COMMONWEALTH of VIRGINIA
Office of the
SECRETARY of TRANSPORTATION

VTrans Freight Element: Webinar 1

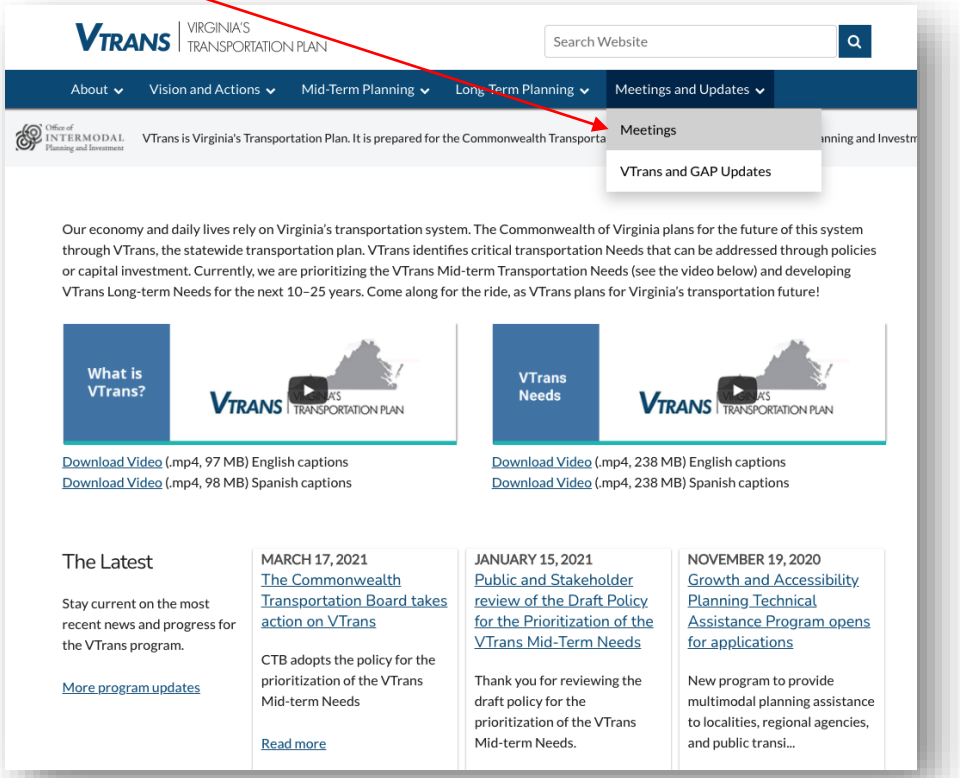
March 24, 2021

Purpose and Discussion Items

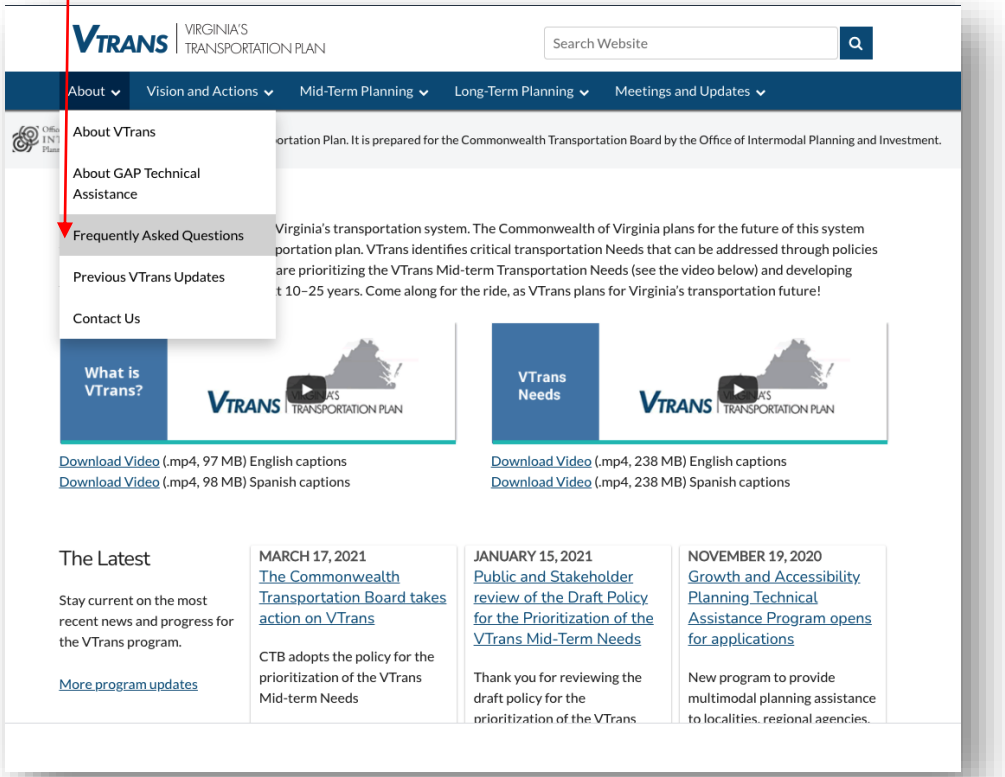
- **Resources**
- **Context and Background**
- **Purpose of the Webinar**
- **Overview - Freight in State Transportation Planning**
- **Designation of Critical Urban and Rural Freight Corridors**
- **Identification of Freight Issues**
- **Next Steps**

RESOURCES

- **Meetings Page contains information and materials presented at this webinar**



- **Frequently Asked Questions page addresses five (5) questions related to the VTrans Freight Element**

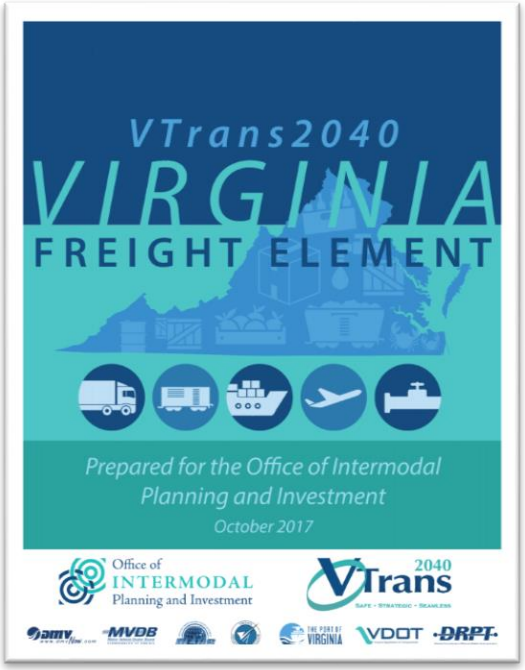


CONTEXT AND BACKGROUND

- **OIPI is developing the VTrans Freight Element to meet requirements for 49 U.S.C. 70202 FAST Act State Freight Plans.**
  - States that receives funding under the National Highway Freight Program (NHFP) are required to develop a State Freight Plan that provides a comprehensive plan for the immediate and long-range planning activities and investments of the State with respect to freight.
  - The freight plan may be developed separate from or incorporated into the Long-Range Statewide Transportation Plans required by 23 U.S.C. 135.
  - The requirement is to update Freight Plan "not less frequently than once every 5 years."

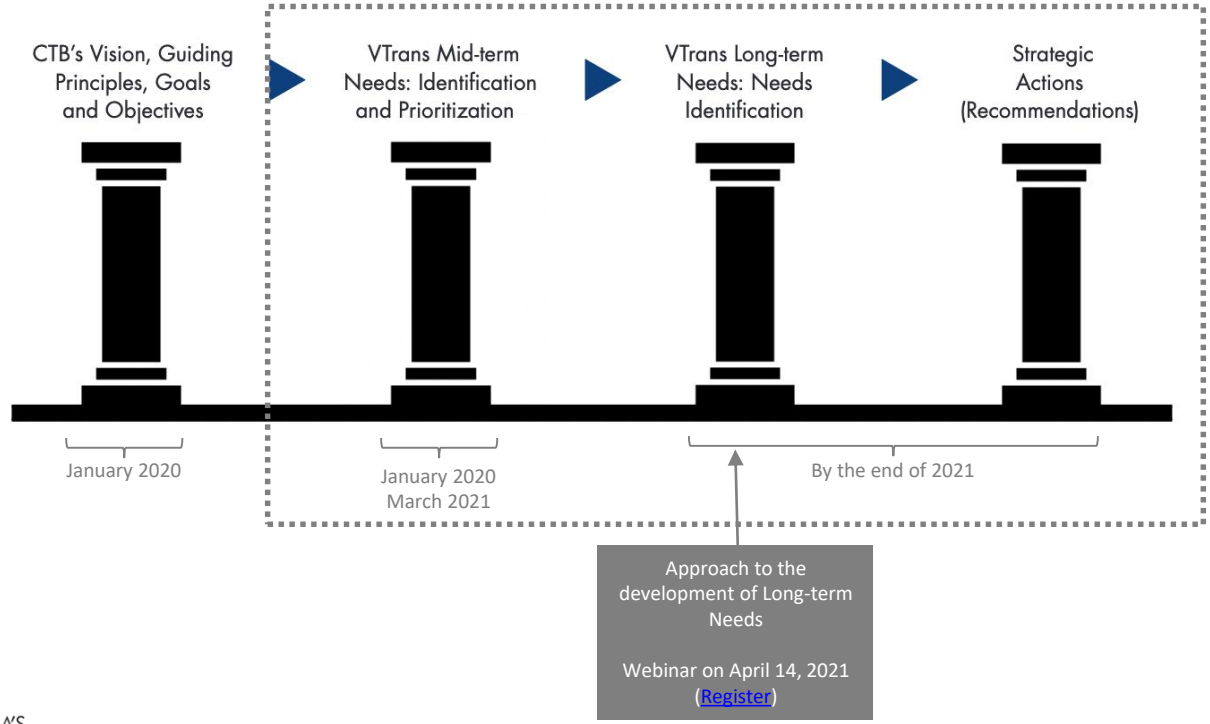
Photo credit: Virginia Department of Transportation

- **In Virginia, Freight Plan requirements are addressed by VTrans - Virginia's Transportation Plan.**
  - Virginia's Freight Plan/Element was updated last updated in 2017.
  - The intent is to update Virginia's Freight Plan/Element by the end of 2021.



VTrans 2040 Freight Element

- **VTrans has four major elements:**

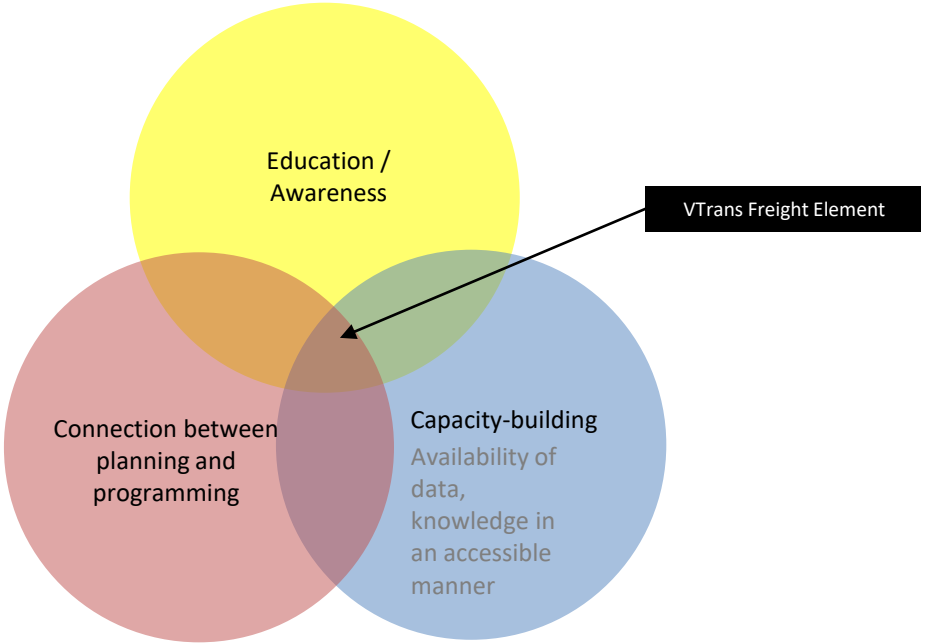


VTrans Freight Element will potentially cover all three elements.

- **This VTrans Element is expected to further advance the following transportation Goals A and C established by the Commonwealth Transportation Board**
  - **Goal A - Economic Competitiveness and Prosperity**
  - Goal B: Accessible and Connected Places
  - **Goal C: Safety for All Users**
  - Goal D: Proactive System Management
  - Goal E – Healthy Communities and Sustainable Transportation Communities

Photo credit: Virginia Department of Transportation

- **Beyond meeting requirements, a statewide Freight Plan can serve a wide range of purposes.**



1. **Multimodal / Intermodal Analysis**
   - More work needed on the rail and air modes of transportation
     - Incentive mechanisms are different for the private sector
     - Limited and proprietary datasets for rail and air transportation make analysis more challenging

2. **Freight Element is integrated in VTrans**
   - Benefits from and potentially informs the Board-adopted policies for VTrans Mid-Term Needs Identification and Prioritization
   - Informs VTrans Strategic Actions to be submitted to the General Assembly and the Office of the Governor

3. **Data-driven, transparent, and replicable process**
   - Explanatory analysis: Explain the underlying causes of issues
   - Exploratory analysis: Analyze different datasets to explore issues, approaches, and potential solutions that can inform the policy

Photo credit: Virginia Department of Transportation

Purpose of the Webinar

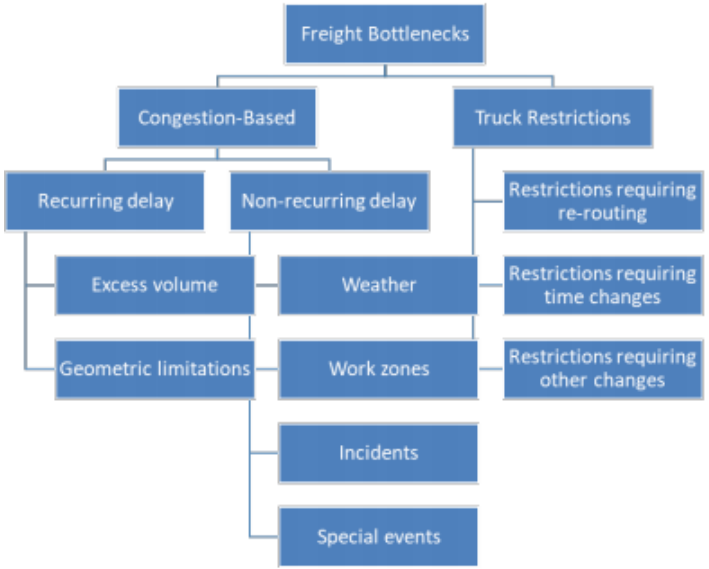
- **This is first of two or three freight planning related webinars.**
  - **March 24:** Overview, purpose, and initial direction
  - **May:** Recommendations and strategies
  - **June/July:** As needed

OVERVIEW OF STATE FREIGHT PLANS

- **Case Study: Purpose of linking Freight Plan to State Transportation Plan**
  - Strengthen and reinforce the information for agencies and decisionmakers
  - STIP and Investment Plans have significant implications for implementing strategies outlined in the State Transportation Plans or other modal plans
  - Types of Linkages
    - Goals
    - Strategies, projects, and major initiatives
    - Investments
    - Data
    - Forecasts

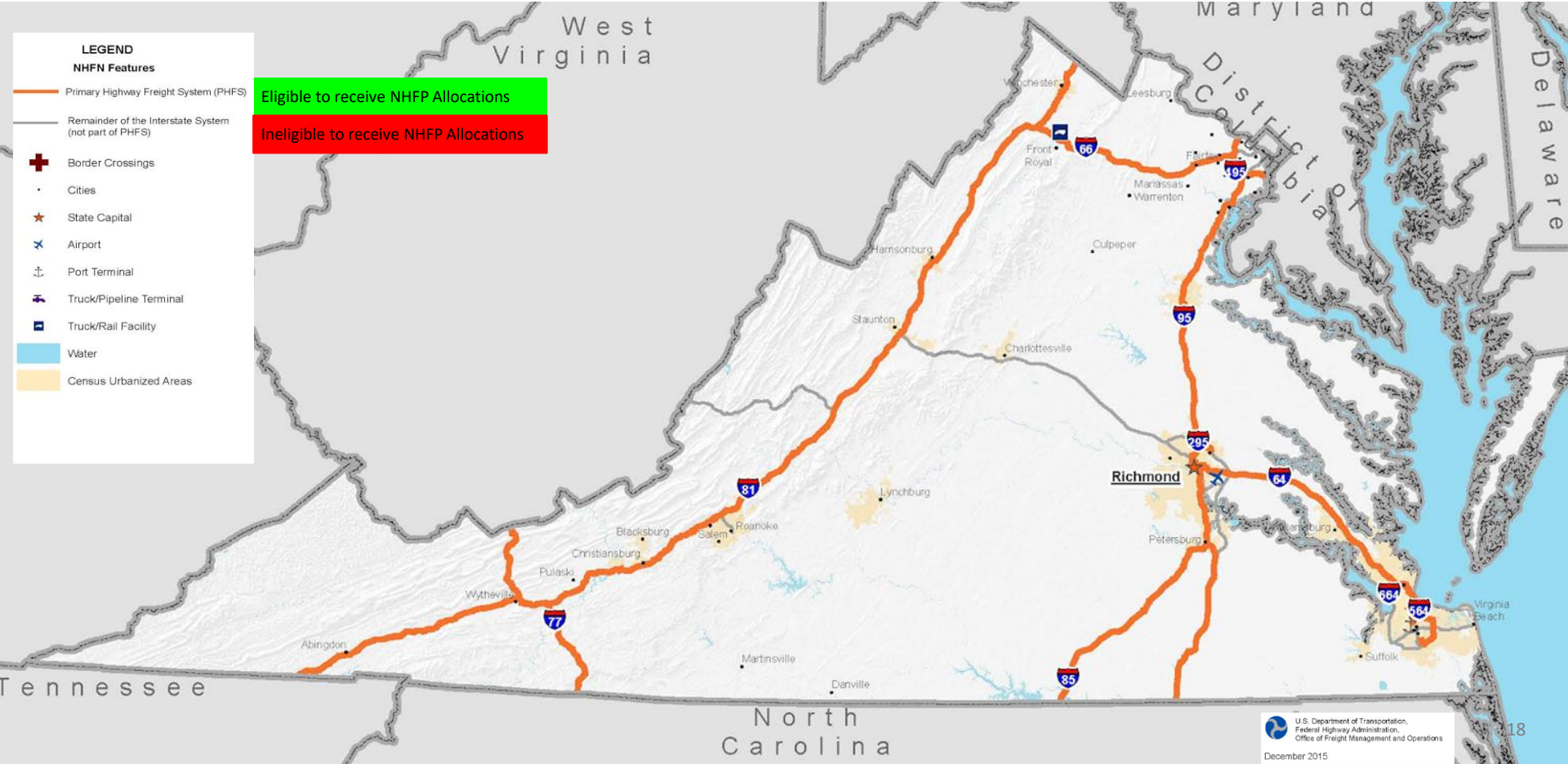
- **Case Study: Performance Measures**
  - Idaho
    - High truck crash rate
  - Illinois
    - Truck Travel Time Reliability (TTTR)
    - Freight hours of delay
    - Fatalities and serious injuries involving freight vehicles
    - Annual average daily traffic (AADT)
  - Kentucky
    - Congestion
    - Safety
    - Asset management data and freight activity
  - Michigan
    - Commercial Annual Average Daily Traffic (CAADT)
  - Minnesota
    - HCAADT (Heavy Commercial Average Annual Daily Truck Traffic)
    - Crash rate reduction
    - Crash Location
    - Truck Parking Utilization
    - Truck Travel Time Reliability (TTTR)
  - North Carolina
    - Truck volume and percent share
    - Percent of North Carolina Primary Highway Freight Network with ITS infrastructure
  - New Hampshire
    - AADTT (Average Annual Daily Truck Traffic)
  - Oregon
    - Truck Freight Bottleneck (combines delay and reliability)
  - Tennessee
    - Commercial vehicles utilizing electronic bypass technology at weigh stations
  - Texas
    - Percent of weigh stations on Texas Highway Freight Network with Weigh in Motion
  - West Virginia
    - Temporary Travel Time Monitoring (TTTM)
  - Wyoming
    - Truck Travel Time Reliability (TTTR)

- **FHWA's requirements related to Truck Freight Bottlenecks**
  - 23 CFR 490.101: National Performance Management Measures require identification of Truck Freight Bottlenecks
    - Every four years, identify and update a list of truck freight bottlenecks
    - Every two years, report on progress
    - Additional reporting in case of failure to make significant progress on freight reliability
  - FHWA's Definition of Truck Freight Bottlenecks:
    - "a segment of roadway identified by the State DOT as having **constraints that cause a significant impact on freight mobility and reliability**. Bottlenecks may include highway sections that do not meet thresholds for freight reliability identified in 23 CFR §490.613 or other locations identified by the State DOT.
    - Causes may include **recurring congestion**, that **delays freight trucks, or roadway features that impact truck movements**, such as steep grades, substandard vertical or horizontal clearances, weight restrictions, delays at border crossings or terminals, or truck operating restrictions."



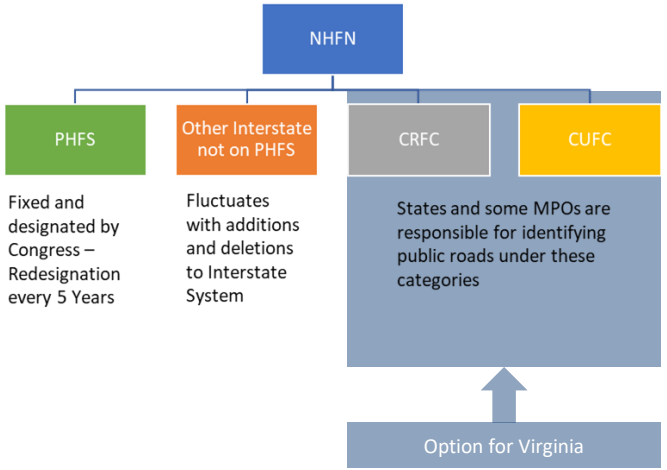
CUFC AND CRFC DESIGNATIONS

VTrans Freight Element I CUFC and CRFC Designation



- **The State and MPOs have the option to designate roadways as Critical Urban and Rural Freight Corridors (CUFC, CRFC)**
  - Urban: 83.35 centerline miles or ~65 remaining centerline miles
  - Rural: 166.69 centerline miles

- **Noteworthy Items**
  - CUFC and CRFC are voluntary designations
  - In Virginia NHFP funds are allocated to projects selected via SMART SCALE and other established processes therefore **CUFC and CRFC designations do not impact allocation of dollars**
  - The purpose to gain more programming flexibility for allocation of dollars that are allocated through SMART SCALE and other established processes
  - In 2017, the National Capital Region Transportation Planning Board approved a resolution to designate ~18 miles of CUFCs in the Virginia portion of the region



CUFC and CRFC Designation I Criteria, Roles and Responsibilities

Type of Corridor and Criteria			State Role	MPO Role
Critical Rural Freight Corridor (CRFC)		CUFC must be on a public road and meet **one or more** of 4 elements: 1. Connects an intermodal facility to: (a) the PHFS; (b) the Interstate System; (c) an intermodal freight facility; 2. Is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement 3. Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land 4. Is important to the movement of freight within the region, as determined by the MPO or the State	Lead	-
Critical Urban Freight Corridor (CUFC)	MPOs < 500,000 population	CRFC must be on a public road and meet **one or more** of 7 elements: 1. Is a rural principal arterial roadway and has a minimum of 25% of the AADT measured in passenger vehicle equivalent units from trucks (FHWA class 8 to 13) 2. Provides access to energy exploration, development, installation, or production areas 3. Connects the PHFS or the Interstate System to facilities that handle more than: 50,000 TEUs per year; or 500,000 tons per year of bulk commodities 4. Provides access to: grain elevator, agricultural facility, mining facility, forestry facility, or intermodal facility 5. Connects to an international port of entry 6. Provides access to significant air, rail, water, or other freight facilities in the State 7. Is determined by the State to be vital to improving the efficient movement of freight of importance to the economy of the State	Lead	Consulted with
	MPOs > 500,000 population		Consulted with	Lead

- **Approach**
  - Provide maximum programming flexibility to the State
  - Connects to FHWA's Primary Highway Freight System (PHFS) or to another CUFC or CRFC
  - Is a designated Corridor of Statewide Significance (CoSS) or provides connectivity to one
  - Carries significant tonnage
  - Maximizes utilization of available miles
- **Under consideration**
  - This map shows under-consideration designation.
- **Next Steps**
  - Continue to coordinate with TPB, RRTPO, and HRTPO
  - Designate CUFC and CRFC in time for the FY22 SYIP Update

Under consideration mileage for CUFC and CRFC

	Rural	Urban	Total
Culpeper	99.8	15.2	114.9
Hampton Roads	1.5	48.4	49.9
Lynchburg	2.8		2.8
Northern Virginia	0.8	9.1	9.9
Richmond	54.2	33.9	88.1
Salem		4.9	4.9
Staunton	149.0	4.8	153.7
Total	308.0	116.2	424.2
Available	333.4	130.0	463.4

Please note that:

- These mileage are in addition to Primary Highway Freight System (PHFS) designated by FHWA.
- Under consideration mileage within the TPB, RRTPO, Tri-Cities TPO, and HRTPO areas is shown for reference only and is used as a set-aside. State does not have a role in the designation of CUFCs within those three. Urbanized areas.

IDENTIFICATION OF FREIGHT-SPECIFIC ISSUES

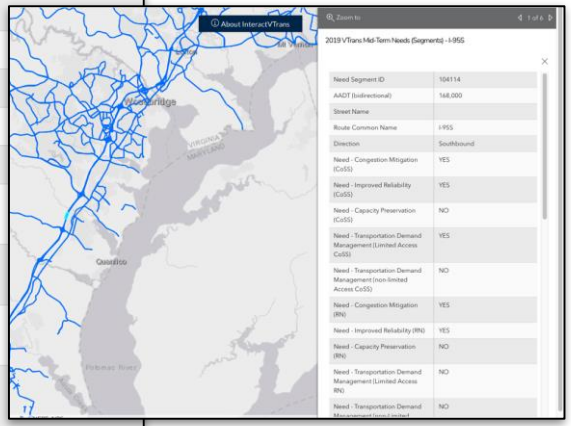
- **Analysis of freight issues relies on both a multimodal and an intermodal approach**
- **This presentation focuses on truck and commodity flow related aspects**
- **Purpose**
  - Gather initial feedback
  - "Crowdsource" ideas, opportunities, and challenges based on this initial analysis
- **Caveats**
  - This initial analysis is for discussion only and may contain errors and omissions. For any discrepancies, please share with OIPI's Statewide Transportation Planning (STP) Team.

Photo credit: Virginia Department of Transportation

- **Individual measures are important but are likely to provide an incomplete picture**

- **We are utilizing the approach deployed for the development of the VTrans Mid-term Needs**
  - We will focus on interactions between measures. Examples:
    - Locations with truck **congestion/reliability issues** and locations with **high number of crashes** involving trucks
    - Locations with known **vertical geometry challenges** and locations with **truck congestion/reliability issues**

Need Segment ID	104114
AADT (bidirectional)	168,000
Street Name	
Route Common Name	I-95S
Direction	Southbound
Need - Congestion Mitigation (CoSS)	YES
Need - Improved Reliability (CoSS)	YES
Need - Capacity Preservation (CoSS)	NO
Need - Transportation Demand Management (Limited Access CoSS)	YES
Need - Transportation Demand Management (non-limited Access CoSS)	NO
Need - Congestion Mitigation (RN)	YES
Need - Improved Reliability (RN)	YES
Need - Capacity Preservation (RN)	NO
Need - Transportation Demand Management (Limited Access RN)	NO
Need - Transportation Demand	NO



- **We are also developing different data points and measures to identify locations where truck- or freight-specific issues may exist**
- **Please utilize this map to view initial results.**
- **Please share ideas either based on your needs, experience, or familiarity with work in other places**

A partial listing of data points under development and for discussion

Category	Measure
Safety	Number of Truck-involved Crashes
	Number of Truck-involved Crashes with Fatalities and Serious Injuries
	Rate of Truck-involved Crashes (under development)
	Rate of Truck-involved Crashes with Fatalities and Serious Injuries (under development)
Commodity Flows	Commodity Flow by Truck - Volume
	Commodity Flow by Truck – Value
	Commodity Flow by Rail (under development)
	Commodity Flow at the Port of Virginia and Airports (under development)
Congestion and Reliability	Cumulative Truck Delay
	Level of Truck Travel Time Reliability (LOTTTR)
	Truck Planning Time Index
Restrictions and Challenges	Truck Operating Restrictions (i.e. facility, lane or vehicle type restrictions)
	Vertical and Horizontal Clearance Issues (under development)
	Over-height, Over-weight, and Over-width Restrictions (under development)
Truck Parking	Supply of truck parking
	Truck parking gap - supply and (estimated) demand (under development)

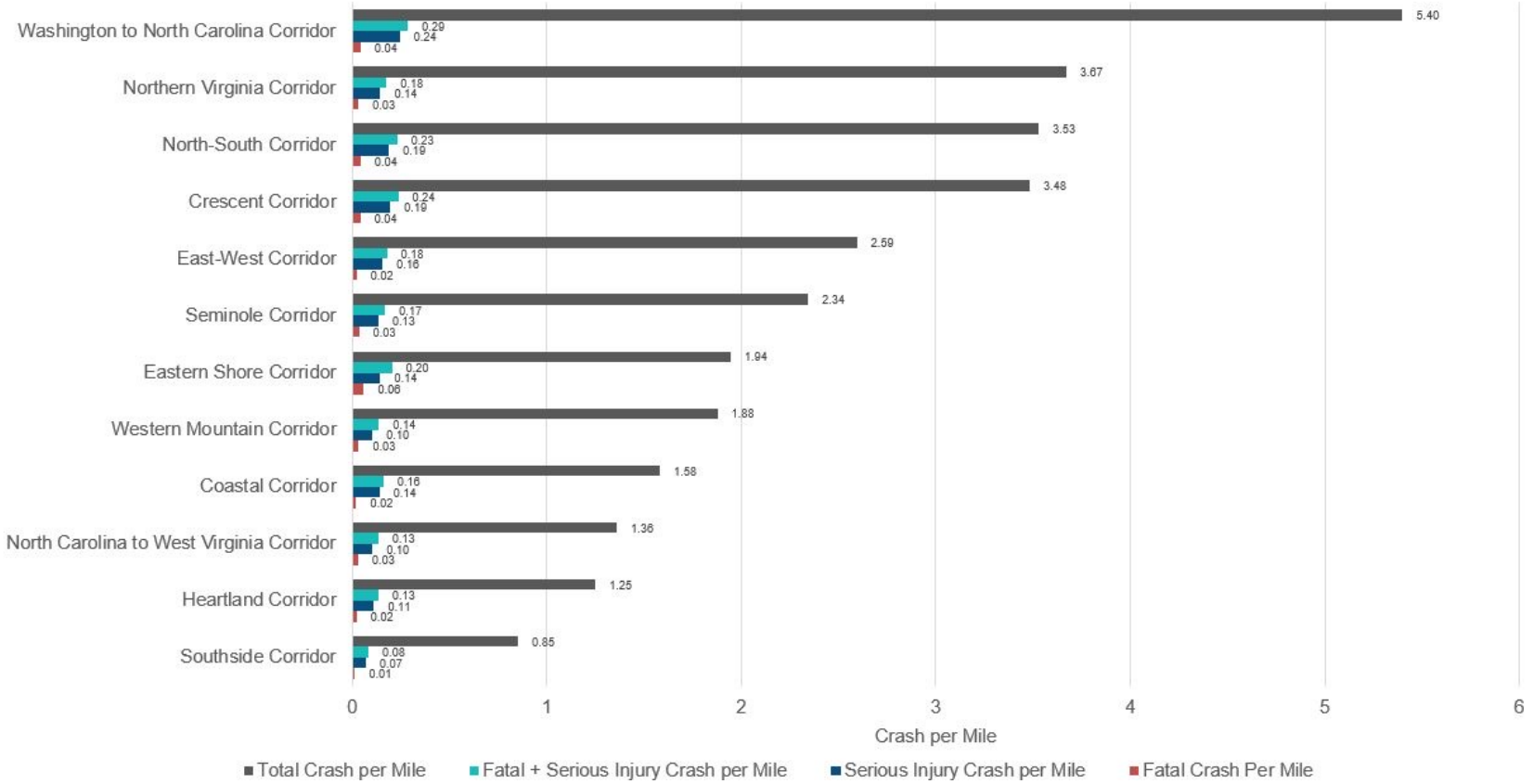
- **Noteworthy Items**
  - Truck-involved Crash ≠ Truck at fault. The term, "Truck-related" only implies that a truck was involved, not necessarily at-fault, in a crash.
  - Number of truck-involved crashes are very small so this data should be seen **along with** all crashes, not in isolation.

Measure	Source	Year of Analysis	Steps
Number of Truck-involved Crashes	Virginia Department of Transportation (VDOT) – Expanded definition of Large Truck	2015 - 2019	1. Retained truck-involved crashes 2. Joined crashes to network by route name and milepost 3. Spatially joined crashes not matched by route name and milepost 4. Summarized statistics at segment level 5. Calculated crashes per roadway directional mile
Number of Truck-involved Crashes with Fatalities and Serious Injuries			
Rate of Truck-involved Crashes	Under Development		
Rate of Truck-involved Crashes with Fatalities and Serious Injuries			

- **Noteworthy Items**
  - Truck-involved Crash ≠ Truck at fault. The term, "Truck-related" only implies that a truck was involved, not necessarily at-fault, in a crash.
  - Number of truck-involved crashes are very small so this data should be seen **along with** all crashes, not in isolation.

VDOT District / Crash	All Crashes			"Truck-involved" Crashes			Share of "Truck-Involved" Crashes		
	Total	Fatal	Serious Injury	Total	Fatal	Serious Injury	Total	Fatal	Serious Injury
Bristol	26,872	262	1,943	2,274	34	182	8.46%	12.98%	9.37%
Culpeper	35,298	286	2,039	2,676	32	169	7.58%	11.19%	8.29%
Fredericksburg	40,617	310	2,170	3,338	40	175	8.22%	12.90%	8.06%
Hampton Roads	136,786	720	7,238	8,358	88	428	6.11%	12.22%	5.91%
Lynchburg	30,798	340	2,192	1,874	45	155	6.08%	13.24%	7.07%
Northern Virginia	148,790	402	4,823	11,176	46	360	7.51%	11.44%	7.46%
Richmond	123,385	680	5,433	9,316	78	461	7.55%	11.47%	8.49%
Salem	53,784	421	3,128	4,648	61	279	8.64%	14.49%	8.92%
Staunton	45,415	348	2,419	4,342	58	229	9.56%	16.67%	9.47%
Statewide	**641,745**	**3,769**	**31,385**	**48,002**	**482**	**2,438**	**7.48%**	**12.79%**	**7.77%**

IDENTIFICATION OF FREIGHT ISSUES I TRUCK SAFETY (BY COSS)



- **Total Crashes per 100,000 directional miles by Cause or Category**
  - Causes/categories listed below are reported on crash reports and are likely to have errors and inconsistencies.
  - Causes/categories are not mutually exclusive.

Corridor of Statewide Significance (CoSS)*	Alcohol Related	Poor Light Condition	Pedestrian Related	Speed Related	Adverse Weather Related	Workzone Related	Unbelted Related	Bike Related
Coastal Corridor (US-17)	3.9	35.3	1.0	24.7	21.6	9.6	7.3	0.0
Crescent Corridor (I-81)	6.1	117.9	1.5	101.9	75.3	18.9	11.8	0.5
East-West Corridor (I-64)	4.4	52.6	1.6	29.1	30.1	5.0	6.9	0.0
Eastern Shore Corridor (US-13)	5.5	65.0	1.0	80.5	40.7	28.0	6.9	0.2
Heartland Corridor (US-460)	2.4	28.8	0.7	20.9	23.6	5.1	5.7	0.2
North-South Corridor (RT-234)	3.5	40.0	1.6	28.3	25.1	5.3	6.4	0.0
North Carolina to West Virginia Corridor (US-220)	6.8	95.8	1.1	108.2	41.8	67.3	6.5	0.0
Northern Virginia Corridor (I-66)	11.1	81.2	3.4	45.3	46.1	9.4	11.1	0.0
Seminole Corridor (US-29)	6.1	55.4	1.1	30.4	34.0	14.4	8.4	0.3
Southside Corridor (US-58)	2.0	21.1	0.4	13.6	14.0	2.6	4.3	0.1
Washington to North Carolina Corridor (I-95)	11.5	181.8	2.4	193.2	85.8	36.2	12.1	0.3
Western Mountain Corridor (I-77)	2.2	63.6	0.4	60.6	45.8	9.6	8.1	0.0

* Includes other roadway components. For example, Washington to North Carolina Corridor includes I-95, I-85, US-1, I-195, I-295, I-395, I-495, US-301, and Route 288. Please refer to more details here.

- **Fatal crashes per 100,000 directional miles by Cause or Category**
  - Note: Causes/categories listed below are reported on crash reports and are likely to have errors and inconsistencies.
  - Note: Causes/categories are not mutually exclusive as multiple causes can also be attributed to a crash.

CoSS	Alcohol Related	Poor Light Condition	Pedestrian Related	Speed Related	Adverse Weather Related	Workzone Related	Unbelted Related	Bike Related
Coastal Corridor (US-17)	0.21	1.25	0.21	1.46	1.04	0.21	0.62	0.00
Crescent Corridor (I-81)	0.69	11.15	0.69	12.37	8.63	0.92	2.14	0.31
East-West Corridor (I-64)	0.94	7.83	1.57	4.70	3.45	1.25	2.82	0.00
Eastern Shore Corridor (US-13)	0.13	3.51	0.13	4.02	1.75	1.82	1.10	0.00
Heartland Corridor (US-460)	0.11	1.37	0.11	2.11	1.37	0.00	0.95	0.00
North-South Corridor (RT-234)	0.00	3.73	0.80	2.13	2.67	0.27	0.00	0.00
North Carolina to West Virginia Corridor (US-220)	0.45	5.19	1.13	6.55	1.36	3.16	1.36	0.00
Northern Virginia Corridor (I-66)	0.86	8.55	0.00	5.13	2.56	0.86	4.27	0.00
Seminole Corridor (US-29)	0.83	3.18	0.14	2.35	1.11	0.28	1.11	0.00
Southside Corridor (US-58)	0.16	1.04	0.08	1.36	0.56	0.08	0.64	0.00
Washington to North Carolina Corridor (I-95)	1.34	11.61	0.94	11.28	5.71	2.01	1.75	0.13
Western Mountain Corridor (I-77)	1.48	23.65	0.37	24.02	17.00	1.48	3.33	0.00

* Includes other roadway components. For example, Washington to North Carolina Corridor includes I-95, I-85, US-1, I-195, I-295, I-395, I-495, US-301, and Route 288. Please refer to more details here.

- **Serious injury crashes per 100,000 directional miles by Cause or Category**
  - Note: Causes/categories listed below are reported on crash reports and are likely to have errors and inconsistencies.
  - Note: Causes/categories are not mutually exclusive as multiple causes can also be attributed to a crash.

CoSS	Alcohol Related	Poor Light Condition	Pedestrian Related	Speed Related	Adverse Weather Related	Workzone Related	Unbelted Related	Bike Related
Coastal Corridor (US-17)	1.87	10.18	0.42	6.86	4.99	0.62	4.57	0.00
Crescent Corridor (I-81)	2.67	44.53	0.69	39.34	30.86	5.65	6.03	0.08
East-West Corridor (I-64)	1.57	10.65	0.63	8.46	6.58	2.19	3.76	0.00
Eastern Shore Corridor (US-13)	1.69	17.20	0.32	23.24	8.37	11.16	3.37	0.13
Heartland Corridor (US-460)	0.95	7.37	0.32	5.69	4.11	1.05	2.21	0.21
North-South Corridor (RT-234)	1.33	9.60	0.53	8.27	6.40	1.07	2.93	0.00
North Carolina to West Virginia Corridor (US-220)	2.26	25.75	0.45	32.75	11.07	23.26	2.94	0.00
Northern Virginia Corridor (I-66)	6.84	17.09	1.71	11.96	10.25	2.56	3.42	0.00
Seminole Corridor (US-29)	0.55	8.98	0.83	4.42	4.56	2.62	3.87	0.14
Southside Corridor (US-58)	0.24	3.75	0.16	3.51	2.31	0.56	1.68	0.00
Washington to North Carolina Corridor (I-95)	3.96	56.85	1.14	57.79	26.85	11.14	5.37	0.00
Western Mountain Corridor (I-77)	1.11	29.57	0.37	29.93	22.54	3.33	4.43	0.00

* Includes other roadway components. For example, Washington to North Carolina Corridor includes I-95, I-85, US-1, I-195, I-295, I-395, I-495, US-301, and Route 288. Please refer to more details here.

- **REMINDER: Individual measures are important but are likely to provide an incomplete picture**

- **Our next steps are to:**

  - Develop crash rates

  - Overlay these locations with those with VTrans Mid-term Safety Needs

  - Identify potential causes and develop recommendations for VTrans Freight Element

- **Noteworthy Items**
  - Transearch data is based on estimates, and the method of categorizing internal and external flows might have to be revisited

Measure	Source	Year of Analysis	Steps
Commodity Flow by Truck - Volume	Transearch	2017, 2030, 2045	1. Retained "Truck" mode groups. 2. Linked trips to highway routes using first and last node lookup table.
Commodity Flow by Truck - Value			
Commodity Flow by Rail			
Other Port and Airport facility-level data	Port of Virginia / Federal Aviation Administration	TBD	

- **Caution is recommended while viewing and citing these numbers as this data may not show trip chains.**
  - For example, overseas trade movements will the U.S. port as the origin point for import shipments.
  - Similarly, cargo delivered to a facility in Virginia with a destination outside the state may be tagged as having a destination in Virginia.
- **In short, there are limitations, but numbers are generally indicative of activity on Virginia's roadways.**

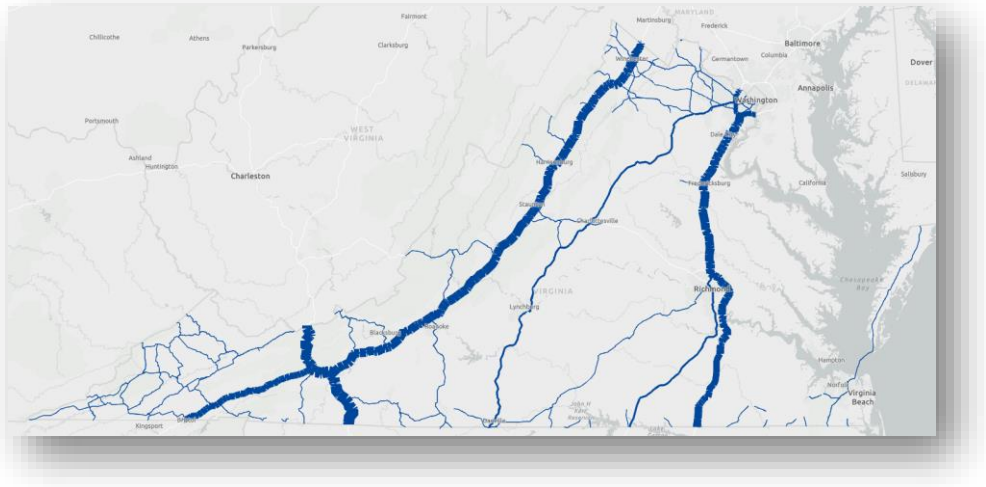
Commodity Flow - Tonnage in 2017

		Origin	
		Internal	External
Destination	Internal	12%	21%
	External	16%	51%

Commodity Flow – Projected Tonnage Growth

	Total	Internal-to-Internal	Internal-to-External	External-to-Internal	External-to-External
2030	31%	37%	33%	24%	30%
2045	90%	105%	92%	83%	88%

- **REMINDER: Individual measures are important but are likely to provide an incomplete picture**
- **Our next steps are to:**
  - Analyze commodity flow via other modes
  - Existing and potential opportunities for internal modal connections
  - Utilize this data to analyze other issues (e.g. Safety)



- **Noteworthy Items**
  - Trucks have different operating characteristics – heavier loads, more impacted by roadway geometry, different operating hours.

Measure	Source	Year of Analysis	Steps
Total Cumulative Truck Delay	National Performance Management Research Data Set (NPMRDS)	2017, 2018, 2019	If 2% or higher weighted weekday and weekend hours (6 am – 8 pm) have average truck speed < 75% of truck reference speed or 65 mph: Calculate difference between reference travel time and travel time, multiplied by truck AADT, normalized by segment length, and ranked on a seven-point scale
Truck Travel Time Reliability (Based on Level Truck Travel Time Reliability or LOTTR)			Weighted sum of weekday and weekend hours (6 am – 8 pm) where the 80th percentile / 50th percentile truck travel time exceeds 1.3, multiplied by truck AADT, ranked on a seven-point scale
Truck Travel Time (Based on Planning Time Index or PTI)			Weighted sum of weekday and weekend hours (6 am – 8 pm) where the 95th percentile / 50th percentile truck travel time exceeds 1.3

- **Noteworthy Items**
  - One way to establish Virgnia's "Truck Freight Bottlenecks" is to utilize the **intersection of congestion and reliability** as seen below.

Miles		Directional Mileage with Reliability Issue (LOTTTR)					
		Very High	High	Medium	Low	None	Total
Directional Mileage with Congestion Issue (Cumulative Truck Delay by Truck AADT)	Very High	57	8	5	10	126	207
	High	15	35	12	36	314	412
	Medium	7	35	15	61	294	412
	Low	7	93	138	1,129	1,722	3,088
	None	0	2	2	53	194,193	194,249
	Total	86	172	172	1,290	196,648	198,368

- **REMINDER: Individual measures are important but are likely to provide an incomplete picture**

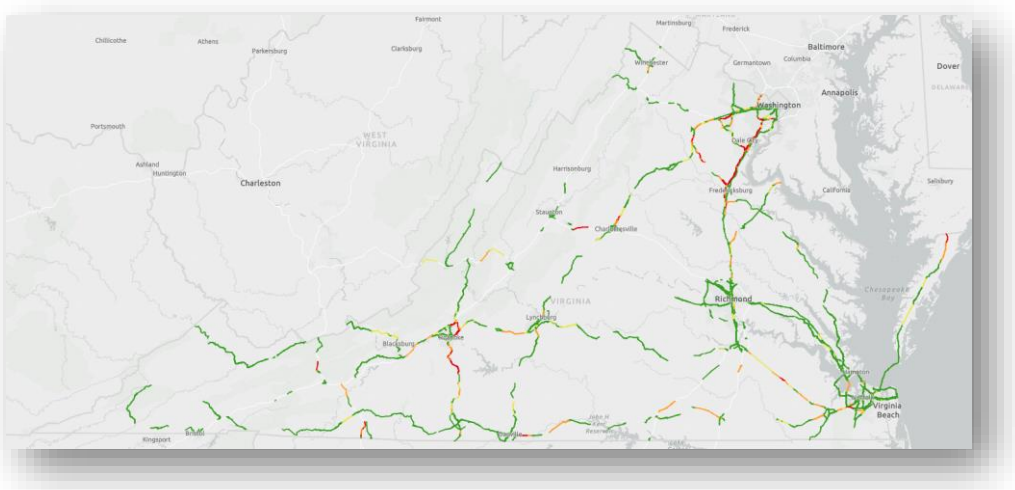
- **Noteworthy Observations**

  - Compared to mix of passenger and heavy vehicles, Very High Truck Congestion, as measured by Cumulative Truck Delay, is present in more construction districts.

  - However, severe Truck Travel Time Reliability is more limited than that for a mix of passenger and heavy vehicles.

- **Next Steps**

  - Evaluate congestion and reliability issues considering truck safety and commodity flows



- **Noteworthy Items**
  - Restrictions are often placed in response to safety and other concerns and therefore, are not necessarily constraining factors.
  - Also, restrictions are often placed on roadways that are not expected to safely serve certain functions.

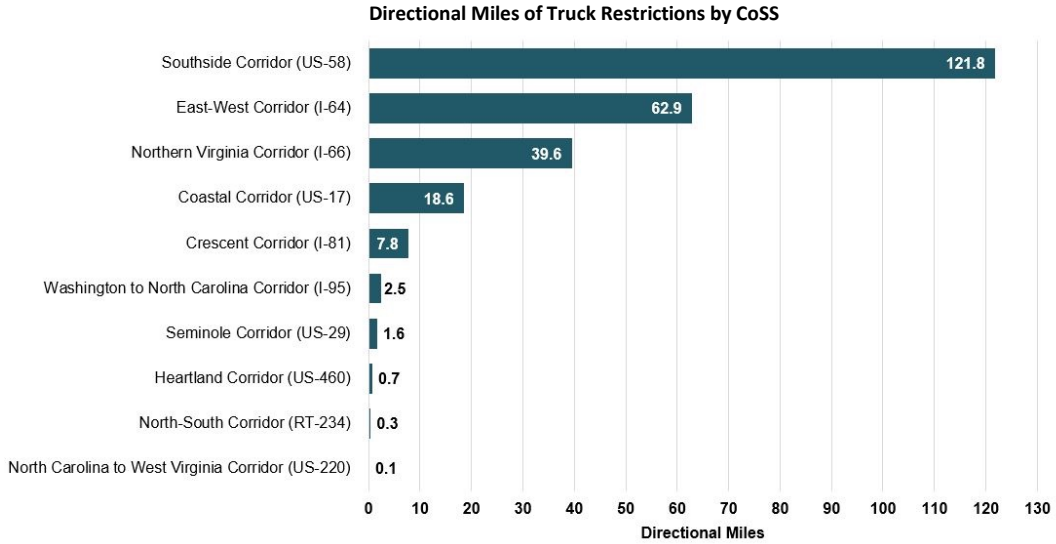
Measure	Source	Year of Analysis	Steps
Truck Operating Restrictions (i.e. facility, lane or vehicle type restrictions)	Virginia Department of Transportation (VDOT)	2020	Group restrictions in the following categories: 1. Axles/tires 2. Height 3. Length 4. Through trucks 5. Vehicle type 6. Weight 7. Width
Vertical and Horizontal Clearance Issues			TBD
Over-height, Over-weight, and Over-width Restrictions			

- **Noteworthy Items**
  - Restrictions are often placed in response to safety and other concerns and therefore, are not necessarily constraining factors.
  - Also, restrictions are often placed on roadways that are not expected to safely serve certain functions.

Construction District	Axles / Tires	Height	Length	Through Trucks	Vehicle Type	Weight	Width	Total*
Bristol	-	-	286.9	74.8	249.9	-	-	539.6
Culpeper	-	-	30.3	71.7	130.1	-	-	232
Fredericksburg	-	1.8	1.5	184.4	-	-	-	187.7
Hampton Roads	-	-	-	78	48.1	-	1.4	127.6
Lynchburg	-	1.4	108.1	176.4	136.9	-	-	422.8
Northern Virginia	22.6	-	77.1	527.4	64.8	22.9	-	714.8
Richmond	-	-	10.4	339	-	-	-	349.4
Salem	-	-	101	195.5	841	0.5	-	1,120.50
Staunton	-	2.9	114	143	240.2	-	2.9	495

* Total may not equal the sum of numbers in the row because some roads have more than one restriction type.

- **Noteworthy Items**
  - Each CoSS also includes parallel secondary facility. For example, Route 1 is included as part of the Washington to North Carolina Corridor.
- **Next Steps**
  - Analyze roadway geometry
  - Overlay restrictions and geometric challenges with truck safety, congestion, reliability, and commodity flow data



- **Noteworthy Items**
  - Truck parking is one of the emerging areas that will require substantial work in the coming months.
  - In Virginia, most of the available and documented truck parking is provided by private vendors.
  - Out goal is utilize this parking supply data to identify **Truck Parking Gaps**.

Measure	Truck Parking Spaces	Number of Facilities
Private	6,787	112
Public	782	37
TOTAL	7,569	149

Next Steps

- **Request: Please provide feedback by April 9**
- **For OIPI Statewide Transportation Planning (STP) Team**
  - Gather feedback on the initial results
  - Calibrate and proceed with next steps

OIPI-STP Points of Contact

- **For questions and clarifications, please contact Katie Schwing or Chris Wichman:**

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