

VTRANS POLICY GUIDE

- Vision, Goals, Objectives and Guiding Principles
- VTrans Travel Markets
- Identification and Prioritization of the Mid-term Transportation Needs
- Development and Monitoring of the Long-term Risk and Opportunity Register



VIRGINIA COMMONWEALTH

TRANSPORTATION BOARD MEMBERS

The Hon. Shannon Valentine

Secretary of Transportation, Chair

Jerry L. Stinson

Bristol District

Alison DeTuncq

Culpeper District

Cedric Bernard Rucker

Fredericksburg District

John Malbon

Hampton Roads District

Bert Dodson Jr.

Lynchburg District

Mary H. Hynes

Northern Virginia District

Carlos M. Brown

Richmond District

Raymond D. Smoot Jr.

Salem District

Mark H. Merrill

Staunton District

W. Sheppard Miller III

At-Large Urban

E. Scott Kasprowicz

At-Large Urban

Marty Williams

At-Large Urban

Stephen A. Johnsen

At-Large Rural

Greg Yates

At-Large Rural

Stephen C. Brich, P.E.

Commissioner, Virginia
Department of Transportation

Jennifer Mitchell

Director, Department of Rail
and Public Transportation

FOR MORE INFORMATION

Visit vtrans.org for additional details, updates, and documentation about the VTrans development process.

Please contact the VTrans Team at the Office of Intermodal Planning and Investment to request an alternative format.

VTrans, Office of Intermodal Planning and Investment
1221 E. Broad Street, 2nd Floor, East Wing
Richmond, VA 23219
comment@vtrans.org

Top Left Cover Photo: Courtesy Joe Vaughn Photography

Internal document photos: Courtesy Virginia Department of Transportation

Page 25 Photo: Source, Office of Intermodal Planning and Investment

PREPARED BY THE OFFICE OF INTERMODAL
PLANNING AND INVESTMENT FOR THE
COMMONWEALTH TRANSPORTATION BOARD



CONTENTS

1: Purpose of the Policy Guide	04
Public Involvement	04
2: Introduction to VTrans – Virginia’s Transportation Plan	05
VTrans Vision, Guiding Principles, Goals, and Objectives ¹	06
VTrans Planning Horizons	08
Federal and State Requirements for VTrans	08
3: VTrans Travel Markets for Mid-term Needs ¹	09
Corridors of Statewide Significance (CoSS)	09
Regional Networks (RN)	10
Urban Development Areas (UDA)	11
Safety	12
4: Policy for the Identification of the VTrans Mid-term Needs	13
5: Policy for the Prioritization of the VTrans Mid-term Needs	15
Step 1: Define Geographical Levels of Prioritization	16
Step 2: Prioritize Within VTrans Mid-term Needs Categories	17
Step 3: Aggregate and Weight VTrans Mid-term Needs Across Needs Categories	18
Step 4: Adjust Priorities for Influencing Factors	19
Establishment of Statewide and Construction District Priority Locations	19
Interpretation of the Prioritized VTrans Mid-term Needs	20
6: Policy for the Development and Monitoring of the VTrans Long-term Risk and Opportunity Register	21
Step 1: Identify Mega- and Macrotrends	22
Step 2: Identify Surrogates for CTB Goals	23
Step 3: Estimate Impact of Macrotrends on CTB Priority Areas	24
Step 4: Develop VTrans Long-term Risk & Opportunity Register	25
Step 5: Track Macrotrends	26
Appendix A: Updates to the VTrans Policy Guide	27



1: PURPOSE OF THE POLICY GUIDE

This Policy Guide outlines the Commonwealth Transportation Board's (CTB)¹ policies related to VTrans, Virginia's transportation plan. As such, the Policy Guide is a resource for policy makers at all levels of government as well as for Virginians interested in policies that directly or indirectly influence allocation of limited transportation dollars and impact their day-to-day lives.

Identification and Prioritization of the VTrans Mid-term Needs

In light of limited transportation funding, the purpose of the policy for the identification and prioritization of VTrans Mid-term Needs is to provide a transparent, data-driven, systematic, and replicable process that is informed by public feedback to:

1. Identify pressing transportation needs that may require policies or investments, and
2. Prioritize the needs to determine a subset that are more critical and where solutions may make the biggest contribution to making progress towards the achievement of CTB's transportation goals.

Additional details on the implementation of the policy, for example how a particular calculation is performed or source of data utilized, can be found in the Technical Guide for the Identification and Prioritization of the VTrans Mid-term Needs, a companion document to this policy guide. The Technical Guide is a resource for planners and engineers interested in data sources, methods, and processes.

DRAFT: Development of the VTrans Long-term Risk & Opportunity Register

The purpose of a risk and opportunity register is to provide a better understanding of the potential changes that will affect Virginia's transportation system into the future and to allow for monitoring over time. While it is impossible to predict the future, we can be better prepared to handle changes in a way that can benefit the Commonwealth.

Details on the process and implementation of this policy can be found in the Draft Technical Guide for the VTrans Long-term Risk & Opportunity Register.

Public Involvement

Public and agency involvement is an integral part of the CTB's policy development process. This Policy Guide synthesizes existing relevant VTrans policies.

Existing CTB Policies

Any comments and feedback on VTrans-related CTB Policies will be considered for future modifications of the policy.

- VTrans Vision, Guiding Principles, Goals, and Objectives: These were approved by the CTB in January 2020.²
- VTrans Travel Markets: VTrans Travel Markets have been established by the CTB. Please refer to Section 3 for more details.
- Policy for the Identification of the VTrans Mid-term Needs: The Policy for the Identification of the VTrans Mid-term Needs was approved by the CTB in January 2020.²
- Policy for the Prioritization of the VTrans Mid-term Needs: The Policy for the Prioritization of the VTrans Mid-term Needs was approved by the CTB in March, 2021.³

¹ Transportation Board established pursuant to [§ 33.2-200](#)

² Commonwealth Transportation Board, [Actions to Approve the 2019 VTrans Vision, Goals, Objectives, Guiding Principles and the 2019 Mid-term Needs Identification Methodology and Accept the 2019 Mid-term Needs](#), January 15, 2020

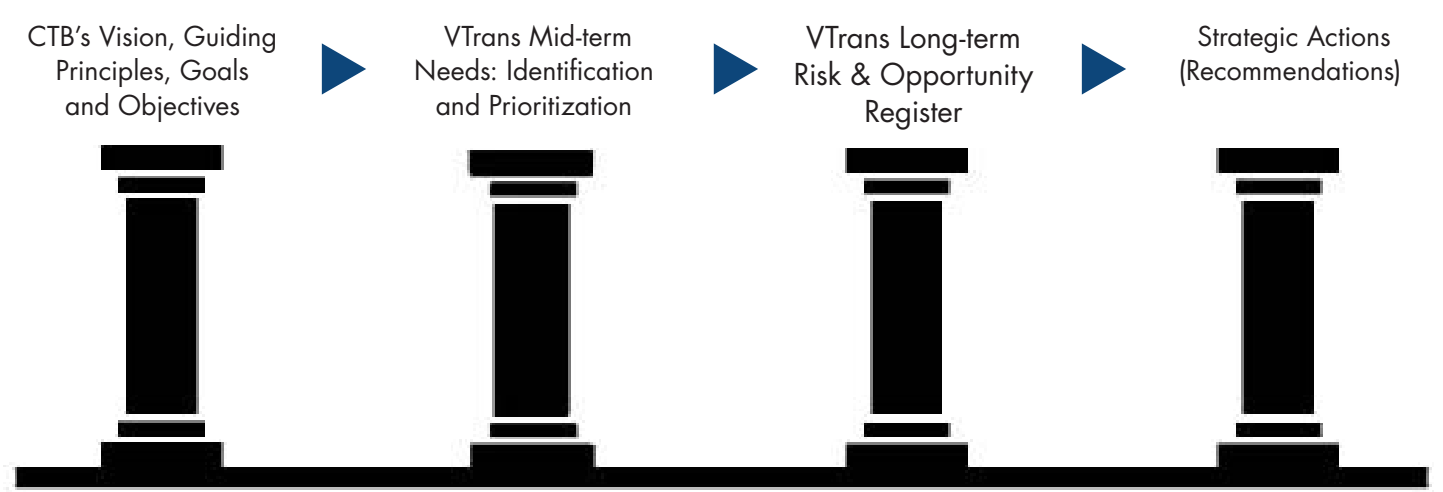
³ Commonwealth Transportation Board, [Actions to Approve the Policy for the Prioritization of the VTrans Mid-term Transportation Needs and Accept the Prioritized 2019 VTrans Mid term Needs](#), March 17, 2021.



2: INTRODUCTION TO VTRANS – VIRGINIA’S TRANSPORTATION PLAN

VTrans is the Commonwealth of Virginia’s multimodal transportation plan to advance the CTB’s vision for transportation in the Commonwealth. The CTB, with assistance from the Office of Intermodal Planning and Investment (OIPI),¹ develops VTrans to identify transportation needs which may be addressed by multimodal infrastructure projects, transportation strategies, creation of new policies, or modifications of existing policies. This Policy Guide addresses the components of VTrans as depicted in Figure 1.

Figure 1: Major Components of VTrans



¹ Office of Intermodal Planning and Investment of the Secretary of Transportation established pursuant to [§ 2.2-229](#)

VTrans Vision, Guiding Principles, Goals, and Objectives

The first major component of VTrans, development of the Vision, Guiding Principles, Goals, and Objectives, forms the basis upon which the remaining three major components are developed to advance the CTB's vision. The CTB updated and adopted the VTrans Guiding Principles, Goals, and Objectives in 2020.¹



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.

Guiding Principles

GP1: Optimize Return on Investments

Implement the right solution at the right price, striving to meet current needs while advancing long-term prosperity and livability.

GP2: Ensure Safety, Security, and Resiliency

Provide a transportation system that is safe for all users, responds immediately to short-term shocks such as weather events or security emergencies, and adapts effectively to long-term stressors such as sea level rise.

GP3: Efficiently Deliver Programs

Deliver high-quality projects and programs in a cost-effective and timely manner.

GP4: Consider Operational Improvements and Demand Management First

Maximize capacity of the transportation network through increased use of technology and operational improvements as well as managing demand for the system before investing in major capacity expansions.

GP5: Ensure Transparency and Accountability, and Promote Performance Management

Work openly with partners and engage stakeholders in project development and implementation. Establish performance targets that consider the needs of all communities, measure progress towards targets. Adjust programs and policies as necessary to achieve the established targets.

GP6: Improve Coordination Between Transportation and Land Use

Encourage local governments to plan and manage transportation-efficient land development by providing incentives, technical support, and collaborative initiatives.

GP7: Ensure Efficient Intermodal Connections

Provide seamless connections between modes of transportation to harness synergies.

¹ Commonwealth Transportation Board, [Actions to Approve the 2019 VTrans Vision, Goals, Objectives, Guiding Principles and the 2019 Mid-term Needs Identification Methodology and Accept the 2019 Mid-term Needs](#), January 15, 2020

Goals	Objectives
 <p>Goal A: Economic Competitiveness and Prosperity Invest in a transportation system that supports a robust, diverse, and competitive economy</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ A.1. Reduce the amount of travel that takes place in severe congestion ▪ A.2. Reduce the number and severity of freight bottlenecks ▪ A.3. Improve reliability on key corridors for all modes
 <p>Goal B: Accessible and Connected Places Increase opportunities for people and businesses to efficiently access jobs, services, activity centers, and distribution hubs</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ B.1. Reduce average peak-period travel times in metropolitan areas ▪ B.2. Reduce average daily trip lengths in metropolitan areas ▪ B.3. Increase the accessibility to jobs via transit, walking, and driving in metropolitan areas
 <p>Goal C: Safety for All Users Provide a safe and secure transportation system for passengers and goods on all travel modes</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ C.1. Reduce the number and rate of motorized fatalities and serious injuries ▪ C.2. Reduce the number of non-motorized fatalities and serious injuries
 <p>Goal D: Proactive System Management Maintain the transportation system in good condition and leverage technology to optimize existing and new infrastructure</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ D.1. Improve the condition of all bridges based on deck area ▪ D.2. Increase the lane miles of pavement in good or fair condition ▪ D.3. Increase percent of transit vehicles and facilities in good or fair condition
 <p>Goal E: Healthy Communities and Sustainable Transportation Communities Support a variety of community types promoting local economies and healthy lifestyles that provide travel options, while preserving agricultural, natural, historic, and cultural resources</p>	<p>Objectives:</p> <ul style="list-style-type: none"> ▪ E.1. Reduce per-capita vehicle miles traveled ▪ E.2. Reduce transportation related NOX, VOC, PM, and CO emissions ▪ E.3. Increase the number of trips traveled by active transportation (bicycling and walking)



VTrans Planning Horizons

The CTB identifies needs for the following two planning horizons. This Policy Guide focuses on the identification and prioritization of the VTrans Mid-term Needs.

- **Mid-term Planning Horizon:** VTrans' analysis for the mid-term planning horizon identifies some of the most pressing transportation issues that need to be addressed over the next 10 years. These needs are referred to as VTrans Mid-term Needs. The needs are identified so that they can inform or guide transportation policies, strategies, and infrastructure improvements developed and implemented by Virginia Department of Transportation (VDOT) and the Department of Rail and Public Transportation (DRPT), as well as local and regional entities.
- **Long-term Planning Horizon:** VTrans' analysis for long-term planning identifies risks and opportunities for a zero- to 20-plus-year planning horizon that may require gradual and systematic shifts in policy.

Federal and State Requirements for VTrans

There are several statutory and regulatory requirements that guide and inform VTrans. Key requirements related to the identification and prioritization of the VTrans Mid-term Needs are summarized below:

Federal Transportation Planning and Performance Reporting Requirements

Federal requirements per [23 U.S.C. 135](#) call for states to develop a statewide transportation plan for "the development and integrated management and operation of transportation systems and facilities (including accessible pedestrian walkways, bicycle transportation facilities, and intermodal facilities that support intercity transportation, including intercity buses and intercity bus facilities and commuter vanpool providers) that will function as an intermodal transportation system for the State and an integral part of an intermodal transportation system for the United States." In addition to that, VTrans meets the requirements associated with [23 CFR § 450.216](#), Development and content of the long-range statewide transportation plan, and [49 U.S.C. § 70202](#), State Freight Plans.

Virginia Transportation Planning and Programming Requirements

There are several direct or indirect transportation planning requirements or related items in the Code of Virginia that are addressed by VTrans. Some of the key requirements are:

- **Develop and Update Statewide Transportation Plan:** Code of Virginia [§ 33.2-353](#) requires OIPI to assist the CTB in the development and update of a statewide transportation plan that includes assessment of capacity needs of "travel markets," which are discussed in Section 3.1. Per the code, the CTB must update the plan at least once every four years.
- **Role of OIPI:** Code of Virginia [§ 2.2-229](#) establishes the OIPI within the Office of the Secretary of Transportation, and charges OIPI to assist the CTB 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](#).
- **Statewide Prioritization Process for Project Selection:** Pursuant to Code of Virginia [§ 33.2-214.1](#), locally and regionally proposed projects funded through the CTB's SMART SCALE Program must meet one or more identified VTrans Mid-term Needs.
- **Eligibility for Revenue-sharing Funds:** Pursuant to Code of Virginia [§ 33.2-357](#), VTrans Mid-term Needs are utilized in the prioritization process for VDOT's Revenue Sharing Program.

3: VTRANS TRAVEL MARKETS FOR MID-TERM NEEDS

VTrans Mid-term Needs are established for the following VTrans Travel Markets per Virginia State Code [§ 33.2-353](#) as well as by CTB Policy. Please refer to Appendix A for more detailed definition of CoSS and RN Travel Markets.



Corridors of Statewide Significance (CoSS)

- **Number:** 12
- **Definition:** An integrated set of multimodal transportation facilities to support interregional travel of people and goods within and outside the state
- **Purpose:**
 - Support inter-regional and interstate travel
 - Connect major centers of activity within and through the Commonwealth
 - Promote the movement of people and goods essential to the economic prosperity of the state
- **Established:**
 - Eleven (11) corridors were established¹ as part of VTrans2035 in 2009, and one was established² in May 2011
- **Characteristics:**
 - Multimodal – must involve multiple modes of travel or must be an extended freight corridor
 - Connectivity – must connect regions, states, and/or major activity centers
 - High volume – must involve a high volume of travel
 - Function – must provide a unique statewide function and/or address statewide goals



¹ Commonwealth Transportation Board, [VTrans2035 – Virginia's Statewide Multimodal Long-Range Transportation Plan](#), December 17, 2009.

² Commonwealth Transportation Board, Northern Virginia North-South Corridor of Statewide Significance, May 28, 2011.



Regional Networks (RN)

- **Number:** 15

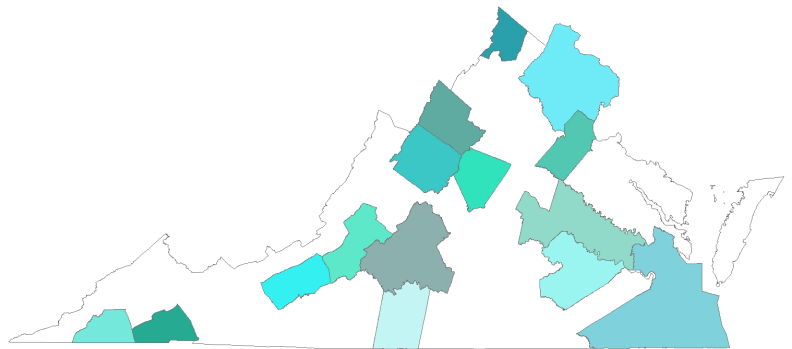
- **Definition:** Based on designated Metropolitan Planning Organizations (MPO) within the Commonwealth. If an MPO boundary includes only a portion of a county, the entire county will be included in the needs analysis area.

- **Purpose:**

- Support intra-regional travel
- Bridge the gap between existing conditions and the desired future for the state's economy

- **Established:**

- Fifteen Regional Networks were established in December 19, 2015¹
- Fauquier County added to Northern Virginia RN as of March 16, 2021, as per MWCOC MPO Study Area boundary change in 2014²



- **Characteristics:**

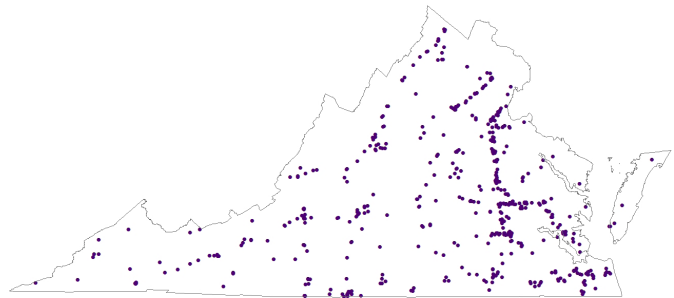
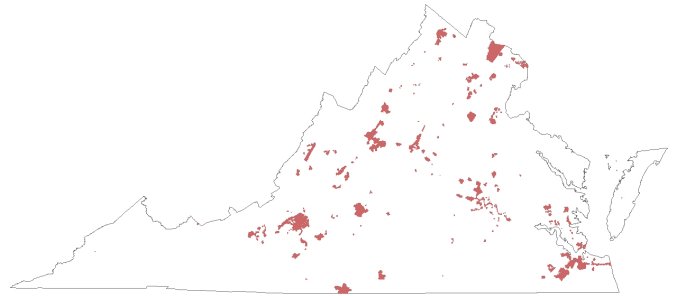
- At least 50,000 people in an urbanized area per US Census estimates
- Regional Networks include VTrans Activity Centers, which are "areas of regional importance that have a high density of economic and social activity" and are associated with the Regional Networks (RNs)

¹ Commonwealth Transportation Board, [VTrans2040 Virginia's Statewide Multimodal Long-Range Transportation Plan Vision Plan and Needs Assessments](#), December 9, 2015

² Metro Washington Council of Governments, <https://www.mwcog.org/uploads/committee-documents/aV1YXFhd20140710114716.pdf>, July 16, 2014

Urban Development Areas (UDA)

- **Number of UDAs:** 230 UDAs;¹ 535 Industrial and Economic Development Areas (IEDA)²
- **Definition:** Urban Development Areas are locally-designated growth areas based on local initiatives pursuant to VA Code [§ 15.2-2223](#). Industrial and Economic Development Areas (IEDAs) are locally-identified industrial and economic development sites submitted to Virginia Economic Development Partnership (VEDP)'s Business-Ready Site Program pursuant to [§ 2.2-2238](#).
- **Purpose:**
 - The purpose of UDAs is to: (1) support local, walkable places; and, (2) to the extent possible, to direct federal, state and local transportation, housing, water and sewer facility, economic development, and other public infrastructure funding to designated UDAs. The purpose of IEDAs is to support economic development.
- **Established:**
 - UDAs are established on an ongoing basis, per local government designation in a locality's Comprehensive Plan pursuant to [§15.2-2223](#). IEDA's are also established or removed on an ongoing basis.
- **Characteristics of UDAs:**
 - Pedestrian-friendly road design
 - Interconnection of new local streets with existing local streets and roads
 - Connectivity of road and pedestrian networks
 - Preservation of natural areas
 - Mixed-use neighborhoods, including mixed housing types, with affordable housing to meet the projected family income distributions of future residential growth
 - Reduction of front and side yard building setbacks
 - Reduction of subdivision street widths and turning radii at subdivision street intersections
- **Characteristics of IEDAs:**
 - Pursuant to [§ 2.2-2238](#) and consistent with Virginia Economic Development Partnership's (VEDP) [Business Ready Sites Program \(VBRSP\)](#)
 - Minimum of 100 contiguous acres (statutory); VEDP accepts sites of 25+ acres
 - Allows for industrial and research parks
 - Applicants to program must be political subdivisions of the Commonwealth of Virginia, including counties, cities, towns, industrial/economic development authorities, and redevelopment and housing authorities or regional industrial facility authority



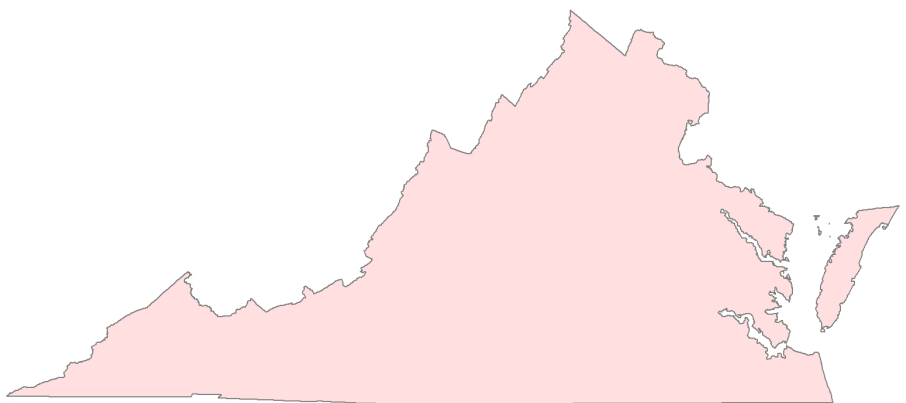
¹ As of November 30, 2019

² As of November 30, 2019



Safety

- **Definition:** A Safety analysis is conducted for all public roadways in the Commonwealth
- **Established:** The Safety Travel Market was established as part of VTrans2040¹



¹ Commonwealth Transportation Board, [VTrans2040 Virginia's Statewide Multimodal Long-Range Transportation Plan Vision Plan and Needs Assessments](#), December 9, 2015

4: POLICY FOR THE IDENTIFICATION OF THE VTRANS MID-TERM NEEDS

The Policy for the Identification of VTrans Mid-term Needs establishes multimodal need categories that correspond to the Board-adopted VTrans Vision, Goals, and Objectives.¹ Each need category has one or more performance measures and thresholds to identify one or more needs. The Policy for the Identification of the VTrans Mid-term Needs was approved by the Commonwealth Transportation Board in January 2020.

Table 1 below outlines need categories and corresponding measures and thresholds established per the CTB policy for the identification of VTrans Mid-term Needs. Locations where the performance measure exceeds the threshold are designated as VTrans Mid-term Needs.

Table 1: VTrans Goals and Associated VTrans Mid-term Needs Categories

Need Category	VTrans Travel Market(s)	Measure and Threshold for Establishing VTrans Mid-term Needs
Goal A: Economic Competitiveness and Prosperity		
Congestion Mitigation	CoSS, RN	At least 2% of the average travel takes place in the excessively congested condition, defined as travel speed below 75% of posted speed limit
	CoSS, RN	Travel Time Index (TTI) 1.3 or higher for at least three hours OR 1.5 or higher for at least one hour
Improved Reliability (Highway)	CoSS, RN	Level of Travel Time Reliability (LOTTR) 1.5 or higher for at least one hour
Improved Reliability (Intercity and Commuter Rail)	COSS	Intercity or commuter rail on-time performance less than 80% at applicable rail stations OR on-time performance less than 90% for applicable rail lines
Goal B: Accessible and Connected Places		
Transit Access to Equity Emphasis Areas	RN	An area with no fixed-route transit service, that has population density to support fixed-route transit service, and that has significantly higher-than-average concentrations of people who are low-income, people with disabilities, minority populations, populations with Limited English Proficiency (LEP), or populations age 75 or higher.
Transit Access to Activity Centers	RN	A VTrans Activity Center where the Deficit of workers who can access the Activity Center by bus or rail transit within 45 minutes compared to those who can access the Activity Center by automobile within 45 minutes is greater than 0
Pedestrian Access to Activity Centers	RN	1-mile distance from local-serving and knowledge-based Activity Centers, fixed-guideway transit stations, and bus rapid transit (BRT) lines
Bicycle Access to Activity Centers	RN	7-mile distance from around local-serving and knowledge-based Activity Centers, fixed-guideway transit stations, and bus rapid transit (BRT) lines
Access to Industrial and Economic Development Areas (IEDAs)	Statewide	Virginia Business Ready Sites Program site with readiness status of Tier 3 or above
Urban Development Areas (UDAs)	UDA ²	Locality-identified transportation needs for bicycle and pedestrian infrastructure, circulation and access, safety, transit enhancements and access to locally designated UDAs

¹ Commonwealth Transportation Board, [Actions to Approve the 2019 VTrans Vision, Goals, Objectives, Guiding Principles and the 2019 Mid-term Needs Identification Methodology and Accept the 2019 Mid-term Needs](#), January 15, 2020

² Per Code of Virginia [§ 33.2-353](#) and [§ 15.2-2223.1](#)

POLICY FOR THE IDENTIFICATION OF THE VTRANS MID-TERM NEEDS (CONTINUED)

Need Category	VTrans Travel Market(s)	Measure and Threshold for Establishing VTrans Mid-term Needs
Goal C: Safety for All Users		
Roadway Safety	Statewide	For each Construction District, includes VDOT Top 100 Potential for Safety Improvement (PSI) Intersections and Segments, and PSI locations with 3+ Fatal or Injury crashes at the intersection or segment over the last five years
Pedestrian Safety	Statewide	Priority corridors identified in VDOT Pedestrian Safety Action Plan ¹
Goal D: Proactive System Management		
Capacity Preservation	CoSS, RN	Inclusion in the VDOT Arterial Preservation Network ² (the state-maintained portion of the National Highway System, as well as additional highways that facilitate connectivity)
Goal E: Healthy Communities and Sustainable Transportation Communities		
Transportation Demand Management	CoSS, RN	Transportation Demand Management (TDM) needs based on roadway facility type and VTrans Travel Market

Interpretation of the Identified VTrans Mid-term Needs

Identified Needs or underlying issues are assigned to roadway segments or node for geographical precision. They should be interpreted in the following manner:

- A solution does not have to be co-located with a need as long as the purpose and effectiveness of a solution addresses the underlying VTrans Mid-term Need.
- A VTrans Need Category does not specify a type or mode of response. For example, a solution to a Need for Improved Reliability may not be a roadway-centric and can instead be addressed by multimodal infrastructure improvements such as transit or rail services or park-and-ride infrastructure. Similarly, a Need for Improved Reliability may also be addressed by policies (e.g. variable pricing, occupancy or vehicle restrictions, etc.) or programs such as commuter assistance programs.

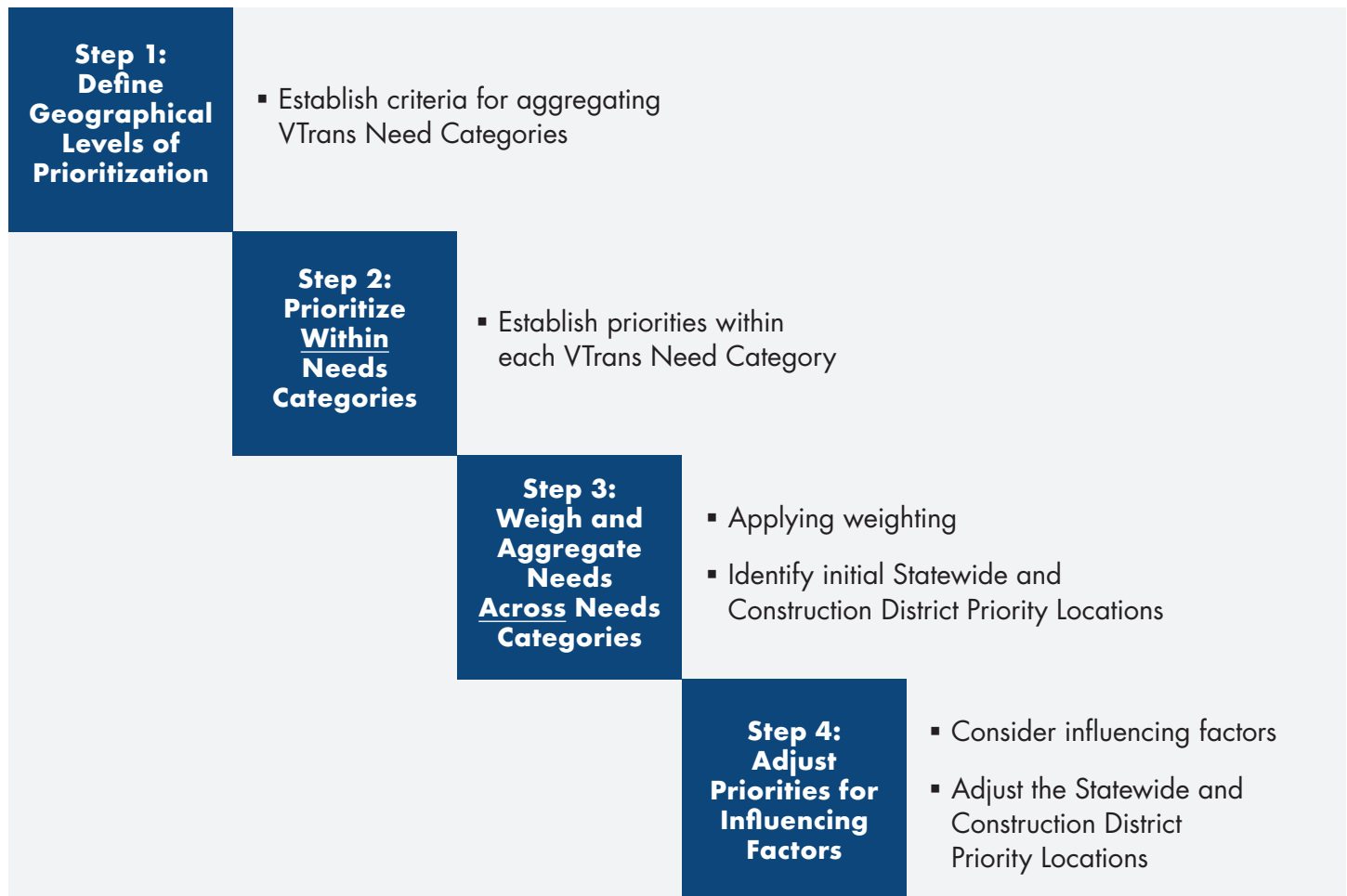
¹ http://www.virginiadot.org/business/resources/VDOT_PSAP_Report_052118_with_Appendix_A_B_C.pdf

² [VDOT Arterial Preservation Program Network](#)

5: POLICY FOR THE PRIORITIZATION OF THE VTRANS MID-TERM NEEDS

The Policy for the Prioritization of the VTrans Mid-term Needs¹ is conducted in four steps shown in Figure 2 and described in greater detail below.

Figure 2: Steps for Prioritization of the VTrans Mid-term Needs



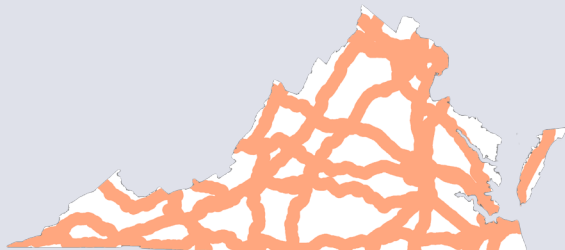
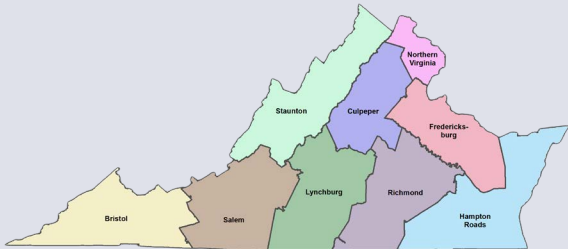
- Step 1: Two sets of priorities are established – Statewide Priority Locations and VDOT Construction District Priority Locations for each of the nine Districts. Each relies on different Need Categories and Travel Markets per Table 2.
- Step 2: This step utilizes the severity of a need and the magnitude of the impact of the need to categorize the Board-adopted 2019 VTrans Mid-term Needs as *Very High, High, Medium, and Low*.
- Step 3: This step takes the needs as categorized above and weights them to form a location- or roadway segment-specific weighted score.
- Step 4: The final step makes adjustments to the step three results in light of factors affecting the transportation network that may be important to take into account, and then categorizes the locations as *Statewide Priority 1, Priority 2, Priority 3, or Priority 4, and District Priority 1, Priority 2, Priority 3, or Priority 4*.

¹ Commonwealth Transportation Board, [Actions to Approve the Policy for the Prioritization of the VTrans Mid-term Transportation Needs and Accept the Prioritized 2019 VTrans Mid term Needs](#), March 17, 2021.

Step 1: Define Geographical Levels of Prioritization

Two sets of Priority Locations are established – Statewide Priority Locations and Construction District Priority Locations. Each relies on different Need Categories and Travel Markets per Table 2.

Table 2: Geographic Levels of Prioritization and Applicable Travel Markets

Levels of Prioritization	Statewide Priority Locations	Construction District Priority Locations
Aggregation Level	Statewide: Corridors of Statewide Significance 	VDOT Construction District 
Applicable Need Categories	<ul style="list-style-type: none"> ▪ Congestion Mitigation (CoSS) ▪ Improved Reliability (Highway) (CoSS) ▪ Improved Reliability (Intercity and Commuter Rail) (CoSS) ▪ Roadway Safety (along CoSS) ▪ Capacity Preservation (CoSS) ▪ Transportation Demand Management (CoSS) 	<ul style="list-style-type: none"> ▪ Congestion Mitigation (RN) ▪ Improved Reliability (Highway) (RN) ▪ Transit Access to Equity Emphasis Areas (RN) ▪ Transit Access to Activity Centers (RN) ▪ Pedestrian Access to Activity Centers (RN) ▪ Bicycle Access to Activity Centers (RN) ▪ Access to Industrial and Economic Development Areas (IEDA) ▪ Safety (Segments and Intersections) ▪ Safety (Pedestrian Safety) ▪ Capacity Preservation (CoSS, RN) ▪ Transportation Demand Management (RN)



Step 2: Prioritize Within VTrans Mid-term Needs Categories

The second step establishes priorities *Very High*, *High*, *Medium*, and *Low* within each VTrans Mid-term Need Category per the following:¹

- *Very High* Priority: Top 5% of the total mileage of the applicable needs
- *High* Priority: Top 5.001%–15% of the total mileage
- *Medium* Priority: Top 15.001%–25% of the total mileage
- *Low* Priority: Bottom 25.001%–100% of the total mileage

The above-referenced priorities within each VTrans Mid-term Need Category are categorized based on the following two criteria:

- *Severity of the Need*: This criteria takes into account the intensity or extremity of the Need.
- *Magnitude of the Need*: This criteria takes into account the number of residents, vehicles, or persons impacted by the Need.

These criteria are explained in more detail in the Technical Guide for the Identification and Prioritization of VTrans Mid-term Needs.

¹ Limitations of the existing datasets as well as the need to avoid small fractional distributions of the needs have required utilization of non-percentile based distribution or prioritization within VTrans Mid-term Needs. These are outlined in more detail in the Technical Guide for the Identification and Prioritization of the VTrans Mid-term Needs.

Step 3: Weigh and Aggregate VTrans Mid-term Needs Across Needs Categories

The third step takes the VTrans Mid-term Needs as categorized above, weighs and aggregates them to form a location- or roadway segment-specific score. Weighting for Construction District Priority Locations are based on SMART SCALE Area Types.¹

Table 3: Weighting to Establish Statewide and Construction District Priority Locations:

Travel Market	Board-adopted VTrans Need Category	Weighting – Statewide Priority	Weighting – Construction District Priority ¹			
			Area Type A	Area Type B	Area Type C	Area Type D
CoSS	Congestion Mitigation	25.00%	These Need Categories are not utilized for establishing Construction District Priority Locations.			
CoSS	Improved Reliability (Highway)	15.00%				
CoSS	Improved Reliability (Intercity and Commuter Rail)	10.00%				
Safety	Roadway Safety (along CoSS)	25.00%				
CoSS	Capacity Preservation	10.00%				
CoSS	Transportation Demand Management	15.00%				
RN	Congestion Mitigation	These Need Categories are not utilized for establishing Statewide Priority Locations.	25.00%	15.00%	10.00%	5.00%
RN	Improved Reliability (Highway)		20.00%	10.00%	5.00%	5.00%
RN	Transit Access to Equity Emphasis Areas		5.00%	6.25%	6.25%	3.75%
RN	Transit Access to Activity Centers		5.00%	6.25%	6.25%	3.75%
RN	Pedestrian Access to Activity Centers		5.00%	6.25%	6.25%	3.75%
RN	Bicycle Access to Activity Centers		5.00%	6.25%	6.25%	3.75%
UDA	Access to Industrial and Economic Development Areas		2.50%	10.00%	10.00%	15.00%
Safety	Roadway Safety		15.00%	15.00%	20.00%	25.00%
Safety	Pedestrian Safety		5.00%	5.00%	5.00%	5.00%
CoSS, RN	Capacity Preservation		2.50%	10.00%	15.00%	20.00%
RN	Transportation Demand Management		10.00%	10.00%	10.00%	10.00%
	Total	100.00%	100.00%	100.00%	100.00%	100.00%

¹ Commonwealth Transportation Board. [Adoption of Updated Policy for Implementation of the SMART SCALE Project Prioritization Process.](#) February 19, 2020.



Step 4: Adjust Priorities for Influencing Factors

The final step is to adjust the scores determined in Step 3 in light of factors affecting the transportation network that may be important to take into account. Presence or absence of these factors will not cause a location to be assigned a lower Priority level than assigned in Step 3; they can only increase a location's Priority level.

- Co-located bridge repair, rehabilitation, or replacement needs
- Co-located pavement repair, rehabilitation, or replacement needs
- Exposure to projected sea level rise, storm surge, or historical inland/riverine flooding
- Co-located Economically Distressed Communities¹

Adjustments are made for each location from Step 3 based on the level of the applicable influencing factor criteria.

Establishment of Statewide and Construction District Priority Locations

The final adjusted Statewide Priority Locations and Construction District Priority Locations are then established as follows:

Statewide Priority Locations are assigned levels 1–4 based on their relative statewide rank by roadway segment mileage in the following manner:

- Priority 1 Locations: Top 0%–1% of the total mileage
- Priority 2 Locations: 1.001%–5% of the total mileage
- Priority 3 Locations: 5.001%–15% of the total mileage
- Priority 4 Locations: Bottom 15.001%–100% of the total mileage

Construction District Priority Locations are assigned levels 1–4 based on their relative rank for each VDOT Construction District by roadway segment mileage in the following manner:

- Priority 1 Locations: Top 0%–1% of the total mileage
- Priority 2 Locations: 1.001%–5% of the total mileage
- Priority 3 Locations: 5.001%–15% of the total mileage
- Priority 4 Locations: Bottom 15.001%–100% of the total mileage

¹ Source: Economic Innovation Group's Distressed Communities Index, <https://eig.org/dci>. See map at www.vtrans.org/interactivtrans.

Interpretation of the Prioritized VTrans Mid-term Needs

Prioritized Needs are location-specific for geographical precision. They should be interpreted in the following manner:

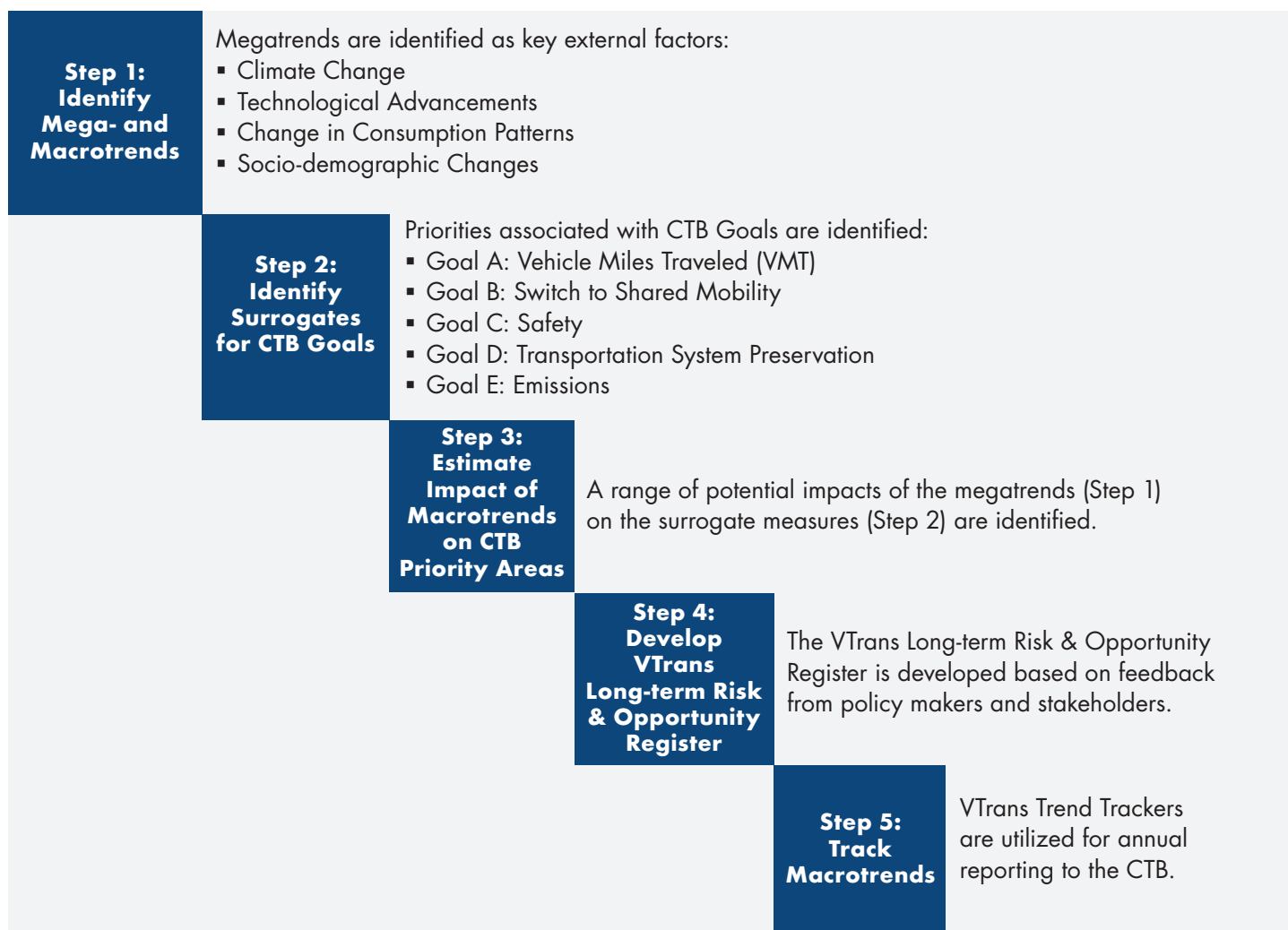
- A solution does not have to be co-located with a prioritized need as long as the purpose and effectiveness of a solution addresses the underlying issue(s).
- A VTrans Need Category does not specify a mode-specific response. For example, a solution to a Need for Improved Reliability may not be roadway-centric and can instead be addressed by multimodal infrastructure improvements such as transit or rail services or park-and-ride infrastructure. Similarly, a Need for Improved Reliability may also be addressed by policies (e.g. variable pricing, occupancy or vehicle restrictions, etc.) or programs such as commuter assistance programs.

6: POLICY FOR THE DEVELOPMENT AND MONITORING OF THE VTRANS LONG-TERM RISK & OPPORTUNITY REGISTER

The VTrans Long-term Risk & Opportunity Register is developed based on the following steps:

- Step 1: Megatrends¹ and associated Macrotrends² are identified.
- Step 2: CTB's priorities are identified based on CTB's Vision, Goals, and Objectives³.
- Step 3: Impact of mega and macrotrends on CTB's priorities is estimated.
- Step 4: VTrans Long-term Risk & Opportunity Register is developed based on the projected impacts on established priorities.
- Step 5: OIPI reviews and provides annual updates to the CTB for the identified risks and opportunities.

Figure 3: Steps for Development and Monitoring of VTrans Long-term Risk & Opportunity Register



¹ Megatrend: Megatrends are defined as “the great forces in societal development that will very likely affect the future in all areas over the next 10-15 years. A megatrend is also defined as “a large, social, economic, political, environmental or technological change that is slow to form. Once in place, megatrends influence a wide range of activities, processes and perceptions, both in government and in society, possibly for decades. They are the underlying forces that drive trends”. Source: [European Foresight Platform](#).











² Macrotrend: A macrotrend is defined as “An emerging pattern of change likely to impact state government and require a response. Multiple macrotrends can be associated with a megatrend.” Source: [Transportation Policy Task Force Suggested State Legislation Docket](#). 2009. California

³ Commonwealth Transportation Board, [Actions to Approve the 2019 VTrans Vision, Goals, Objectives, Guiding Principles and the 2019 Mid-term Needs Identification Methodology and Accept the 2019 Mid-term Needs](#), January 15, 2020

Step 1: Identify Mega- and Macrotrends

OIPI has identified and shall periodically update Mega- and Macrotrends identified in Table 4 to account for factors significant from a transportation planning and investment perspective.

Table 4: VTrans Mega- and Macrotrends

MEGATREND 1: CLIMATE CHANGE	
	Macrotrend 1: Increase in Flooding Risk
MEGATREND 2: TECHNOLOGICAL ADVANCEMENTS	
	Macrotrend 2: Adoption of Highly Autonomous Vehicles
	Macrotrend 3: Adoption of Electric Vehicles
	Macrotrend 4: Growth in Shared Mobility
MEGATREND 3: EVOLVING CONSUMPTION PATTERNS	
	Macrotrend 5: Growth in E-commerce
	Macrotrend 6: Greater Automation of Production and Services
MEGATREND 4: SOCIO-DEMOGRAPHIC CHANGES	
	Macrotrend 7: Growth of Professional Service Industry
	Macrotrend 8: Increase in Workplace Flexibility
	Macrotrend 9: Growth of the 65+ Cohort
	Macrotrend 10: Population and Employment Shift

Step 3: Estimate Impact of Macrotrends on CTB Priority Areas

OIPI shall establish an order of influence and estimate cumulative impacts of macrotrends, as shown in Table 6, on Surrogates identified in Step 2.

Table 6: Impacts of Macrotrends on Surrogates for CTB Goals

Macrotrend	VMT	Switch to Shared Mobility	Safety	Transportation System Preservation	Emissions
 Increase in Flooding Risk					
 Adoption of Highly Autonomous Vehicles					
 Adoption of Electric Vehicles					
 Shared mobility					
 Growth in E-Commerce					
 Greater Automation of Production and Services					
 Growth of Professional Service Industry					
 Increase in Workplace Flexibility					
 Growth of the 65+ Cohort					
 Population and Employment Shift					
Cumulative Impacts					



Step 4: Develop VTrans Long-term Risk & Opportunity Register

OIPI shall develop and update the VTrans Long-term Risk & Opportunity Register based on feedback from the direction from the CTB and other stakeholders. At minimum, it shall include the following:

- Description of risk or opportunity
- Impact: Estimated impact on CTB Goals in the event of occurrence
- Proximity: Temporal dimension of risk or opportunity
- Priority: Assigned relative priority for the CTB accounting for probability, impact and proximity.

The VTrans Long-term Risk & Opportunity shall allow for systematic and methodical identification of risks¹ and opportunities.² It shall also take into account the work completed in Steps 1 through 3, including the order of influence established for the ten macrotrends and the magnitude of impact established in Step 3.

¹ The term risk is defined as a situation or scenario wherein there is some uncertainty and at least some probability of a negative outcome or result.

² The term opportunity is defined as a situation or scenario wherein there is some uncertainty and at least some probability of a positive outcome or result.

Step 5: Track Macrotrends

OIPI shall utilize Trend Trackers identified in Table 7 to provide updates to the CTB on VTrans Macrotrends as well as any changes to the items identified in the VTrans Risk and Opportunity Register once per calendar year in July or September.

Table 7: VTrans Trend Trackers

Macrotrend	VTrans Trend Trackers
 Increase in Flooding Risk	<ul style="list-style-type: none"> Number of directional miles at-risk from sea-level rise Number of directional miles at-risk from storm surge Number of directional miles at-risk from inland/riverine flooding Number of hours of roadway closures due to flooding or flooding-related damage Expenditures on flooding-related damage
 Adoption of Highly Autonomous Vehicles	<ul style="list-style-type: none"> Market Penetration of Semi-Autonomous (Levels 1 and 2) Vehicles Attitude and Preferences for Adoption of Semi-Autonomous (Levels 1 and 2) Vehicles Market Penetration of Highly Autonomous (Levels 3 and 4) Vehicles Attitude and Preferences for Adoption of Highly Autonomous (Levels 3 and 4) Vehicles
 Adoption of Electric Vehicles	<ul style="list-style-type: none"> Number of Electric Vehicles Market Penetration of Electric Vehicles Attitude and Preferences for Adoption of Electric Vehicles NOx, Volatile Organic Compounds (VOC)/Greenhouse Gas Emissions
 Shared Mobility	<ul style="list-style-type: none"> Access to Shared Mobility Services Utilization of Shared Mobility Services by Type
 Growth in E-commerce	<ul style="list-style-type: none"> Number of Warehouse and Distribution Centers Square Footage of Warehouse and Distribution Centers Share of E-commerce Sales (Business-to-business, business-to-customers) Number of Jobs in Goods Movement Dependent Industries
 Greater Automation of Production and Services	<ul style="list-style-type: none"> Value output of 3D Printing Number of short-range drone deliveries Number of long-range drone deliveries Number of robotic last-mile deliveries
 Growth of Professional Service Industry	<ul style="list-style-type: none"> Share of Professional Service Industry Number of STEM Jobs
 Increase in Workplace Flexibility	<ul style="list-style-type: none"> Number of Workers with Workplace Flexibility Utilization of Workplace Flexibility
 Growth of the 65+ Cohort	<ul style="list-style-type: none"> Number of Virginians with Age 65 or higher Share of Age 65+ Cohort
 Population and Employment Shift	<ul style="list-style-type: none"> VTrans Land Use Vitality (LUV) Index Population Employment Income

APPENDIX A: UPDATES TO THE VTRANS POLICY GUIDE

The list below reflects version updates to this document. For questions, please reach out to OIPI.

Document Effective Date	Description
October 29, 2020	This version, titled “Policy Guide for the Identification and Prioritization of the VTrans Mid-term Needs”, was made available for public review and comment prior to Action by the Commonwealth Transportation Board on the Draft Policy for the Prioritization of the VTrans Mid-term Needs.
March 16, 2021	This version reflected modifications to the Draft Policy for the Prioritization of VTrans Mid-term Needs based on public comment prior to Action by the Commonwealth Transportation Board.
March 24, 2021	This version reflected the action by the Commonwealth Transportation Board to approve the Policy for the Prioritization of the VTrans Mid-term Needs.
September, 2021	This version reflected a simplified document name, “VTrans Policy Guide”, and an addition of the draft policy for the development and monitoring of the VTrans Long-term Risk & Opportunity Register.

PREPARED BY THE OFFICE OF INTERMODAL
PLANNING AND INVESTMENT FOR THE
COMMONWEALTH TRANSPORTATION BOARD

