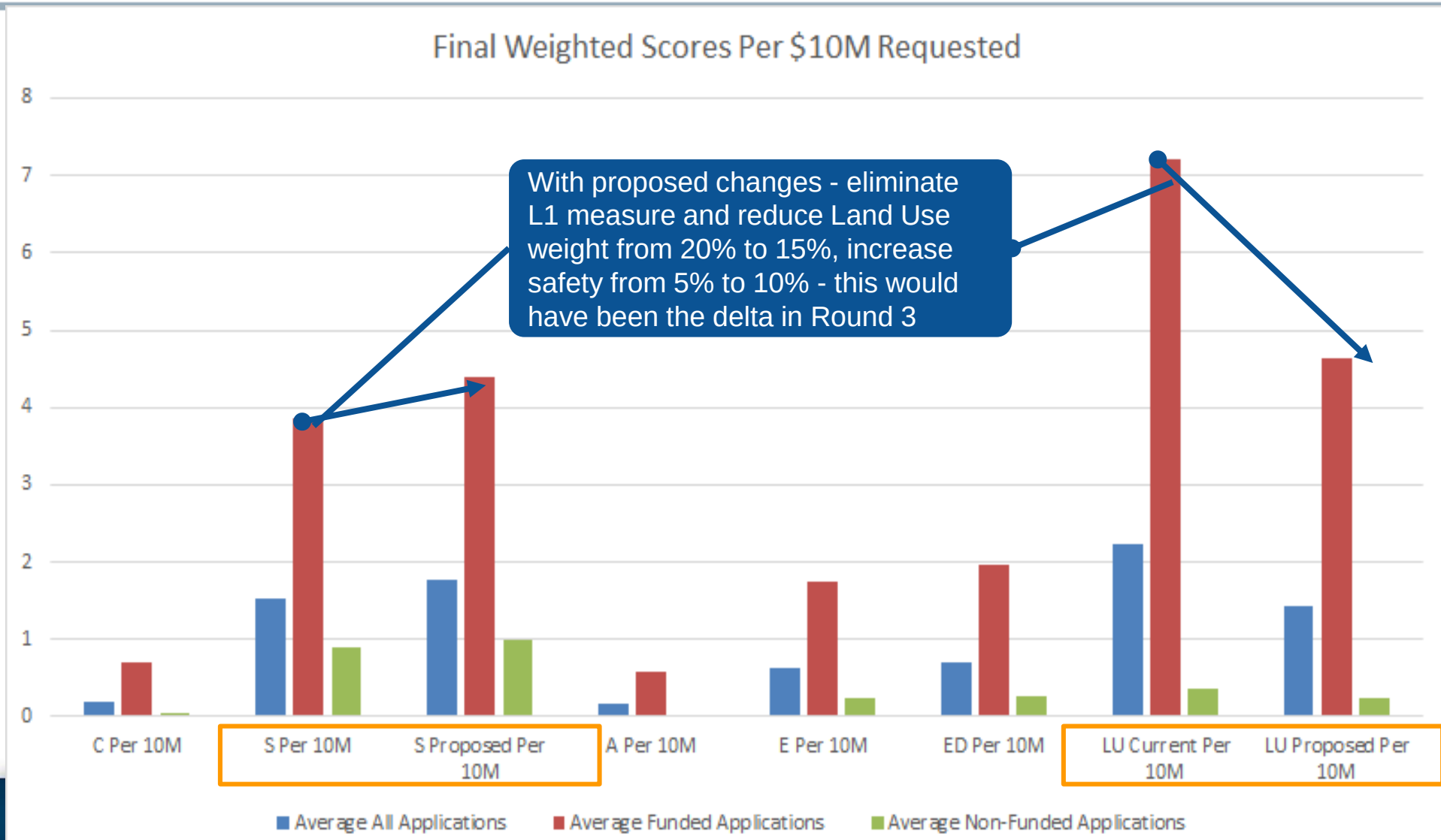
Funding the Right Transportation Projects in Virginia



Final Weighted Scores Per $10M Requested

SMART SCALE

Funding the Right Transportation Projects in Virginia



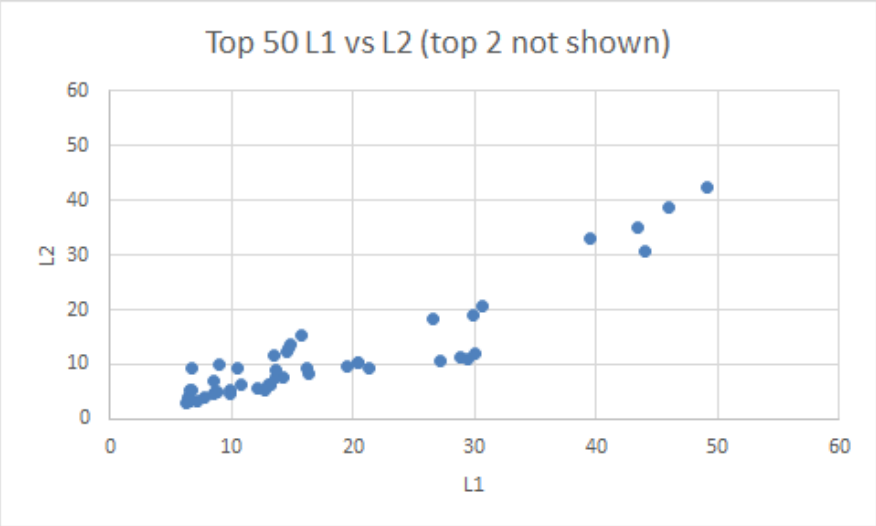
Land Use

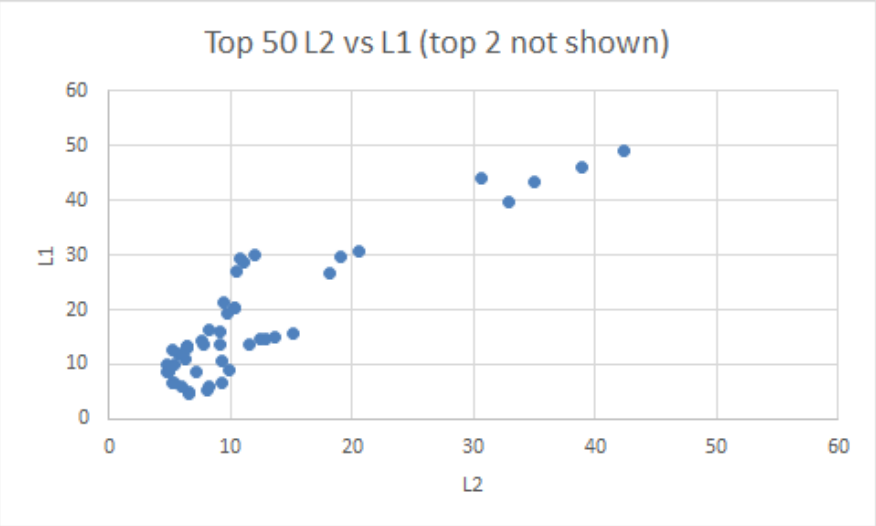
SMART SCALE
Funding the Right Transportation Projects in Virginia

- ***Top 50 L1 scores vs L2***: Areas with high population and employment density highly correlate with areas with higher density of non-work destinations
  - Projects in these areas do well in both the L1 and L2 measures
- ***Top 50 L2 scores vs L1***: Emerging growth areas that need to improve walkability may not have current density of non-work destinations
  - Projects in these areas do well in L2, but do not necessarily do as well in L1

Land Use

SMART SCALE
Funding the Right Transportation Projects in Virginia





- Intent and outcome of proposal to eliminate L1 is not to hurt projects that currently score well in L1 - instead we are trying to give boost to emerging/growth areas that need to invest in walkability
- All other measures look at change or delta - L2 is most consistent with this approach as it looks at anticipated growth

Other Minor Changes

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Area Types
  - Fredericksburg Area Metropolitan Planning Organization (FAMPO) has formally passed resolution to request change in Area Type from A to B
  - New River Valley Regional Commission (NRVRC) has expressed desire to change Area Type from C to D - formal resolution has not been received to-date
- Policy resolution in January will clean up and clarify existing policy - example: formalize policy for project cancellation

Treatment of Interstate Projects

SMART SCALE
Funding the Right Transportation Projects in Virginia

- Interstate projects have been outlier projects that have suppressed benefits scores for other investments
- Dedicated funding sources for operational and capacity improvements for Interstates exists now from the 81 legislation
- Intent is to develop Interstate Corridor Plans for each Interstate
  - I-81 Complete
  - I-95 Underway
  - I-64 Next

- Unresolved policy question - How should Interstate projects be handled in SMART SCALE?

COMMONWEALTH *of* VIRGINIA

Office of the

SECRETARY *of* TRANSPORTATION

Thank you.

COMMONWEALTH *of* VIRGINIA
Office of the
SECRETARY *of* TRANSPORTATION

2019 VTrans Vision, Goals, Objectives, Guiding Principles
2019 Mid-term Needs Identification Methodology

Commonwealth Transportation Board

Nick Donohue, Director, Office of Intermodal Planning and Investment

December 10, 2019

VTRANS - REQUIREMENTS

- Federal and State Requirements
  - Federal requirements per 23 U.S.C. 135 and other
  - State requirement § 33.2-353: OIPI to **assist the CTB** in the development and **update of a Statewide Transportation Plan**. Conduct a statewide needs assessment of CoSS, RN, UDA travel markets
  - State requirement § 2.2-229: OIPI to assist the Commonwealth Transportation Board in the **development of a comprehensive, multimodal transportation policy**, which may be developed as part of the Statewide Transportation Plan pursuant to § 33.2-353

VTRANS - REQUIREMENTS

- Virginia-specific Business Requirements
  - Identify Mid-term safety needs to guide SMART SCALE safety investments
  - Guide state funding programs (e.g. SMART SCALE, Revenue Sharing Priority 2 Projects)
  - Guide project development and advance activities

- Per § 33.2-353. Commonwealth Transportation Board to develop and update Statewide Transportation Plan

  "It is the intent of the General Assembly that this plan assess transportation needs and assign priorities to projects on a statewide basis, **avoiding** the production of **a plan that is an aggregation of local, district, regional, or modal plans**."

VTrans – Major Components

Focus of Today's Presentation and Request

CTB's Vision, Guiding Principles, Goals, and Objectives

Needs Identification (Mid-term)

Alternative Futures or Needs Identification (Long-term)

Strategic Actions (Recommendations)

VTrans Vision and Goals

VISION

Virginia's multimodal transportation system will be **Good for Business, Good for Communities, and Good to Go**. Virginians will benefit from a sustainable, reliable transportation system that advances Virginia businesses, attracts a 21st century workforce, and promotes healthy communities where Virginians of all ages and abilities can thrive.

VTrans Guiding Principles

Guiding Principle 1: **Optimize Return on Investments**

Guiding Principle 2: **Ensure Safety, Security, and Resiliency**

Guiding Principle 3: **Efficiently Deliver Programs**

Guiding Principle 4: **Consider Operational Improvements and Demand Management First**

Guiding Principle 5: **Improve Coordination Between Transportation and Land Use**

Guiding Principle 6: **Ensure Efficient Intermodal Connections**

VTrans Mid-term Needs – Performance Measures and Categories

GOAL	MID-TERM NEEDS MEASURES AND CATEGORIES	CoSS	RN	UDA	STATE-WIDE
A. **Economic Competitiveness** 	Congestion: Percent Person Miles Traveled in Excessively Congested Conditions (PECC)$_1$	✔	✔		
	Congestion: Travel Time Index (TTI)$_2$	✔	✔		
	Reliability: Level of Travel Time Reliability (LOTTR)	✔	✔		
	Reliability: Passenger and Intercity Rail On-time Performance	✔			
B. **Accessible Places** 	Transit Accessibility to Activity Centers for Workers		✔		
	Non-Motorized Access to Activity Centers for Workers		✔		
	Transit Access for Equity Emphasis Areas		✔		
	Access to Industrial and Economic Development Areas (locally-determined)$_3$				✔
	UDA Area Needs (locally-determined)$_4$			✔	

VTrans Mid-term Needs – Performance Measures and Categories

GOAL	MID-TERM NEEDS MEASURES AND CATEGORIES	CoSS	RN	UDA	STATE-WIDE
C. **Safety** 	Locations with High Number of Crashes and High Crash Severity				✔
	Pedestrian Safety Improvement Locations				✔
D. **Proactive System Management**	Capacity Preservation	✔	✔		
E. **Healthy, Sustainable Communities**	Transportation Demand Management	✔	✔		

1 PECC: All of limited-access CoSS, plus select limited access facilities within Regional Networks
2 TTI: All of non-limited access CoSS, plus all other facilities within Regional Networks
3 Access to IEDAs: Locations included in Virginia Economic Development Partnership's Business-Ready Site Program
4 UDA Area Needs: Includes improvements such as bicycle and pedestrian infrastructure, circulation and access, safety, transit enhancements and access, etc.

VTRANS MID-TERM NEEDS – TIMELINE (SINCE THE LAST PRESENTATION TO THE BOARD)

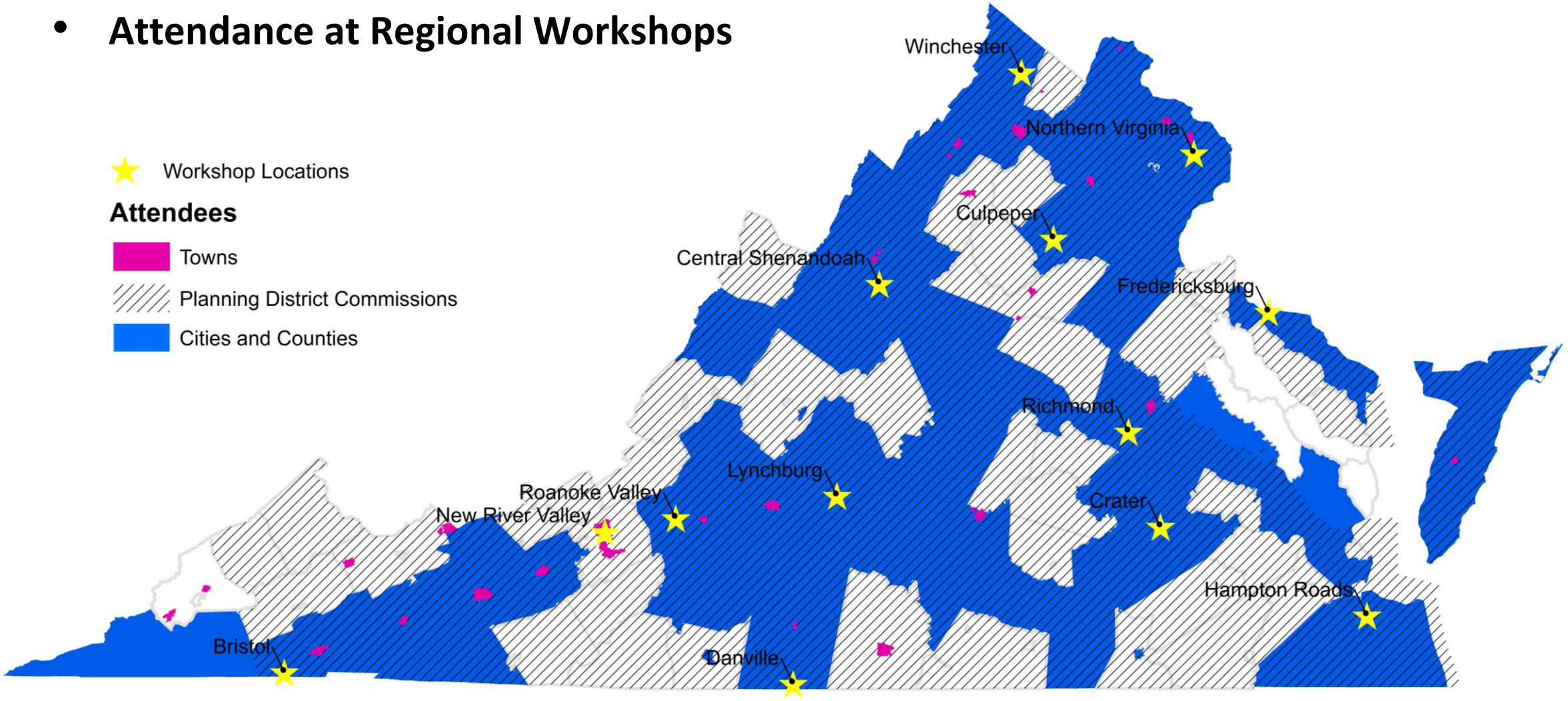
June, 2019	**CTB Workshop** Presented method for identification of Mid-term Needs
July	**Analyze Performance** Developed initial results
August	**Gather Feedback from Transportation Partners** Conducted 13 Regional Workshops to seek feedback on the initial results
September	**Incorporate Feedback in the Methodology** Revised methods, introduced new need categories to incorporate feedback
October, November	**Validate** Draft documents made available at the Fall Transportation Meetings
December	**Incorporate Feedback in the Methodology** Made additional revisions to incorporate feedback
January	**Request Action**

VTrans Mid-term Needs – Outreach and Engagement Activities

- **Attendance at Regional Workshops**
  - 83 Cities and Counties
  - 30 Towns
  - 15 MPO's
  - 16 PDC's
  - 16 Transit Agencies
  - 4 TDM agencies
  - 4 airports
  - 3 universities
  - Various other state and regional stakeholders

VTrans Mid-term Needs – Outreach and Engagement Activities

- **Attendance at Regional Workshops**



This map shows jurisdiction boundaries.

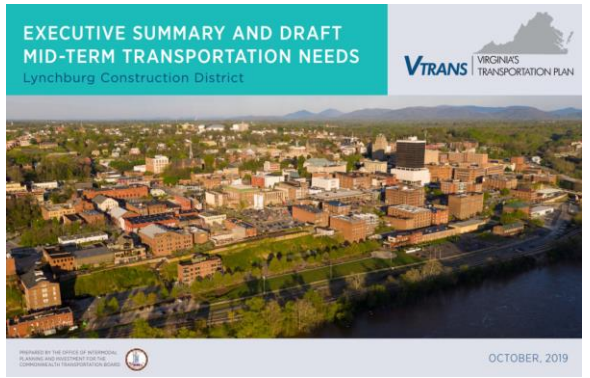
VTrans Mid-term Needs – Outreach and Engagement Activities

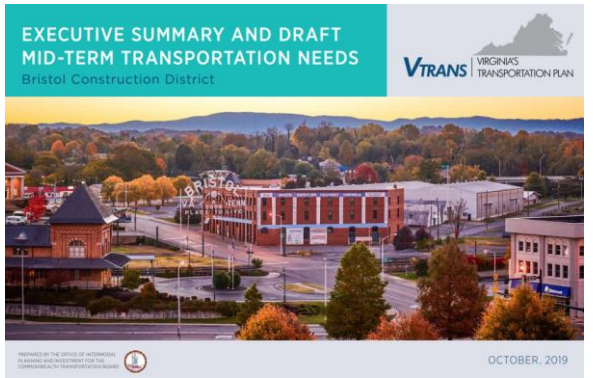
October 2018 - October 2019

VTrans Mid-term Needs – Availability of Mid-term Needs

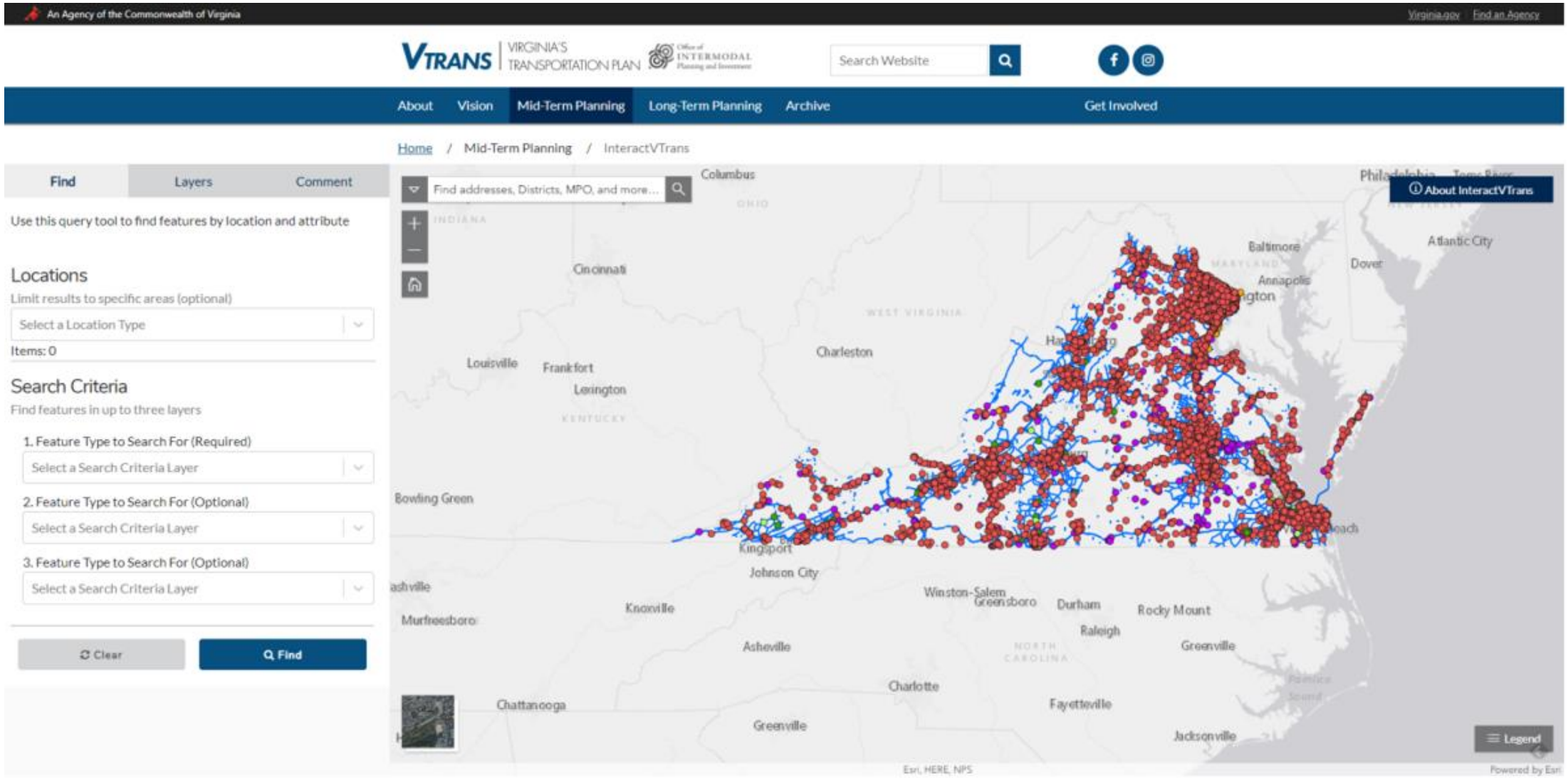
1. Print-ready Documentation
   - Executive Summary and maps showing Mid-term Needs
   - Methodology Report
2. Dataset
3. InteractVTrans
   - Find / download Needs by location
   - View different layers
   - Share comments

InteractVTRANS | VIRGINIA'S TRANSPORTATION PLAN
at your fingertips





VTrans Mid-term Needs – Availability of Mid-term Needs



VTrans Mid-term Needs – Noteworthy Points

- Key attributes of the 2019 Mid-term Needs Methodology
  1. Follows Data-driven methods
  2. Includes Needs that are specific but not prescriptive
  3. Allows for innovative multimodal solutions including carshare, bikeshare, etc.
  4. Reflects mobility needs for Equity Emphasis Areas
  5. Addresses access needs for Industrial and Economic Development Areas
  6. Easier to identify more pressing needs
     - For example, localities can identify corridors that have both, **Need for Travel Time Reliability Improvements** AND **Need for Safety Improvement**

VTrans Mid-term Needs – Public & Agency Feedback

- We received approximately 125 comments that include:
  - Add more Needs
  - Analyze accessibility and mobility needs outside of Regional Networks and Corridors of Statewide Significance
  - Provide CoSS designation for additional routes
  - Make SMART SCALE screening determinations
  - Modify VTrans Needs to ensure SMART SCALE High Priority Projects Program (HPPP) funding eligibility
  - Other
    - Clarifications
    - Corrections and inconsistencies
    - Other comments (prioritization related, editorial comments)

VTrans Mid-term Needs – Changes to the Draft Mid-term Needs

- The following changes were made to the Draft Mid-term Need categories:
  - Change to Need category: Transit Needs for Equity Emphasis Areas
    - Require that one of the following two groups be present in concentrations at least as high as the regional average: (1) low-income populations; and, (2) population with disabilities
  - Change to Need category: Transit Accessibility Access to Activity Centers for Workers
    - Transit access Needs also identified for freight-dependent activity centers
  - Change to Need category: Non-motorized Access to Activity Centers for Workers
    - Now identified within metropolitan planning areas
  - Change to Need category: Transportation Demand Management
    - Now identified for CoSS and metropolitan areas within RNs
  - Miscellaneous items (edits for corrections and consistencies, editorial modifications)

VTrans Mid-term Needs – Considerations for Future Updates

- Develop more complete and accurate datasets to better capture:
  1. Non-recurring congestion
  2. Impact of seasonal variations
  3. Impact of committed improvements
  4. Impact of topography or geographic conditions
  5. Quality of transit and rails services, instead of just availability
  6. Quality and availability of non-motorized infrastructure

VTRANS | VIRGINIA'S TRANSPORTATION PLAN

COMMONWEALTH *of* VIRGINIA

Office of the

SECRETARY *of* TRANSPORTATION

Interstate 95 Corridor Improvement Plan

Ben Mannell, AICP

December 10, 2019

DMV www.dmvNow.com

Virginia Department of Aviation

DRPT Virginia Department of Rail and Public Transportation

MVDB Motor Vehicle Dealer Board COMMONWEALTH OF VIRGINIA

Virginia Port Authority

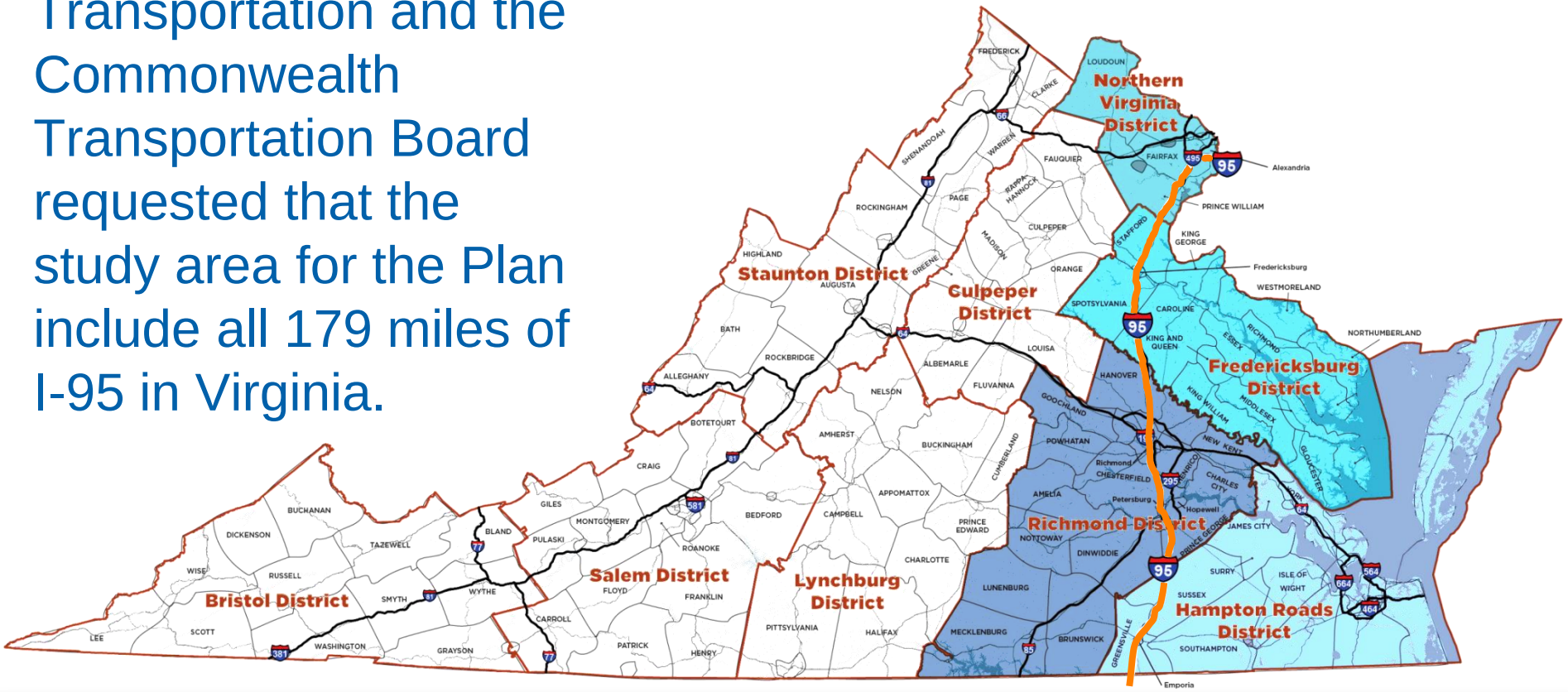
VDOT Virginia Department of Transportation

I-95 Corridor Improvement Plan- Progress to Date

- Problem identification
- Identification of potential solutions for each problem area and operations plan
- Prioritization of operations strategies

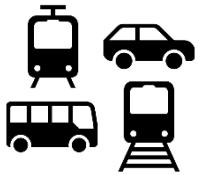
Study Area
I-95, Route 1, and Route 301 Corridors

The Secretary of Transportation and the Commonwealth Transportation Board requested that the study area for the Plan include all 179 miles of I-95 in Virginia.



Corridor Significance

Critical North-South Corridor



Multimodal Corridor

- Highway
- Metrorail
- VRE
- Vanpool
- Carpooling
- Slugging
- Commuter/Express Bus
- Park and Ride Lots
- Amtrak

9.0 Million

Trucks Per Year

> 3,700 Incidents Per Year

(With Average Clearance Times Almost 2 Hours)

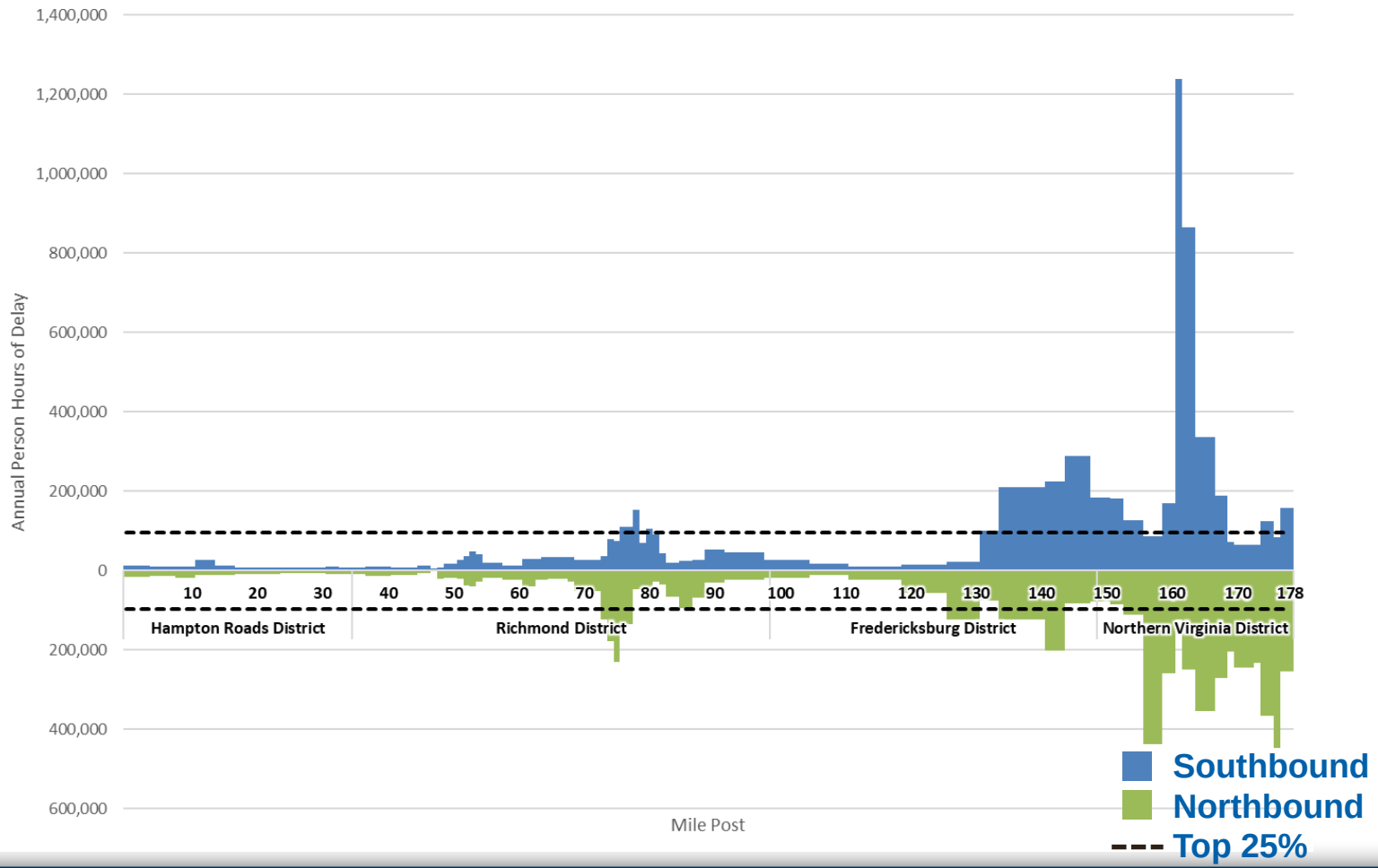
~ 21,000

Crashes Over 4 Years

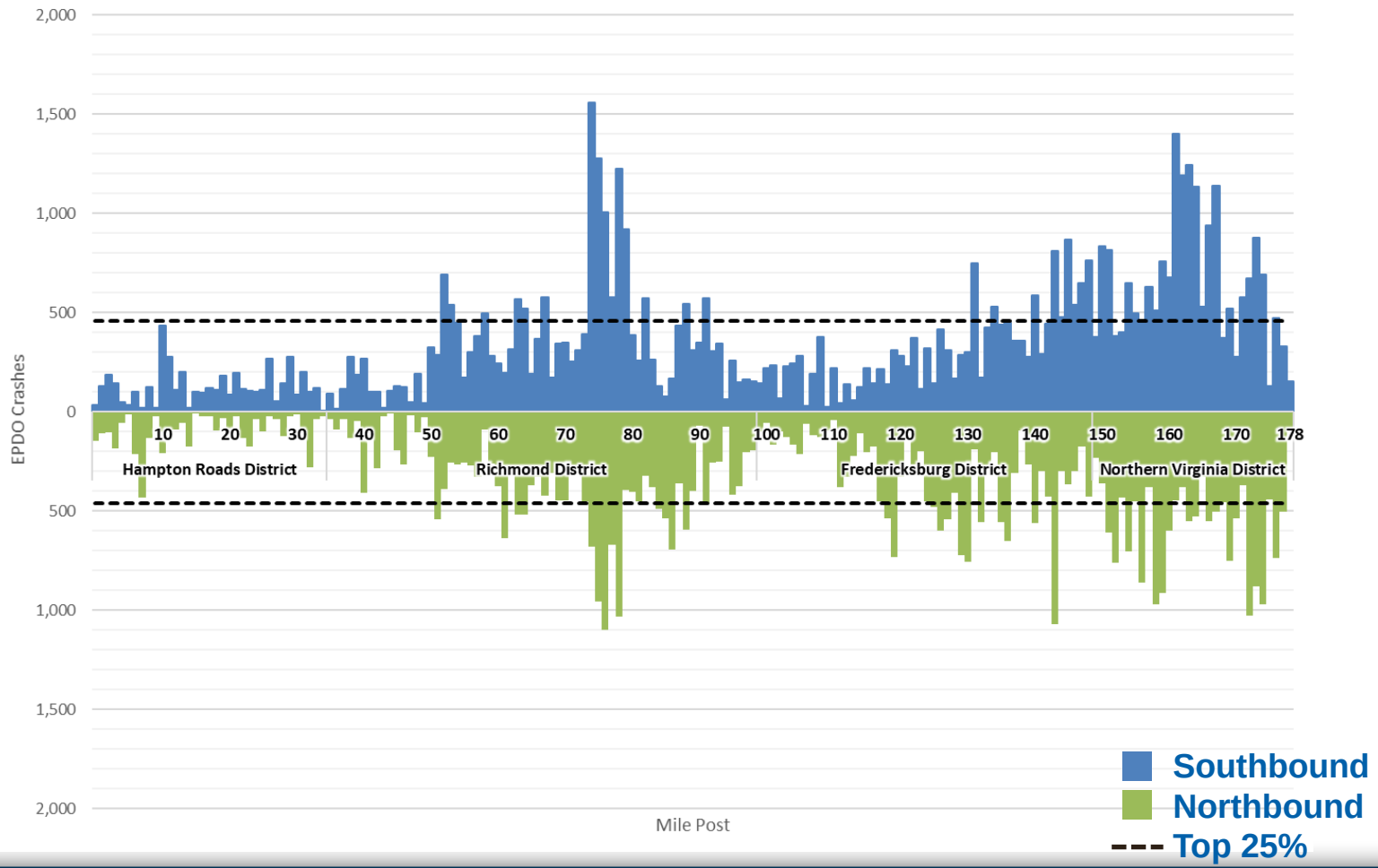
$195 Billion

in Goods Per Year

Focus Area: Occoquan
2018 Annual Delay Summary
One-Mile Segments

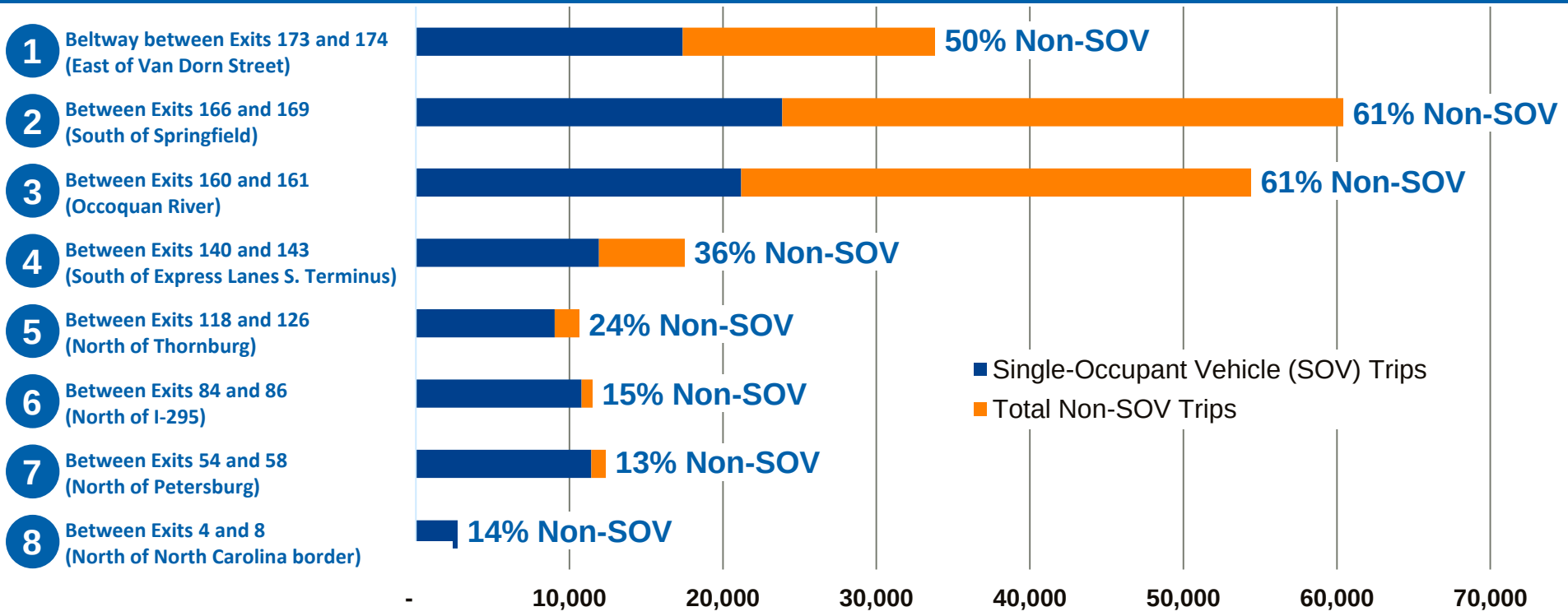


Crash Frequency and Severity Summary
One-Mile Segments



Persons Moved on Northbound I-95 in AM

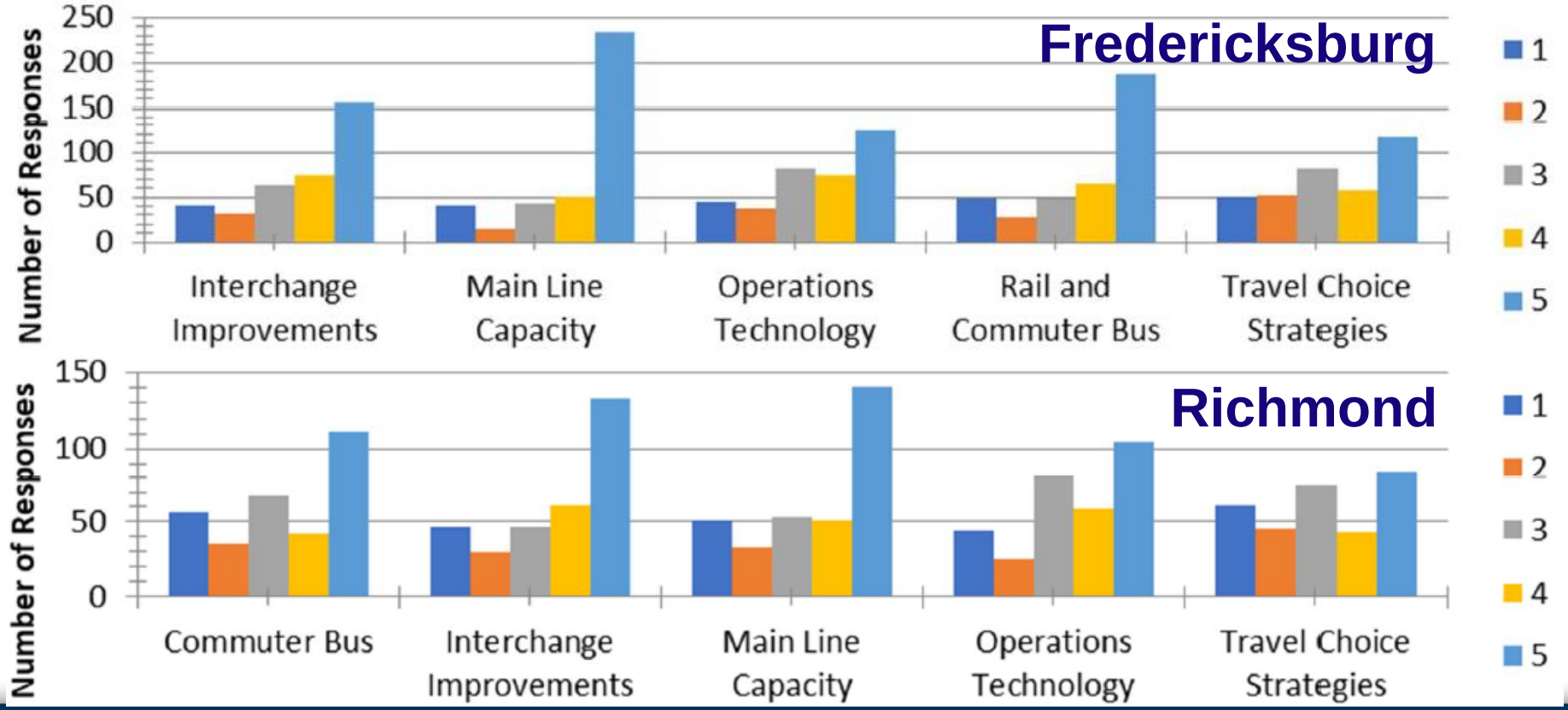
Existing



Total Persons Moved = SOV + Intercity Rail (Amtrak), Commuter Rail (VRE), Metrorail, Commuter Bus, Vanpool, Slugging and Carpool

October Meetings Public Feedback and Survey Results: Strategy Rating

Participants were asked to rate strategies on a scale of 1 to 5, with 5 being the highest



Suite of Improvements

Focus Areas

- **OPERATIONS ON I-95**
- **PARALLEL FACILITIES** (Routes 1 and 301)
- **MULTIMODAL** (rail, bus, carpool, park and ride)
- **CAPITAL PROJECTS ON I-95**

Data-driven approach incorporating performance measures

GOALS

To provide faster, safer, and more reliable travel along the I-95 corridor

Corridor-wide Improvements Planning Level Cost Estimates

Estimated FY20 Capital Cost Ranges

- Freeway operations upgrades: $48 - $53 M
- Arterial operations upgrades: $12 - $15 M
- Multimodal improvements: $215 - $260 M
- Highway capital improvements: $1.3 - 1.8 B

TOTAL: $1.6 - $2.1 B

Potential Capital Improvements

- **54 projects (highway, rail, bus, park & ride) with estimated cost between $1.5 - $2.1B**
- **35 locations requiring additional study**
- **Challenge: Needs far exceed available annual revenues**

Potential Sources of Revenue
Dedicated Interstate Funding Estimates

By FY2022 -

- **~$40M per year**: I-95 south of Northern Virginia District (CTB)
- **~$20M per year**: all Northern Virginia District interstates and supporting facilities (NVTA)
- **~$44M per year**: At the discretion of CTB for any interstate

Potential Sources of Revenue
Other Sources

- **SMART SCALE**
- **Regional funding – NVTA**
- **Regional Surface Transportation Block Grant Program (Northern Virginia, Fredericksburg, Richmond and Tri-Cities MPO regions)**
- **Innovative Transportation Technology Fund**
- **I-395 Commuter Choice**
- **Rail and transit funding programs**

Recommendations

- **Operational improvements offer highest ROI and fastest implementation**
- **$60-$68 M cost will require first 3 years of available funding**
- **Proceed with allocation of funding for operational and parallel facilities upgrades**
- **Conduct further study on items identified**
  - Bi-directional HOT Lanes, Woodrow Wilson Bridge HOT Lanes, multiple interchange improvements

Recommendations

- Complete evaluation of I-64 corridor
- Identify operational improvements for other Interstate corridors
- Establish CTB policy on allocation of dedicated interstate revenues
- Evaluate all potential projects to determine best allocation of dedicated and discretionary Interstate funds

Recommended Operational and Parallel Facilities Improvements

Recommended operational improvements

- Tied to top 25% locations for incident-related delay on I-95 mainline
- Incorporate both freeway and parallel arterial improvements

Over $200M of operations and parallel facilities improvements initially identified

- Prioritized to reflect countermeasures with greatest return on investment
- Will be prioritized on a segment level by district

Total recommended freeway and arterial operations investments: $60 - $68 M

Partial List of Operational Improvements

CCTV Cameras

Detect incidents and provide situational awareness of incidents

Changeable Message Signs

Informs drivers of conditions ahead

Safety Service Patrols

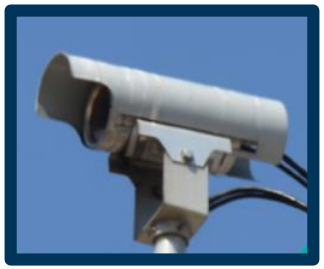
Provide incident scene support and help stranded motorists

Towing Programs

Contract towing services that are activated as incidents are detected

Variable Speed Limits

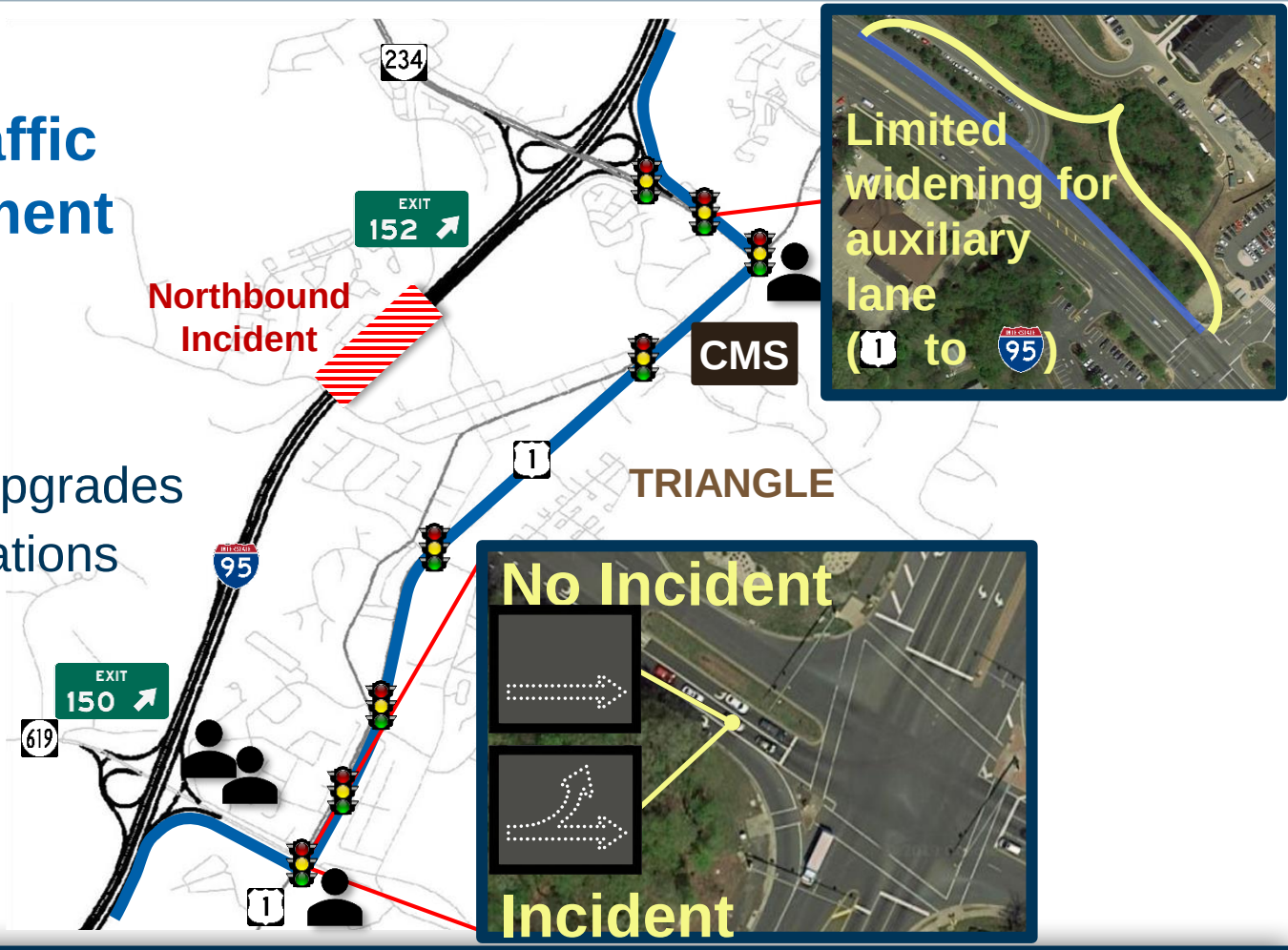
Adjustable speed limits that change to reduce traffic congestion



Parallel Facilities Improvements

Improvements considered for traffic incident management

- Message signs
- Traffic control personnel
- Communications upgrades
- Traffic signal operations
- Intersection improvements
- Sign improvements



Operational Improvements
Potential Benefits

Towing Program
Incident clearance times reduced by up to 27 minutes per incident

Safety Service Patrols
Incident duration reduced by 17% when SSP is on-site

Variable Speed Limits
Reduce crashes by 8% and increase vehicle throughput by 5%

Ramp Metering
22% reduction in travel times on I-95

Recommended Operational and Parallel Facilities Improvements

Example ROI Analysis

Safety Service Patrols (SSP)

- **Safety**
  - Average percent reduction of secondary crashes is 40%
  - 20% of crashes are secondary crashes
- **Mobility**
  - SSP reduces incident duration by 17%

Recommended Operational and Parallel Facilities Improvements

Safety Service Patrol ROI Metrics

- **Mobility**
  - Incident delay
  - % reduction in incident delay
  - Travel time savings
- **Safety**
  - PDO crashes
  - Injury crashes
  - Fatality crashes
- **Energy & Environment**
  - Travel time savings
  - Fuel consumption
  - Fuel costs
  - Emissions benefits

Safety Service Patrol Expansion

Mobility

number of 2018 incidents on SSP expansion corridors =	6,501	incidents
average AADT on SSP expansion corridors =	70,000	veh / day
average incident reduction due to SSP (21) =	17%	percent incident duration reduction
average 2018 incident duration* =	32	minutes
projected average incident duration reduction due to SSP =	5.4	minutes
average vehicles benefited during incident duration reduction =	264	veh per incident
average number of vehicles benefited per year =	1,719,153	veh / year
travel time savings due to reduced incident duration =	427	veh hours / day
percent distribution of personal/business vehicles =	90%	
percent distribution of freight vehicles =	10%	
average vehicle occupancy (11) =	1.67	persons / vehicle
passenger hourly value of delay time (13) =	$ 17.81	/ person / hour
commercial hourly hourly value of delay time (13) =	$ 53.69	/ person / hour
average annual benefit of personal/business travel =	$ 4,172,393	
average annual benefit of freight travel =	$ 836,866	
Annual Mobility Benefit (passenger + commercial) =	$ 5,009,258	

Safety

Total 2018 crashes on SSP expansion corridors =	1,393	crashes
average percent VA crashes resulting in fatality =	0.3%	
average percent VA crashes resulting in injury =	33.5%	
average percent VA crashes resulting in PDO/non-injury =	76.7%	non-injury crashes
average expected percentage of incidents that are secondary crashes (8) =	20%	percent
average reduction of secondary crashes due to reduced incident duration (8) =	40%	percent
estimated annual number of secondary crashes resulting in fatality along SSP expansion routes =	1.0	fatality crashes
estimated annual number of secondary crashes resulting in injury along SSP expansion routes =	93	injury crashes
estimated annual number of secondary crashes resulting in non-injury / PDO along SSP expansion routes =	214	non-injury/PDO crashes
estimated reduced annual number of secondary fatality crashes due to SSP expansion =	0.58	fatality crashes
estimated reduced annual average number of secondary injury crashes due to SSP expansion =	56.0	injury crashes
estimated reduced annual average number of secondary PDO/non-injury crashes due to SSP expansion =	128.2	non-injury crashes
Average cost of a fatal collision per person (9) =	$ 4,008,900	
Average cost of a injury collision per person (9) =	$ 124,525	
Average property damage only crash (9) =	$ 7,400	
Annual Safety Benefit =	$ 10,254,122	

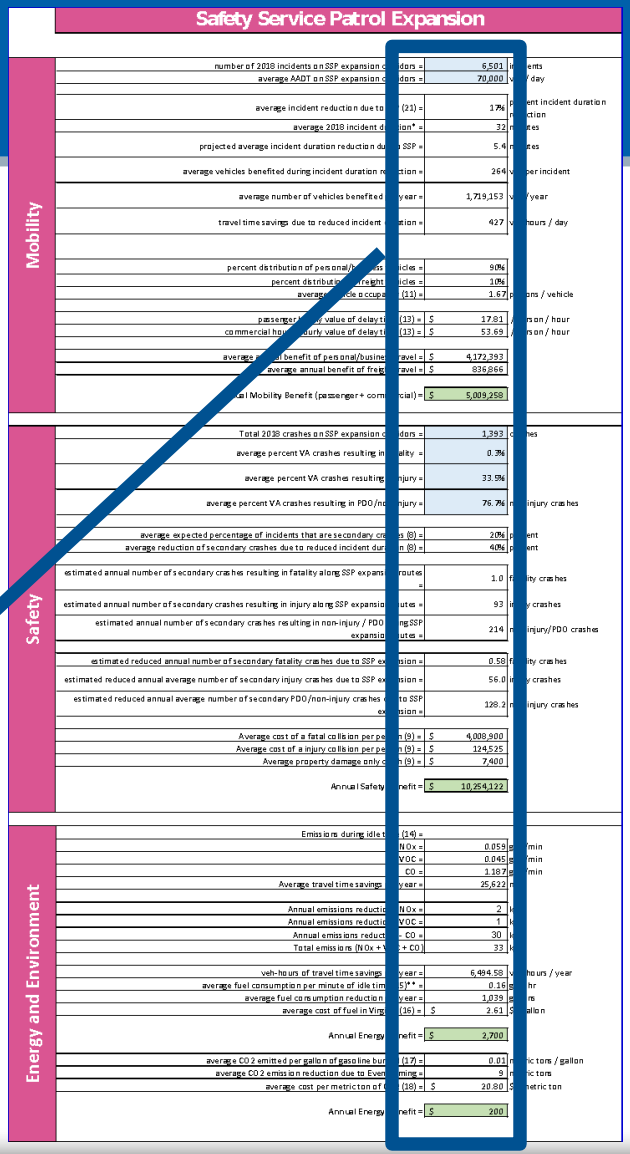
Energy and Environment

Emissions during idle time (14) =		
NOx =	0.059	gms/min
VOC =	0.045	gms/min
CO =	1.187	gms/min
Average travel time savings per year =	25,622	min
Annual emissions reduction - NOx =	2	kg
Annual emissions reduction - VOC =	1	kg
Annual emissions reduction - CO =	30	kg
Total emissions (NOx + VOC + CO)	33	kg
veh-hours of travel time savings per year =	6,494.58	veh-hours / year
average fuel consumption per minute of idle time (15)** =	0.16	gal / hr
average fuel consumption reduction per year =	1,039	gallons
average cost of fuel in Virginia (16) =	$ 2.61	$ / gallon
Annual Energy Benefit =	$ 2,700	
average CO 2 emitted per gallon of gasoline burned (17) =	0.01	metric tons / gallon
average CO 2 emission reduction due to Event Timing =	9	metric tons
average cost per metric ton of CO 2 (18) =	$ 20.80	$ / metric ton
Annual Energy Benefit =	$ 200	

Recommended Operational and Parallel Facilities Improvements

Safety Service Patrol ROI

Capital Cost =	**$3.3-3.6 M**
O&M cost over 10 yrs. =	**$25 M**
Benefit over 10 yrs. =	**$80.1 M**
ROI =	**3.1**



Recommended Operational and Parallel Facilities Improvements – ROI Summary

Proposed Operational Improvement	Estimated Implementation Cost (millions $)	Estimated Annual O&M Cost (thousands $)	Benefit [10 Years] (millions $)	ROI [10 Years]
CCTV Cameras	$14.7 - 16.2	$800 - 1.0	$134.6	**4.7**
Changeable Message Signs	$3.0 - 3.3	$80 - 90	$18.7	**5.2**
Safety Service Patrols	$3.3 - 3.6	$2.5 - 2.8	$88.3	**3.1**
TRIP Towing Program	$2.1 - 2.3	$1.7 - 1.9	$84.5	**7.8**
Towing Program	$1.1 - 1.3	$1.0 - 1.1	$141.4	**12.9**
Variable Speed Limits	$13.4 - 14.8	$2.9 - 3.2	$117.5	**3.0**
Ramp Metering	$5.4 - 5.9	$410 - 510	$71.8	**8.0**
Geofenced Emergency Notifications	$0.1 - 0.2	$100 - 130	$1.4	**1.3**
Advanced Work Zone Technology	$0.9 - 1.0	$450 - 570	$19.3	**3.9**
Misc. Low-Cost Improvements	$4.1 - 4.5	$450 - 570	$98.4	**12.2**
Critical Arterial Signal Improvements	$12.1 - 15.1	$330 - 420	TBD	**TBD**

Next Steps

- Approve corridor-wide operations and arterial upgrades in January
- I-95 Report Executive Summary to CTB in January 2020
- Final Report to CTB and General Assembly in January 2020
- Prioritize remaining projects after completion of the I-64 corridor plan

COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Shannon Valentine
Chairperson

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

December 10, 2019
10:00 a.m.

12. Director's Items
Jennifer Mitchell, Virginia Department of Rail & Public Transportation

This item does not have a presentation associated with it.

COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Shannon Valentine
Chairperson

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

December 10, 2019
10:00 a.m.

13. Commissioner's Items
    Stephen Brich, Virginia Department of Transportation

    This item does not have a presentation associated with it.

COMMONWEALTH of VIRGINIA

Commonwealth Transportation Board

Shannon Valentine
Chairperson

1401 East Broad Street
Richmond, Virginia 23219

(804) 786-2701
Fax: (804) 786-2940

COMMONWEALTH TRANSPORTATION BOARD
WORKSHOP AGENDA

VDOT Central Auditorium
1221 East Broad Street
Richmond, Virginia 23219

December 10, 2019
10:00 a.m.

14. Secretary's Items
Shannon Valentine, Secretary of Transportation

This item does not have a presentation associated with it.