Hampton Roads 2045 Long-Range Transportation Plan: Candidate Project Evaluation and Prioritization Report

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TRANSPORTATION PLANNING ORGANIZATION

T21-02

January 2021

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REPORT DOCUMENTATION

TITLE

Hampton Roads 2045 Long-Range Transportation Plan:
Candidate Project Evaluation and Prioritization

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ABSTRACT

This document – part of the compendium of reports the comprise the 2045 Hampton Roads Long-Range Transportation Plan (LRTP) – summarizes the evaluation and prioritization of candidate projects being considered for the LRTP, utilizing the regional scenario planning framework and updated HRTPO Project Prioritization Tool. Results from this analysis will serve as a guiding tool in developing regional transportation priorities.

ACKNOWLEDGMENT & DISCLAIMERS

Prepared in cooperation with the U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), and Virginia Department of Transportation (VDOT). The contents of this report reflect the views of the Hampton Roads Transportation Planning Organization (HRTPO). The HRTPO is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the FHWA, VDOT, or Hampton Roads Planning District Commission. This report does not constitute a standard, specification, or regulation. FHWA or VDOT acceptance of this report as evidence of the fulfillment of the objectives of this planning study does not constitute endorsement/approval of the need for any recommended improvements, nor does it constitute approval of their location and design or a commitment to fund any such improvements. Additional project-level environmental impact assessments and/or studies of alternatives may be necessary.

NON-DISCRIMINATION

The HRTPO assures that no person shall, on the ground of race, color, national origin, handicap, sex, age, or income status as provided by Title VI of the Civil Rights Act of 1964 and subsequent authorities, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program or activity. The HRTPO Title VI Plan provides this assurance, information about HRTPO responsibilities, and a Discrimination Complaint Form.

HAMPTON ROADS 2045 LONG-RANGE TRANSPORTATION PLAN: CANDIDATE PROJECT EVALUATION AND PRIORITIZATION REPORT

REPORT DATE ***JANUARY 2021***

REPORT ***T21-02***

ACKNOWLEDGEMENTS

Special Thanks

HRTPO staff would like to acknowledge and thank the members of the Long-Range Transportation Plan (LRTP) Subcommittee and VDOT Hampton Roads District staff for their hard work and dedication in both providing and reviewing data and results as a part of this analysis.

HRTPO staff would also like to extend a special thank you to VDOT Transportation Mobility and Planning Division staff. Their assistance with the Regional Travel Demand Model and in conducting model runs was critical in completing this analysis.

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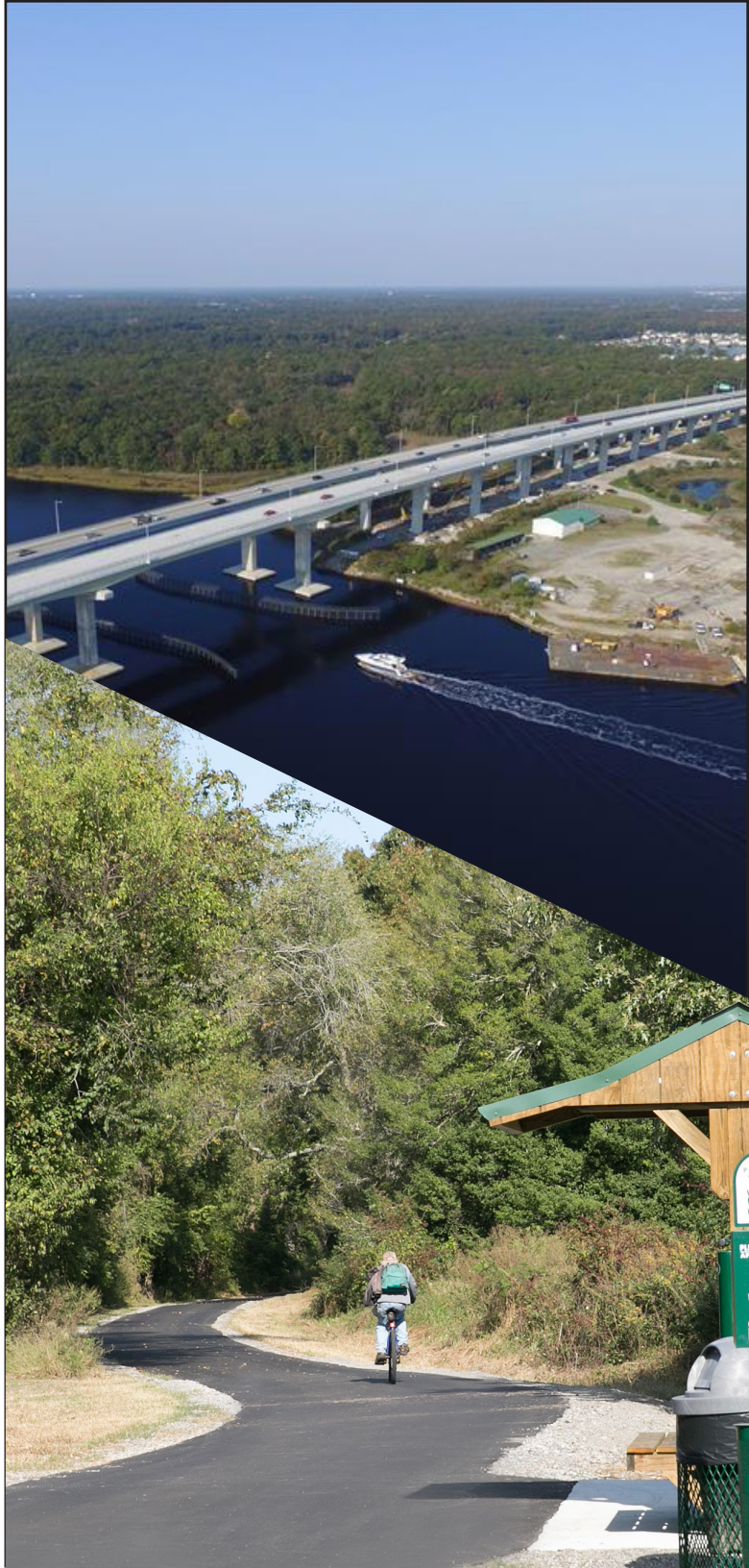

THE 2045 LONG-RANGE TRANSPORTATION PLAN WILL USE INNOVATIVE PLANNING TECHNIQUES TO ADVANCE AN ADAPTIVE TRANSPORTATION SYSTEM THAT SEAMLESSLY INTEGRATES TRANSPORTATION MODES FOR ALL USERS WHILE IMPROVING QUALITY OF LIFE AND PRESERVING THE UNIQUE CHARACTER OF HAMPTON ROADS.

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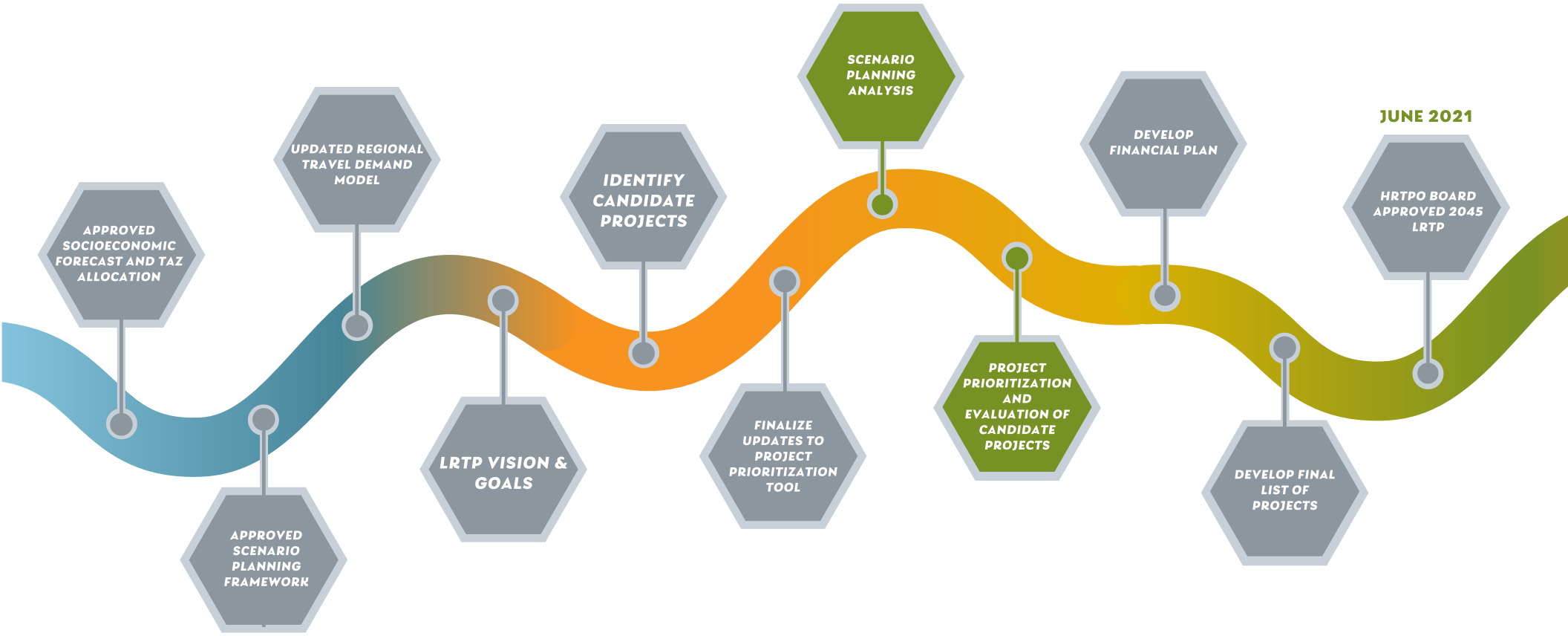
CHAPTER 1: INTRODUCTION AND BACKGROUND

Transportation designed to move people and goods in an efficient and reliable manner is essential for thriving communities. When considering transportation investments, it is important to not only take care of short-term demands, but also identify long-term needs. To accomplish this, the Hampton Roads Transportation Planning Organization (HRTPO) develops a long-range regional blueprint, or Long-Range Transportation Plan (LRTP) to help guide multi-modal transportation investments that promote system efficiency while maximizing the use of scarce transportation funds.

LRTPs have a planning horizon of at least twenty years and are updated regularly to reflect changing conditions and priorities. Changes in growth can impact travel demand on the regional transportation system just as changes in the environment and technology can impact how people will travel in the future; therefore, transportation plans must consider alternatives to effectively address these conditions. Once alternatives are determined and prioritized, funds are identified to pay for the projects. This entire process takes approximately five years to complete and requires regional cooperation and public participation.

For the past few years, HRTPO staff has been working on updating the regional LRTP to the horizon year of 2045 which is scheduled to be adopted by the HRTPO Board in June 2021. This report, the fifth in the series documenting the development of the 2045 LRTP, summarizes the evaluation of candidate projects using the regional scenario planning framework and the updated HRTPO Project Prioritization Tool.

2045 LRTP DEVELOPMENT MILESTONES

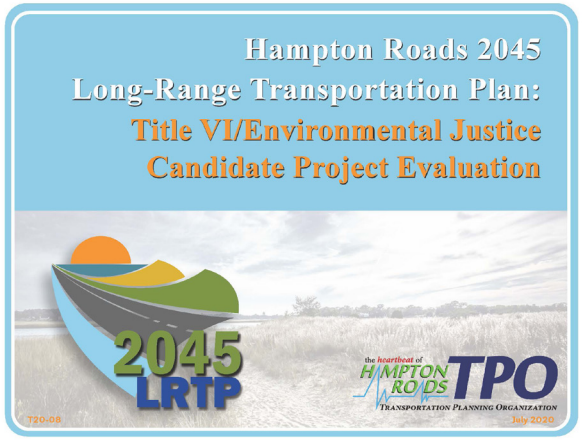


2045 LRTP REPORTS TO DATE

The development of the ***2045 LRTP*** is being documented in a series of reports. Listed below are the reports that have been produced to date. Please click on the highlighted links for more information.

The ***2045 LRTP Socioeconomic Forecast and Transportation Analysis Zone Allocation*** report examines how the region may develop over the next twenty years based upon projected population and employment growth.

The ***2045 LRTP Regional Needs*** report summarizes the visioning process as well as the collection and spatial analysis of candidate projects being considered for inclusion in the plan.



The ***2045 LRTP Title VI/Environmental Justice Candidate Project Evaluation*** report documents the application of the HRTPO Title VI/Environmental Justice Methodology to assess transportation candidate projects being considered for inclusion in the plan.

The ***2045 LRTP Transportation Challenges and Strategies*** report summarizes challenges related to the transportation system and strategies that are planned or in place to help address these challenges.

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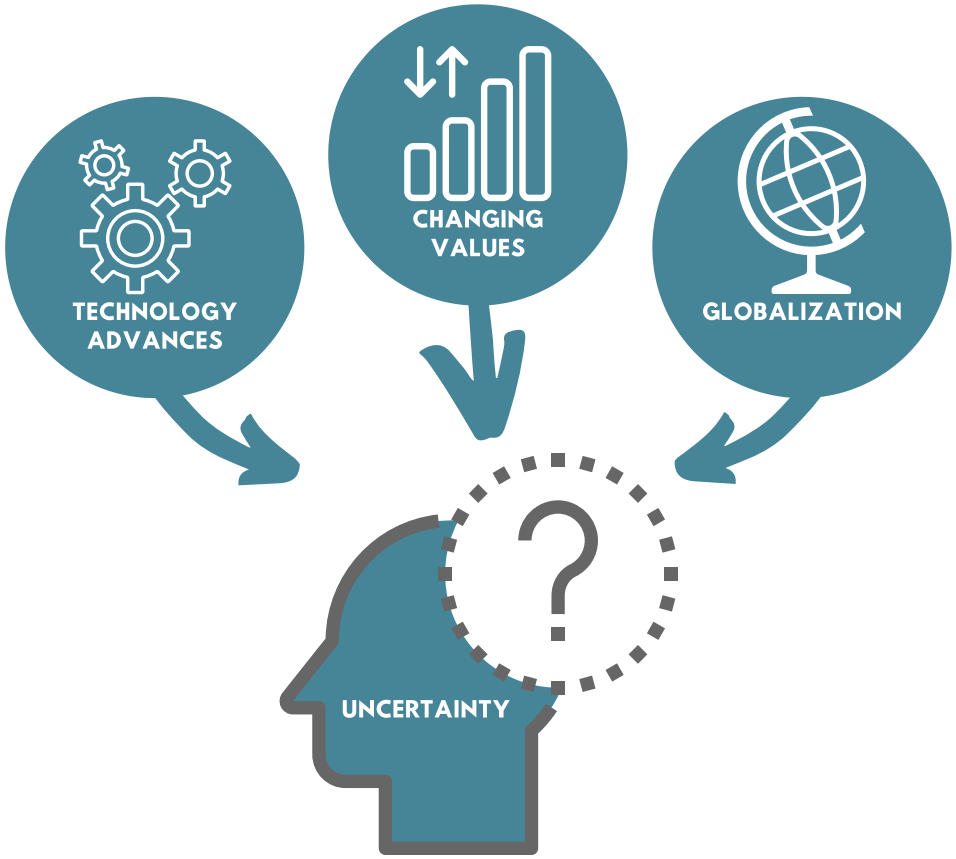
CHAPTER 2: SCENARIO PLANNING

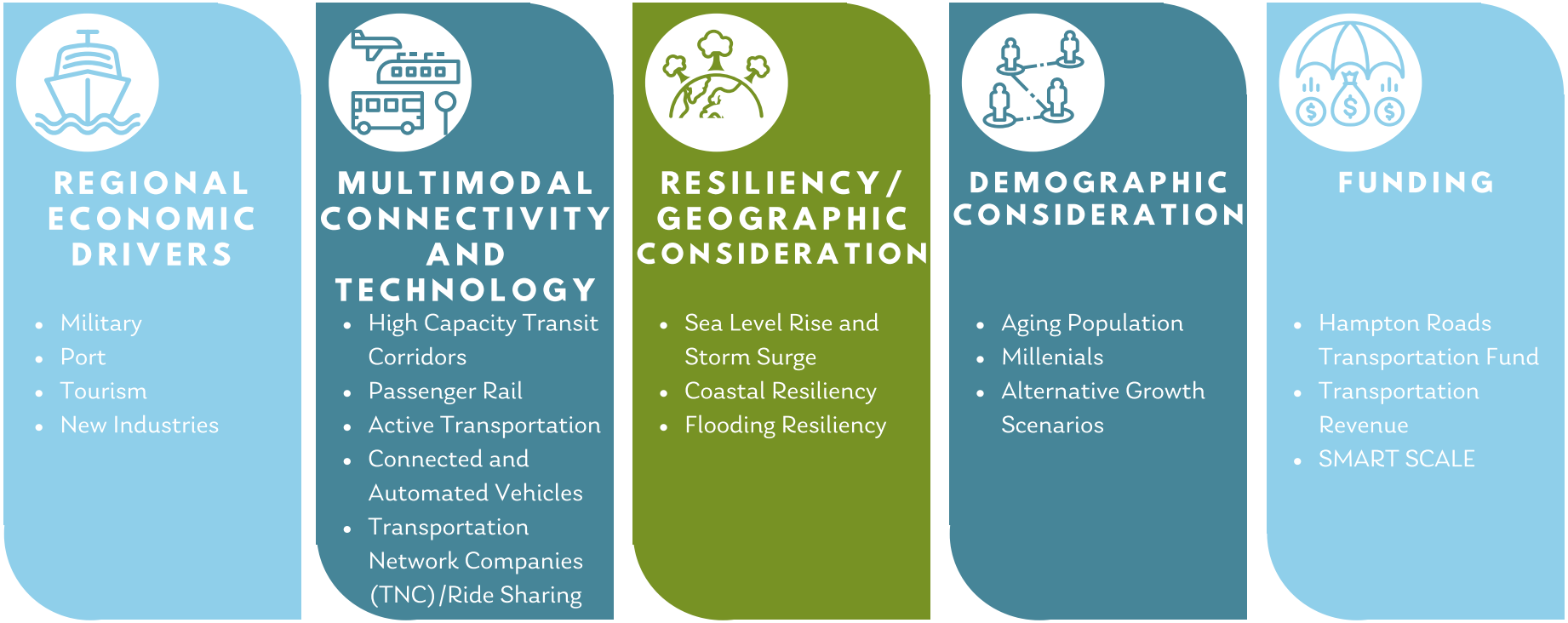
Preparing long-range transportation plans can be challenging because the future is unpredictable and traditional planning tools and practices are not designed to adequately capture all this uncertainty. The changing nature of demographics, economics, the environment, and technology call for a more robust approach to long-range planning that explores how disruptive trends may interact, producing a range of future outcomes.

Scenario planning provides a framework to analyze dynamic, often competing factors in an organized and insightful manner. In terms of transportation, scenario planning can be utilized to consider how competing changes might affect connectivity, mobility, resiliency, and communities across the region. Specifically, in Hampton Roads, some factors that can impact how the region develops include the military, port, connected and autonomous vehicles, flooding vulnerabilities, an aging population, and transportation funding sources.



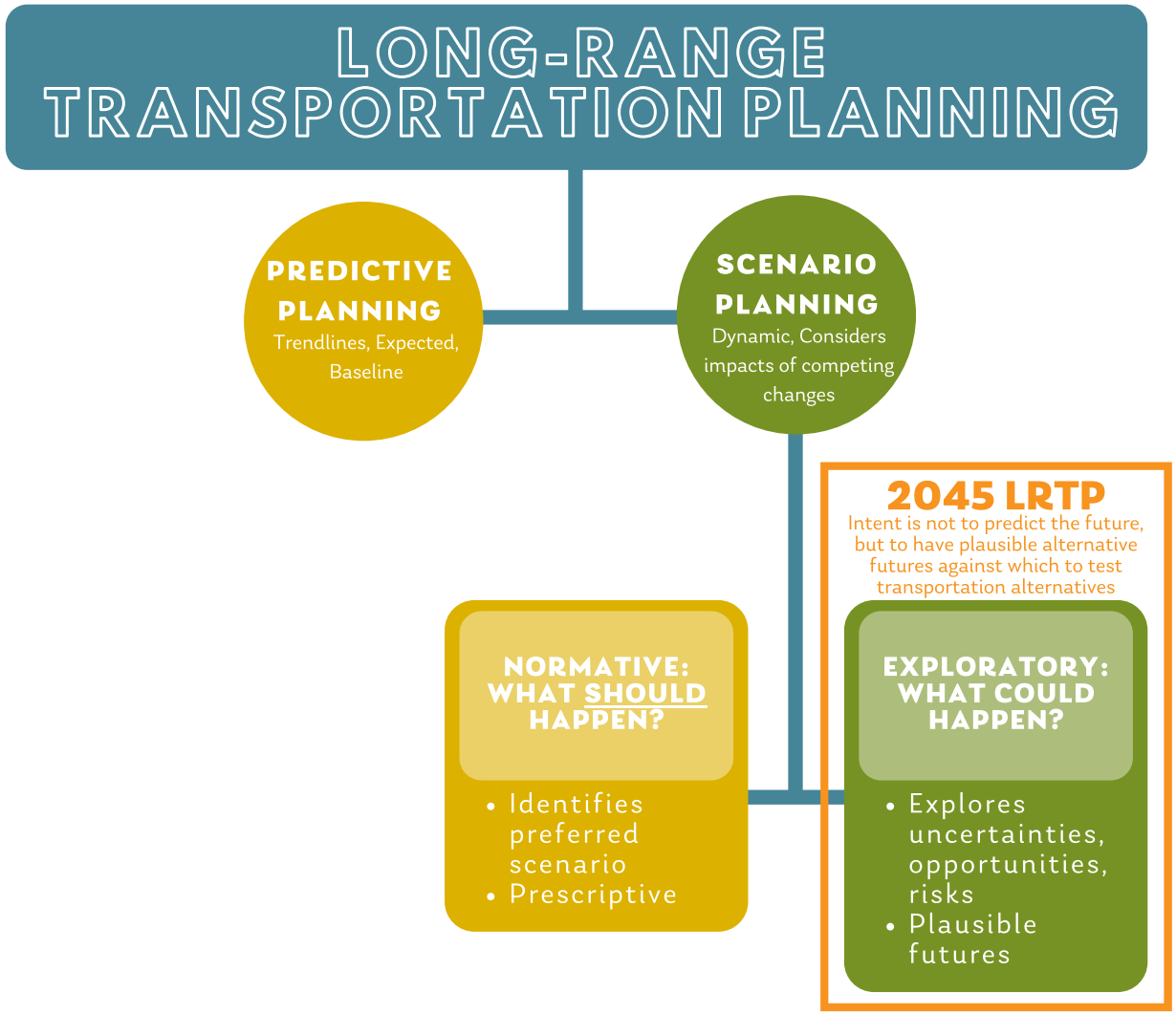
To address the uncertainty in Hampton Roads, the 2045 LRTP and another regional effort, the ***Regional Connectors Study*** (RCS), are applying a unique scenario planning effort that specifically addresses how to investigate plausible alternate futures and their potential impacts on the transportation system, providing quantitative inputs to enable the prioritization of regional investments. Because both the 2045 LRTP and RCS are regional efforts with a 2045 planning horizon, scenario planning between the two efforts are being coordinated.

2045 LRTP SCENARIO PLANNING CONSIDERATIONS



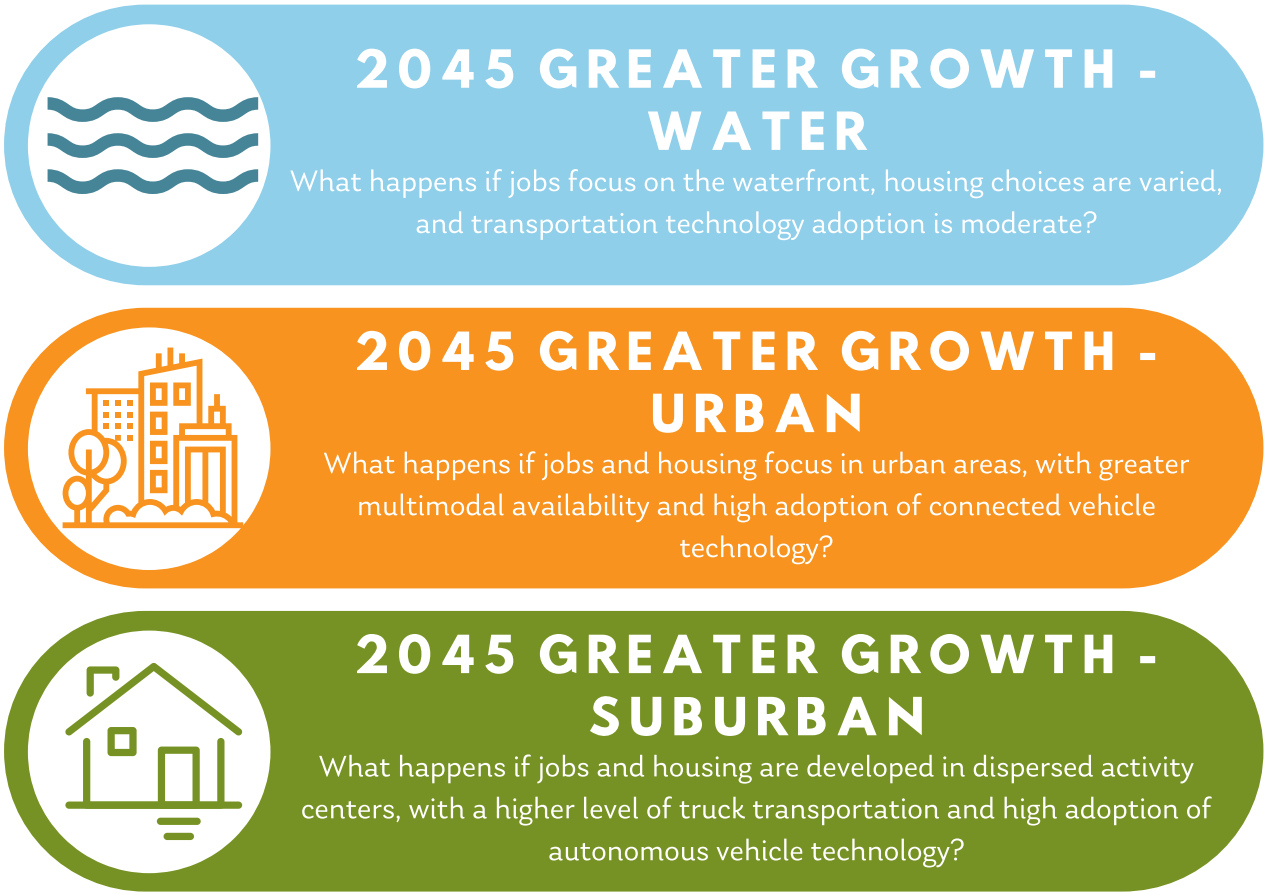
The scenario planning effort being applied for the 2045 LRTP is exploratory as opposed to predictive or prescriptive (referred to as normative planning) and is therefore intended to examine *What Could Happen* in the region instead of *What Should Happen*. Since this effort is exploratory, a preferred scenario will not be selected. Instead, candidate transportation projects will be evaluated through each of the alternative scenarios to identify those projects that provide the most benefit to the region regardless of which future assumption is analyzed – thereby highlighting smart investments for the Hampton Roads region.

Ultimately, this analysis approach will help position the HRTPO to make more resilient policy and investment choices for the future, with a focus on being prepared for what could happen under alternate scenarios regardless of the disruptive trends.



Over the past couple of years, HRTPO staff and the RCS consultant team, through a collaborative stakeholder process, established a ***Regional Scenario Planning Framework*** to guide the scenario analysis. In addition to preparing the 2045 baseline scenario, three additional future "Greater Growth" scenarios were developed. The process to create the regional framework also included identifying existing and future place types, scenario drivers (disruptive trends), alternate scenario narratives, and control totals for additional growth for the alternate scenarios.

2045 LRTP SCENARIO PLANNING THEMES



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CHAPTER 3: 2045 LRTP PROJECT PRIORITIZATION

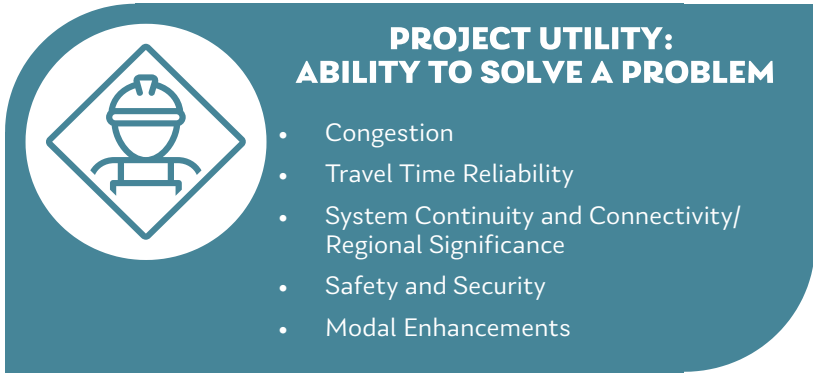
Project Prioritization is an essential part of the development of the LRTP as scores produced from this process aid regional decision-makers in selecting transportation projects that will benefit the region while maximizing the use of scarce financial resources.

To prioritize projects, the HRTPO uses an objective and data-driven Project Prioritization Tool designed to evaluate and score candidate transportation projects based on technical merits and regional benefits. The Tool evaluates transportation projects based on three components:

- Project Utility (ability to solve an existing transportation issue)
- Economic Vitality (ability to support economic growth)
- Project Viability (project readiness and compatibility)

Each component is worth 100 points, combining for a maximum score of 300 points.

In addition to facilitating the selection of projects for the LRTP, the Tool also helps to position the region in the pursuit of additional Federal, State, and Regional transportation funds as they become available.



PROJECT PRIORITIZATION TOOL UPDATE

The HRTPO Project Prioritization Tool has been used to evaluate and rank projects in the past two LRTPs and in the identification of Regional Priority Projects. The Tool was designed to be updated periodically to reflect current conditions and regional priorities.

In 2017, per the direction of the LRTP Subcommittee (comprised of representatives from localities, transit agencies, state and federal transportation agencies, etc.), HRTPO staff initiated a formal process to review and update the Tool to incorporate feedback received from regional stakeholders as well as ensure continued alignment with Federal and State planning factors. Recommended enhancements to the Tool were developed through a collaborative process with various HRTPO committees, regional stakeholders, and the public. The HRTPO Board approved the recommended enhancements to the Project Prioritization Tool at its July 16, 2020 meeting.

More information on the HRTPO Project Prioritization Tool and the enhancements can be found by clicking on the links below. Public comments received on the recommended enhancements to the Tool can be found in Appendix B.

- ***HRTPO Project Prioritization Tool***
- ***HRTPO Project Prioritization: Summary of Enhancements***
- ***HRTPO Project Prioritization: Summary of Enhancements – Additional Resource Slides***

SUMMARY OF PROJECT PRIORITIZATION TOOL ENHANCEMENTS

- More Balanced Components (Project Utility, Economic Vitality, Project Viability)
- Added Economic Vitality to Active Transportation and "Other" (smaller scope) projects
- Improved alignment with Federal Performance Measures
- Improved alignment with SMART SCALE Measures (congestion, safety, environmental considerations)
- Incorporated Resiliency
- Enhanced Accessibility and Social Equity considerations throughout categories
- Improved Intermodal/Freight, Transit, and Active Transportation Measures
- Improved "Other" category to use in RSTP scoring process (projects not evaluated as part of the LRTP)
- Modified calculation of Cost Effectiveness

CANDIDATE PROJECT EVALUATION

For the 2045 LRTP, approximately 280 candidate projects were submitted by regional stakeholders and citizens from across the region. These projects range in scope from interstate bridges and tunnels to new bike paths and multi-use trails. For prioritization purposes, candidate projects are evaluated in separate categories: Highway, Interchange/Intersection, Bridge/Tunnel, Transit, Intermodal/Freight, and Active Transportation. Projects are separated into categories to align with potential funding sources (which are often tied to transportation mode or facility type). Because of funding constraints, as well as the differences in evaluation criteria, project scores are not compared across categories.

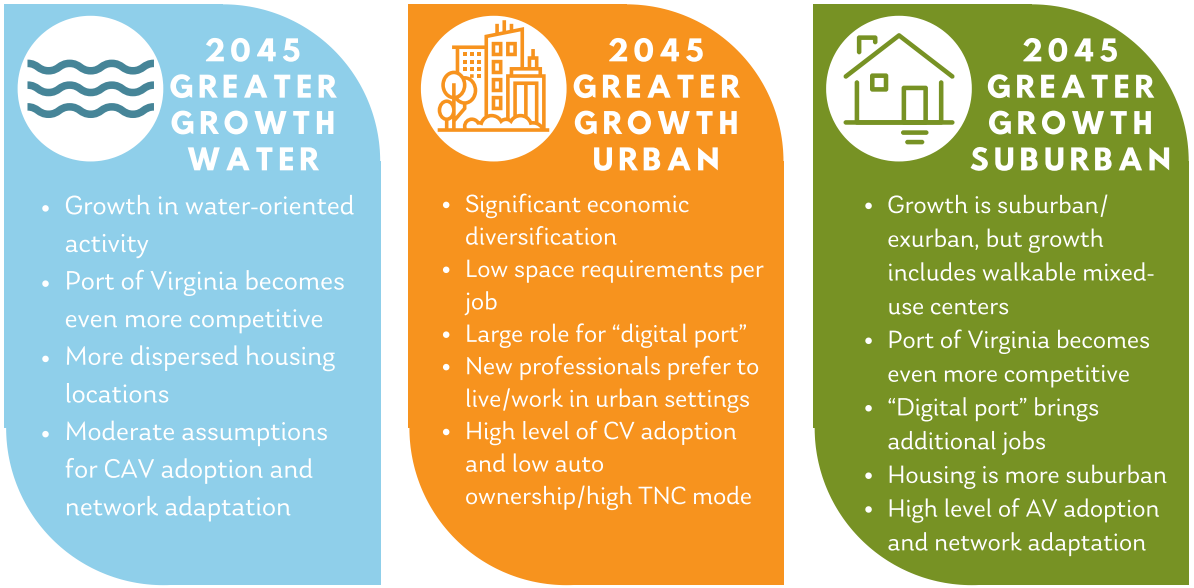
Prior to project evaluation, "committed" transportation projects were identified since they are not evaluated with the HRTPO Project Prioritization Tool. Committed Projects are defined as fully funded transportation projects programmed for construction in VDOT's current Six-Year Improvement Program (SYIP) as well as the Regional Priority Projects under construction or fully funded for construction in the Hampton Roads Transportation Accountability Commission (HRTAC) six-year funding program. Committed Projects, since they are considered fully funded, are automatically included in the LRTP. See Chapter 4 for a list of the 2045 LRTP Committed Projects.

The remaining 2045 LRTP Candidate Projects were evaluated and prioritized using the HRTPO Project Prioritization Tool. Evaluating projects with the Tool requires substantial data and stakeholder input. A description of the calculations used to evaluate candidate projects can be found in Appendix A.

INCORPORATION OF SCENARIO PLANNING

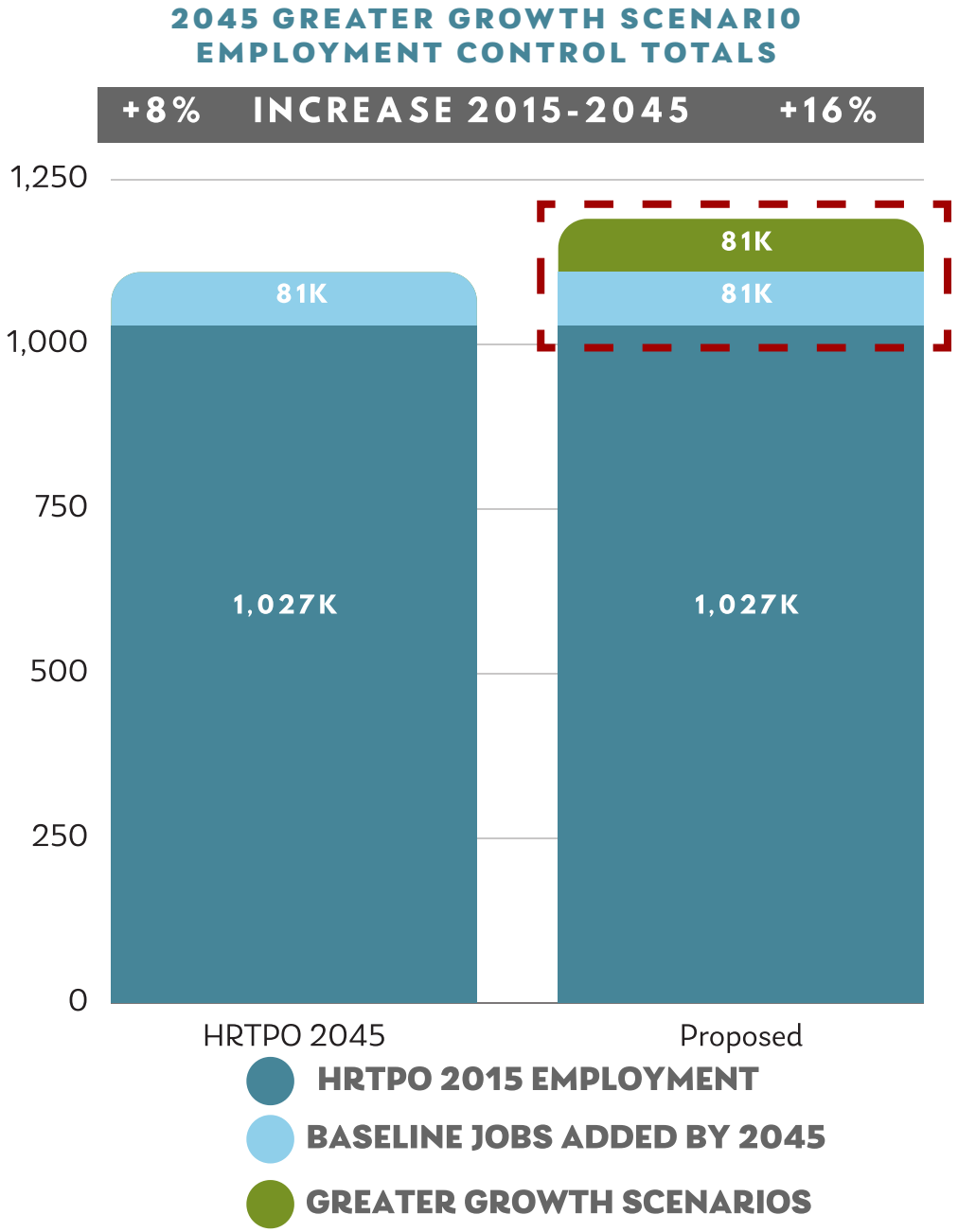
As described earlier in this report, exploratory scenario planning is being applied in the development of the 2045 LRTP. In addition to the 2045 baseline scenario, which represents "business as usual," three Greater Growth scenarios were developed: Greater Growth on the Water, Greater Growth in Urban Areas, and Greater Growth in Suburban Areas. Each scenario narrative is designed to test different regional travel patterns as described in the figure below. Since scenario planning for the 2045 LRTP is exploratory in nature, the elements described in each scenario are not mutually exclusive and any combination of these scenarios can occur. An essential goal of this technique is not to predict the future but instead use these distinct scenario narratives to evaluate candidate projects and highlight projects strengths and weaknesses despite future uncertainty.

2045 LRTP SCENARIO NARRATIVES

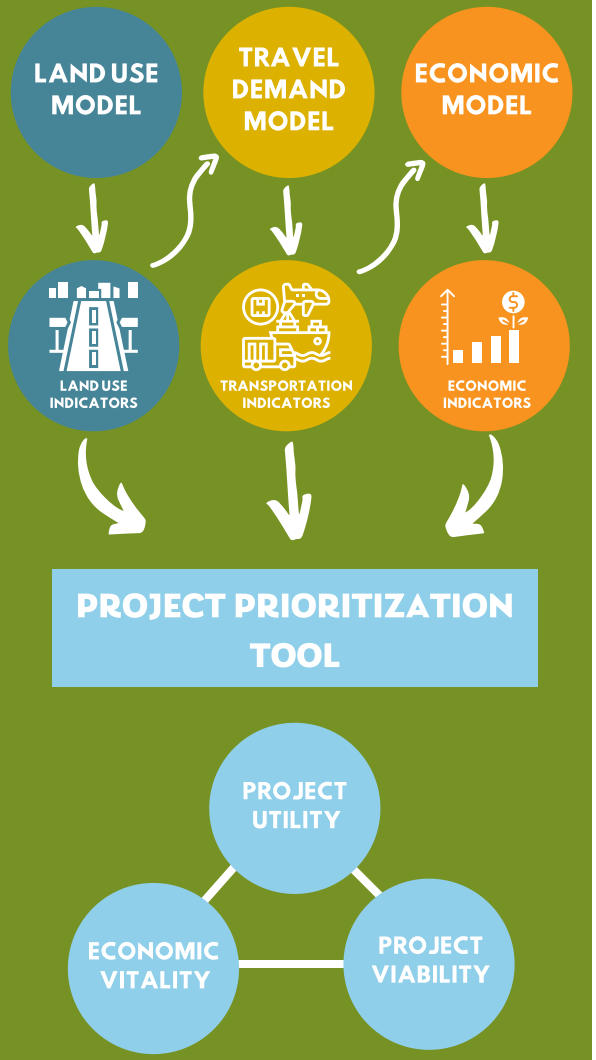


To evaluate the candidate projects incorporating scenario planning, land use data for each Greater Growth scenario had to be developed. Using the regional scenario planning framework of existing and future place types, scenario drivers, and control totals for additional growth for the alternate scenarios, baseline population and employment data were modified to align with the Greater Growth scenario narratives.

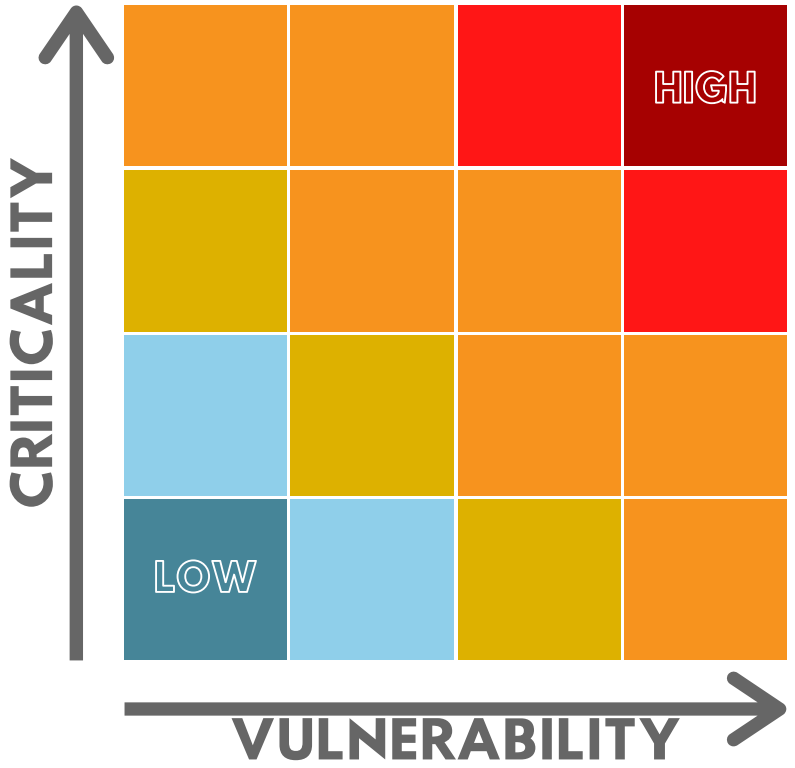
As shown in the figure to the right, an additional 8% in employment was added to the Greater Growth scenarios. This increase in jobs also produced an associated increase in population for each of the Greater Growth scenarios. Using scenario dependent suitability and capacity factors, this additional growth was allocated across the region using the CommunityViz land use model. Outputs from the land use model were then plugged into the regional travel demand model (a planning tool used to forecast traffic and travel behavior). Assumptions regarding economic drivers (e.g. freight/port expansion and the military) and travel behavior (e.g. the use of connected and autonomous vehicles) were also specified for each scenario in the regional travel demand model. These scenario specific data inputs and assumptions resulted in varying travel behavior and traffic forecasts that were then used as inputs to the Project Prioritization Tool.



MODELING THE SCENARIOS



In addition to the land use and travel scenario dependent measures, flooding vulnerability scenarios were also explored. As part of a pilot project with Volpe, a Resilience and Disaster Recovery (RDR) tool is being developed that will enable users to incorporate the costs and benefits of resilience into the project prioritization process. The RDR is designed to address a variety of hazards, quickly assessing and comparing hundreds of scenarios covering various external factors (e.g. patterns of growth, sea level rise, frequency/severity of flooding inundation events). The RDR is still currently being refined, but upon completion, it will be another valuable tool to aid regional decision makers in selecting projects that are both robust and resilient.



REVIEW OF DATA INPUTS AND DRAFT SCORES

To ensure that the best available data was used in the evaluation and prioritization of candidate projects, data inputs were reviewed by the LRTP Subcommittee at key points in the process.

During the months of November and December 2020, draft Project Prioritization scores were provided for review and comment to the Committees/Subcommittees listed in the figure below.

In addition to the technical stakeholder review, between December 2 - 16, 2020, the public was also provided an opportunity to learn more about the HRTPO Project Prioritization process as well as review and comment on draft scores.

STAKEHOLDER REVIEW

LRTP SUBCOMMITTEE

HRTPO ADVISORY COMMITTEES

- Transportation Technical Advisory Committee (TTAC)
- Freight Transportation Advisory Committee (FTAC)
- Community Advisory Committee (CAC)

OTHER HRTPO COMMITTEES/GROUPS

- Active Transportation Subcommittee (ATS)
- Regional Transit Coordination Working Group

PUBLIC

HRTPO BOARD

NEXT STEPS IN DEVELOPING THE 2045 LRTP

The next step in the long-range transportation planning process is the development of a financial plan. Using the Project Prioritization Scores as well as the analysis from the Title VI and Environmental Justice Methodology, top-ranking projects will be selected for inclusion in the 2045 LRTP based on available funding. These top-ranking projects can include new or widened roadways, new or expanded transit services, intermodal projects to enhance the movement of freight, or new regional bicycle/pedestrian trails. The final 2045 LRTP list of projects will help to achieve the overall vision of the 2045 LRTP to use innovative planning techniques to advance an adaptive transportation system that seamlessly integrates transportation modes for all users while improving quality of life and preserving the unique character of Hampton Roads.

LRTP SCENARIO PLANNING TOOLS

SCENARIO MODELING TOOLS

Land Use Model | Travel Demand Model

Economic Model | Volpe RDR

PROJECT EVALUATION AND RANKING ACROSS SCENARIOS

Project Prioritization Tool

Other Performance Measures

FISCAL-CONSTRAINT APPLIED TO MOST ROBUST PROJECTS

Long-Range Transportation Revenue

Project Costs

2045 LRTP

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CHAPTER 4: 2045 LRTP COMMITTED PROJECTS

Committed Projects are defined as fully funded transportation projects programmed for construction in VDOT's current Six-Year Improvement Program (SYIP) as well as the Regional Priority Projects under construction or fully funded for construction in the Hampton Roads Transportation Accountability Commission (HRTAC) six-year funding program. Committed Projects, since they are considered fully funded, are automatically included in the LRTP.

REGIONAL PRIORITY (HRTAC) PROJECTS

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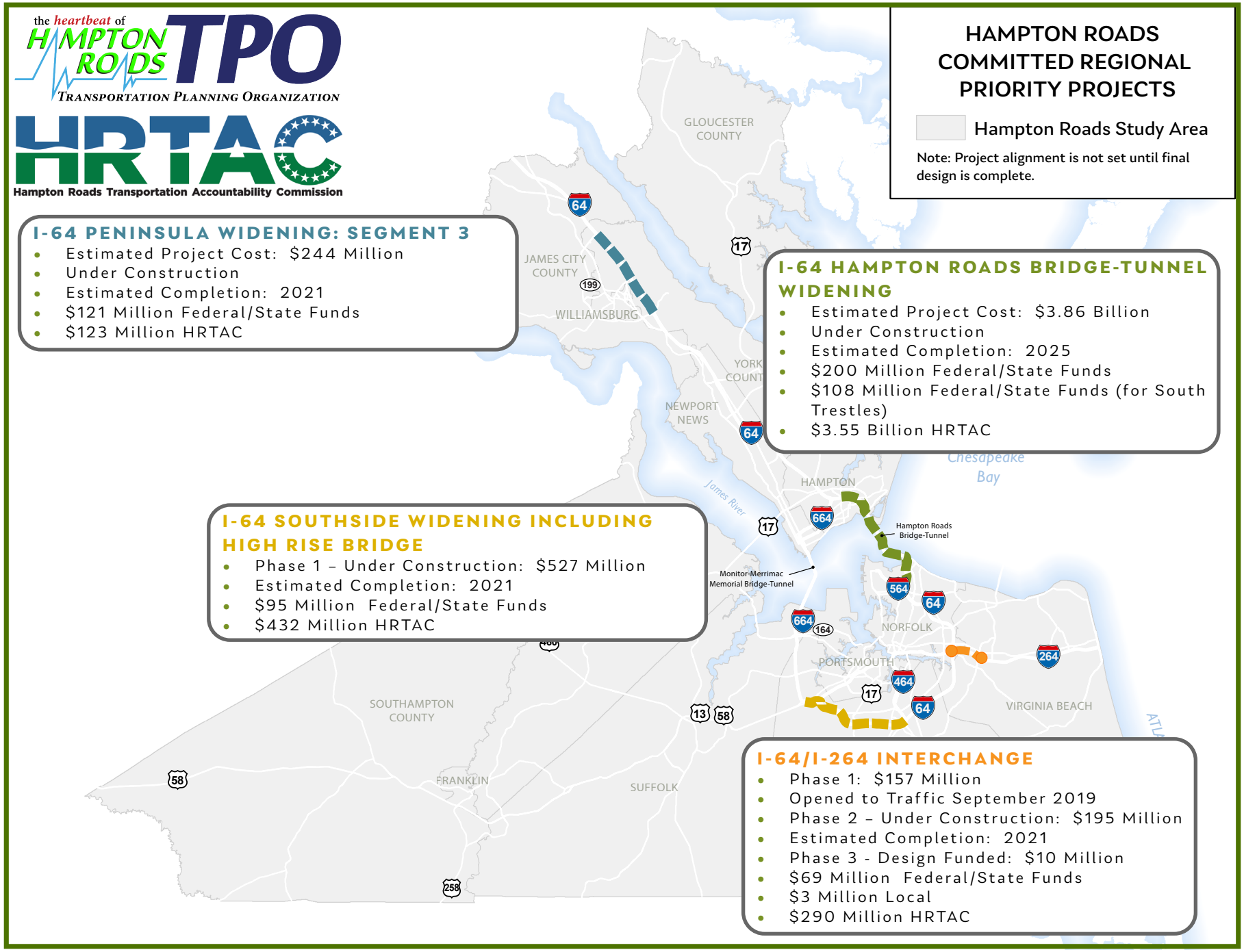
HRTAC
Hampton Roads Transportation Accountability Commission



I-64 PENINSULA WIDENING: SEGMENT 3

- Estimated Project Cost: $244 Million
- Under Construction
- Estimated Completion: 2021
- $121 Million Federal/State Funds
- $123 Million HRTAC

I-64 HAMPTON ROADS BRIDGE-TUNNEL WIDENING

- Estimated Project Cost: $3.86 Billion
- Under Construction
- Estimated Completion: 2025
- $200 Million Federal/State Funds
- $108 Million Federal/State Funds (for South Trestles)
- $3.55 Billion HRTAC

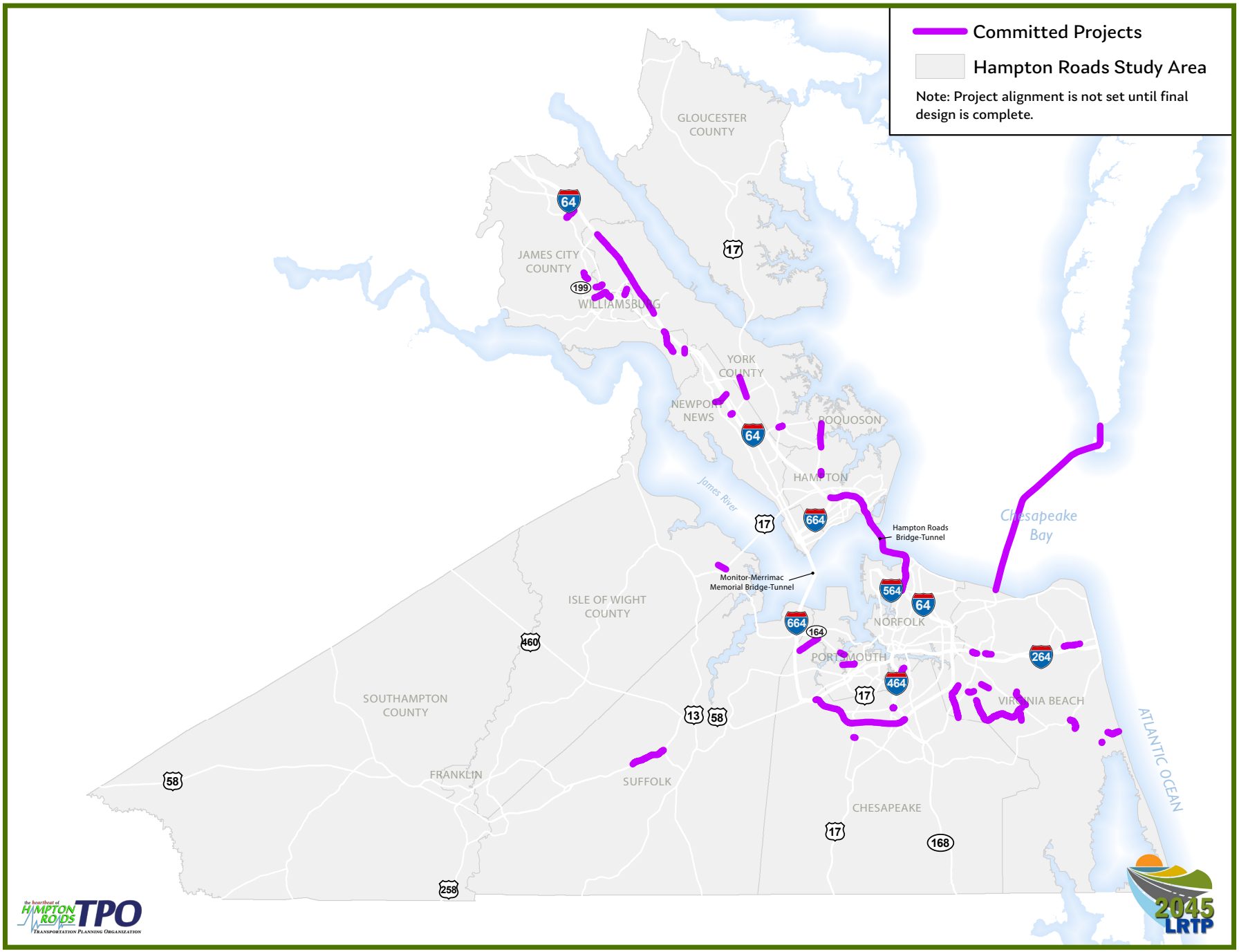
I-64 SOUTHSIDE WIDENING INCLUDING HIGH RISE BRIDGE

- Phase 1 – Under Construction: $527 Million
- Estimated Completion: 2021
- $95 Million Federal/State Funds
- $432 Million HRTAC

I-64/I-264 INTERCHANGE

- Phase 1: $157 Million
- Opened to Traffic September 2019
- Phase 2 – Under Construction: $195 Million
- Estimated Completion: 2021
- Phase 3 - Design Funded: $10 Million
- $69 Million Federal/State Funds
- $3 Million Local
- $290 Million HRTAC

2045 LRTP COMMITTED PROJECTS



2045 LRTP COMMITTED PROJECTS

2045 LRTP COMMITTED PROJECTS									
2045 PROJECT ID	UPC	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	COMMITTED STATUS
BRIDGE/TUNNEL									
2045-1	T15554	Chesapeake Bay Bridge-Tunnel Parallel Thimble Shoal Tunnel 1	Virginia Beach	Northampton County	Multi-jurisdictional	Construct a new 2-lane tunnel across Thimble Shoal Channel	2	4	Project under construction
2045-2	115008	I-64 Widening Including Hampton Roads Bridge-Tunnel	I-664 (Hampton Coliseum)	I-564	Multi-jurisdictional	Widening to 6 lanes (1 full-time HOT, 1 part-time HOT shoulder)	4/6	6/8	Advertised for construction
2045-7	106692	I-64 Southside Widening Including High Rise Bridge - Phase I	I-464	I-664	Multi-jurisdictional	Widening to 6 lanes (1 full-time HOT, 1 part-time HOT shoulder)	4	6/8	Project under construction
2045-5	108665	22nd St Bridge	Liberty St	Wilson Rd	Chesapeake	Bridge replacement and re-alignment	4	2	Project under construction
2045-6	109382	Deep Crk AIW Bridge Replacement and G.W. Hwy/Moses Grandy Trail Intersection Improvements	Mill Creek Pkwy	Diamond Ave	Chesapeake	Bridge replacement with additional improvements to approaching roadyways	2	5	Committed for 2045 LRTP
2045-8	111002 111032	Triple Decker Bridge (Interchange of US 13, US 460, and Norfolk Southern Rail Line)	N/A	N/A	Chesapeake	Bridge rehabilitation	N/A	N/A	Committed (fully funded in SYIP)
2045-17	93077	Denbigh Blvd Bridge Replacement	Richneck Rd	Trailblazer Blvd	Newport News	Build replacement	4	4	Project under construction
2045-21	102715	Churchland Bridge	N/A	N/A	Portsmouth	Build replacement	4	4	Advertised for construction
2045-27	12546	Laskin Road Bridge Replacement	Laskin Rd	Laskin Rd	Virginia Beach	Build replacement with additional capacity	4	6	Project under construction
2045-28		Sandbridge Rd Bridge Replacement	N/A	N/A	Virginia Beach	Build replacement	2	2	Project under construction
HIGHWAY									
2045-41	106689	I-64 Peninsula Widening Segment 3	1.05 miles west of Humelsine Pkwy/ Marquis Ctr Pkwy	1.15 miles west of Route 199, Lightfoot (Exit 234)	Multi-jurisdictional	Widening to 6 lanes	4	6	Project under construction
2045-105		I-64 Express Lanes - Segment 2	I-264	I-464	Multi-jurisdictional	Conversion of HOV to HOT	2	2	Pending Amendment
2045-3	13427 97715	Wythe Creek Rd	Alphus St	Commander Shepard Blvd	Multi-jurisdictional	Widening	2	3	Committed for 2045 LRTP
2045-11	108731	Coliseum Dr Extension A	Hampton Roads Center Pkwy	Butler Farm Rd	Hampton	New facility	0	4	Committed for 2045 LRTP
2045-12	109314	Nike Park Road Extension	Reynolds Dr	US 17	Isle of Wight County	New facility/roadway extention	0	2	Committed for 2045 LRTP
2045-14	100920	Croaker Rd	Richmond Rd (US 60)	Rochambeau Rd	James City County	Widening	2	4	Committed for 2045 LRTP
2045-15	100921	Longhill Rd (Phase 1)	Humelsine Pkwy (Rte 199)	Old Town Rd	James City County	Widening	2	4	Project under construction
2045-16	100200	Skiffes Creek Connector	Green Mount Pkwy	Merrimac Trail (Rte 143)	James City County	New facility	0	4	Committed for 2045 LRTP

2045 LRTP COMMITTED PROJECTS

2045 LRTP COMMITTED PROJECTS									
2045 PROJECT ID	UPC	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	COMMITTED STATUS
2045-18	4483	Atkinson Blvd	Jefferson Ave	Warwick Blvd	Newport News	New facility	0	4	Project under construction
2045-19	108725	Independence Blvd	Denbigh Blvd (Rte 173)	Fort Eustis Blvd	Newport News	New facility	0	4	Committed for 2045 LRTP
2045-22	100937	Route 58 (Holland Rd)	Suffolk Bypass	0.7 mi W. of Manning Bridge Rd	Suffolk	Widening	4	6	Project under construction
2045-222		Ferrell Pkwy	Indian Lakes Blvd	Indian River Rd	Virginia Beach	Widening	4	6	Committed for 2045 LRTP
2045-240		Landstown Rd - Phase I	Landstown Centre Way	Landstown Rd	Virginia Beach	Widening	2	4	Committed for 2045 LRTP
2045-259		Rosemont Road - Phase V	Dam Neck Rd	Lynnhaven Pkwy	Virginia Beach	Widening	2	4	Committed for 2045 LRTP
2045-29	109381	Centerville Tnpk - Phase III	Chesapeake CL	Kempsville Rd	Virginia Beach	Widening	2	4	Committed for 2045 LRTP
2045-30	103005	Centerville Turnpike	Indian River Rd	Kempsville Rd	Virginia Beach	Widening	2	6	Project under construction
2045-31		Cleveland Street - Phase III	Witchduck Road	Clearfield Ave	Virginia Beach	Widening	2	4	Committed for 2045 LRTP
2045-32	110803	Cleveland Street - Phase IV	Witchduck Road	Independence Blvd	Virginia Beach	Widening	2/4	4	Committed for 2045 LRTP
2045-33	112318	Elbow Rd / Dam Neck Rd	Indian River Rd	Virginia Beach Amphitheater	Virginia Beach	Widening	2	4	Committed for 2045 LRTP
2045-34	15829	Indian River Road - Phase VII-A	Lynnhaven Pkwy	Elbow Rd	Virginia Beach	Widening	2	4	Committed for 2045 LRTP
2045-35	111711	Laskin Road - Phase IA	Republic Rd	Fremac Dr	Virginia Beach	Widening	4	8	Project under construction
2045-36	107352	Princess Anne Rd - Phase VII	Fisher Arch	General Booth Blvd	Virginia Beach	Widening	2	4	Project under construction
2045-264		Monticello Ave	Richmond Rd (US 60)	Treyburn Dr	Williamsburg	Widening	3	5	Committed for 2045 LRTP
2045-37	112658	Capitol Landing Rd Corridor Improvements	Bypass Rd	Merrimac Trail	Williamsburg	Widening	4	2	Committed (fully funded in SYIP)
2045-38	89062	Ironbound Rd (Rte 615)	Richmond Rd (US 60)	DePue Dr (formerly Longhill Connector)	Williamsburg	Widening, including multi-use path	2	3	Committed (fully funded in SYIP)
2045-39	115339	Lafayette St	Richmond Rd (US 60)	Virginia Ave	Williamsburg	Widening, including shared-use path for bicycle accommodation on east side	2	2	Committed for 2045 LRTP
2045-40		G.W. Mem Hwy (US 17)	Wolf Trap Rd	Old York-Hampton Hwy	York County	Widening	4	6	Committed for 2045 LRTP

2045 LRTP COMMITTED PROJECTS

2045 LRTP COMMITTED PROJECTS									
2045 PROJECT ID	UPC	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	COMMITTED STATUS
2045-42		Victory Blvd (Rte 171)	G.W. Mem Hwy (US 17)	Hampton Hwy (Rte 134)	York County	Widening	5	6	Committed for 2045 LRTP
INTERCHANGE									
2045-4		I-64/I-264 Interchange - Phase II	N/A	N/A	Multi-jurisdictional	Interchange improvements Newtown Rd to Witchduck Rd, eliminating weave and adding Greenwich Rd/Cleveland St flyover	5	6	Committed for 2045 LRTP
2045-9		Mt. Pleasant Rd/Great Bridge Bypass	N/A	N/A	Chesapeake	Interchange improvements 168 NB and EB and WB clover-leaf ramps on Mt. Pleasant Rd	5	6	Committed for 2045 LRTP
INTERMODAL/FREIGHT									
2045-10		Freeman Ave Railroad Overpass	N/A	N/A	Chesapeake	Grade separation between roadway and railroad	2	2	Committed for 2045 LRTP
2045-24	110634	Nansemond Pkwy (Rte 337)	N/A	N/A	Suffolk	Highway-rail grade separation	N/A	N/A	Committed (fully funded in SYIP)
ACTIVE TRANSPORTATION									
2045-13	102980	Pocahontas Trail Reconstruction	James City County Fire Station #2	James River Elementary School	James City County	5' sidewalk and 5' paved shoulder with pedestrian lighting and bus pull-offs	N/A	N/A	Committed for 2045 LRTP
2045-20	102985	Westhaven Bicycle Improvements	Clifford St at Powhatan Ave	Bart St at Airline Blvd	Portsmouth	Shared use path	N/A	N/A	Committed for 2045 LRTP
2045-25	113196	Sandbridge Road - Nimmo VII-A	Sandpiper Rd	1.10 miles west of Sandpiper Rd	Virginia Beach	On-road bike lanes and shared used path on one side of the roadway	2	2	Committed (fully funded in SYIP)
2045-26	113469	Violet Bank Dr Bike Trail	Kittery Dr	Selwood Dr	Virginia Beach	New faciilty - Shared Use Path	N/A	N/A	Committed for 2045 LRTP

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CHAPTER 5: 2045 LRTP PROJECT PRIORITIZATION SCORES

The following section contains maps and summary tables of Project Prioritization scores for the 2045 LRTP Candidate Projects. Projects are ranked by category and by system, based on Total Score (incorporating scenario variability). Top scores in each component (Project Utility, Economic Vitality, Project Viability) are also highlighted. Top-ranking candidate projects in each project category (by system) are also noted.

2045 LRTP CANDIDATE PROJECTS

BRIDGES AND TUNNELS

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
INTERSTATE											
2045-402	I-664/MMMBT	Bowers Hill Interchange	Hampton Coliseum	Multi-jurisdictional	Widening (extension of the Hampton Roads Express Lanes network)	4	6/8	78	88	40	206
2045-401	I-564/I-664 Connector and VA-164 Connector	I-564/MMMBT	VA-164	Multi-jurisdictional	New facility	0	4	70	86	33	189
2045-406	I-64 Southside Widening Including High Rise Bridge Phase II	I-464	I-664	Multi-jurisdictional	Widening	6	8	78	61	49	188
2045-403	I-664/MMMBT	Terminal Ave	College Dr	Multi-jurisdictional	Widening (extension of the Hampton Roads Express Lanes network)	4	6/8	66	79	38	183
PRIMARY											
2045-409	Mills Godwin Bridge	Quail Hollow	Waterview Rd	Suffolk	Widening	2	4	37	51	30	118
2045-404	Upper James River Bridge	James City County/ Lower Peninsula	Surry County/Southside	Multi-jurisdictional	New facility with walkable/bikeable options	0	4	55	44	16	115
2045-405	Sidney Bertram Hazelwood Sr. Bridge	N/A	N/A	Multi-jurisdictional	Widening	2	4	37	21	32	90
URBAN											
2045-408	Kings Hwy Bridge	Godwin Blvd (Rte 10)	Kings Hwy	Suffolk	New facility (replacing previously closed facility)	0	2	33	30	30	93

TOP PRIORITIZED BRIDGE AND TUNNEL CANDIDATE PROJECT (INTERSTATE)
2045-402: I-664/MMMBT

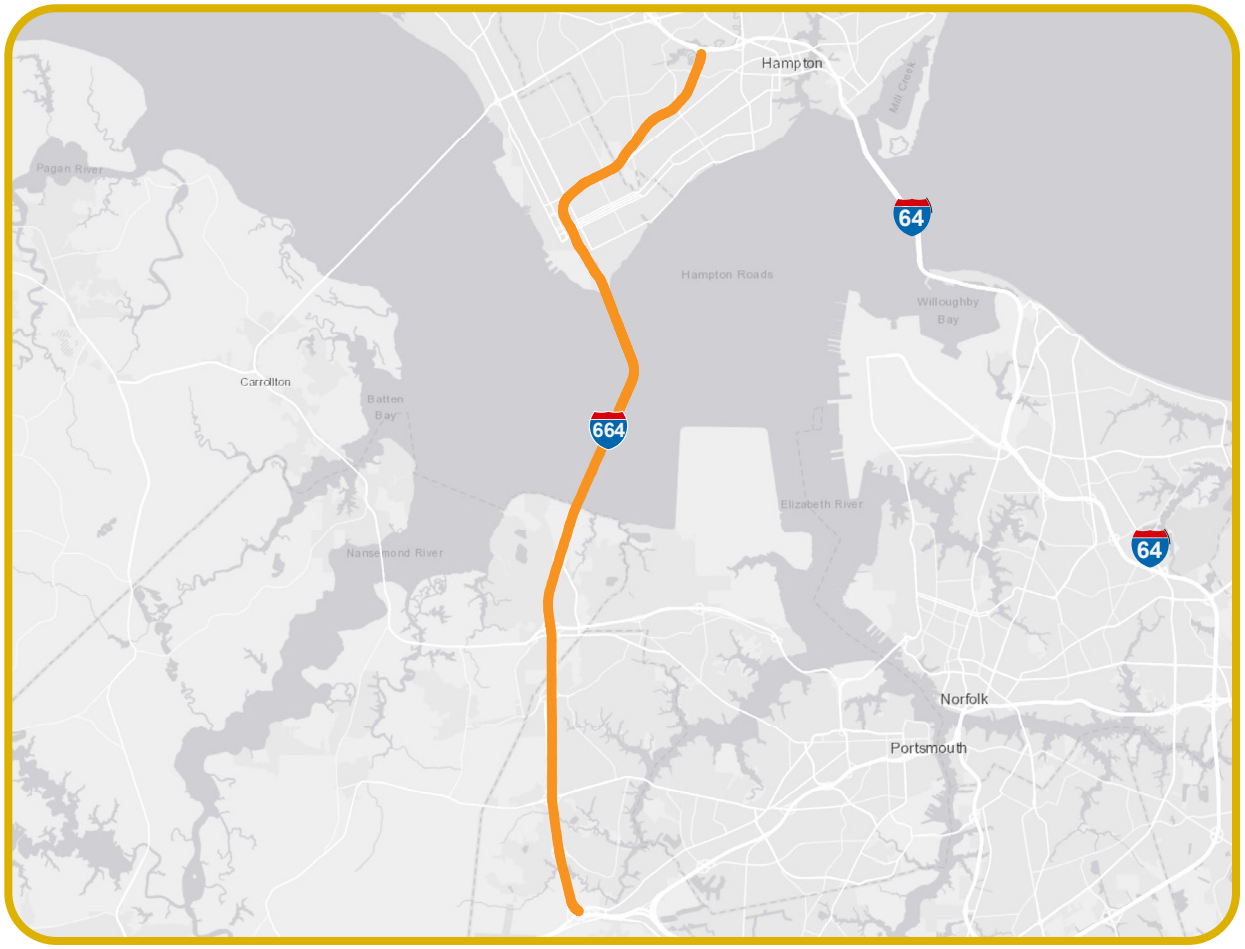
PROJECT DETAILS

PROJECT DESCRIPTION
Proposed widening from four up to eight lanes to include the Hampton Roads Express Lanes Network

From Bowers Hill Interchange to Hampton Coliseum

PROJECT CATEGORY/SYSTEM:
Bridge & Tunnel - Interstate

BENEFITS:
- Adds capacity across the Hampton Roads Harbor and improves the movement of people and goods from the Peninsula to the Southside
- Improves regional congestion, travel time, and reliability
- Improves strategic military connectivity
- Increases regional accessibility, including to high density employment, major population, and economic distress areas
- Improves transit access across the Hampton Roads Harbor
- Improves safety and provides enhanced evacuation route for the region
- Project will have a positive impact on the region's economy and will help meet growing needs of the Port



ESTIMATED COST

CURRENT YEAR
$4,538 Million

YEAR OF EXPENDITURE
$8,195 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
78	88	40	206

TOP PRIORITIZED BRIDGE AND TUNNEL CANDIDATE PROJECT (PRIMARY)
2045-409: MILLS GODWIN BRIDGE

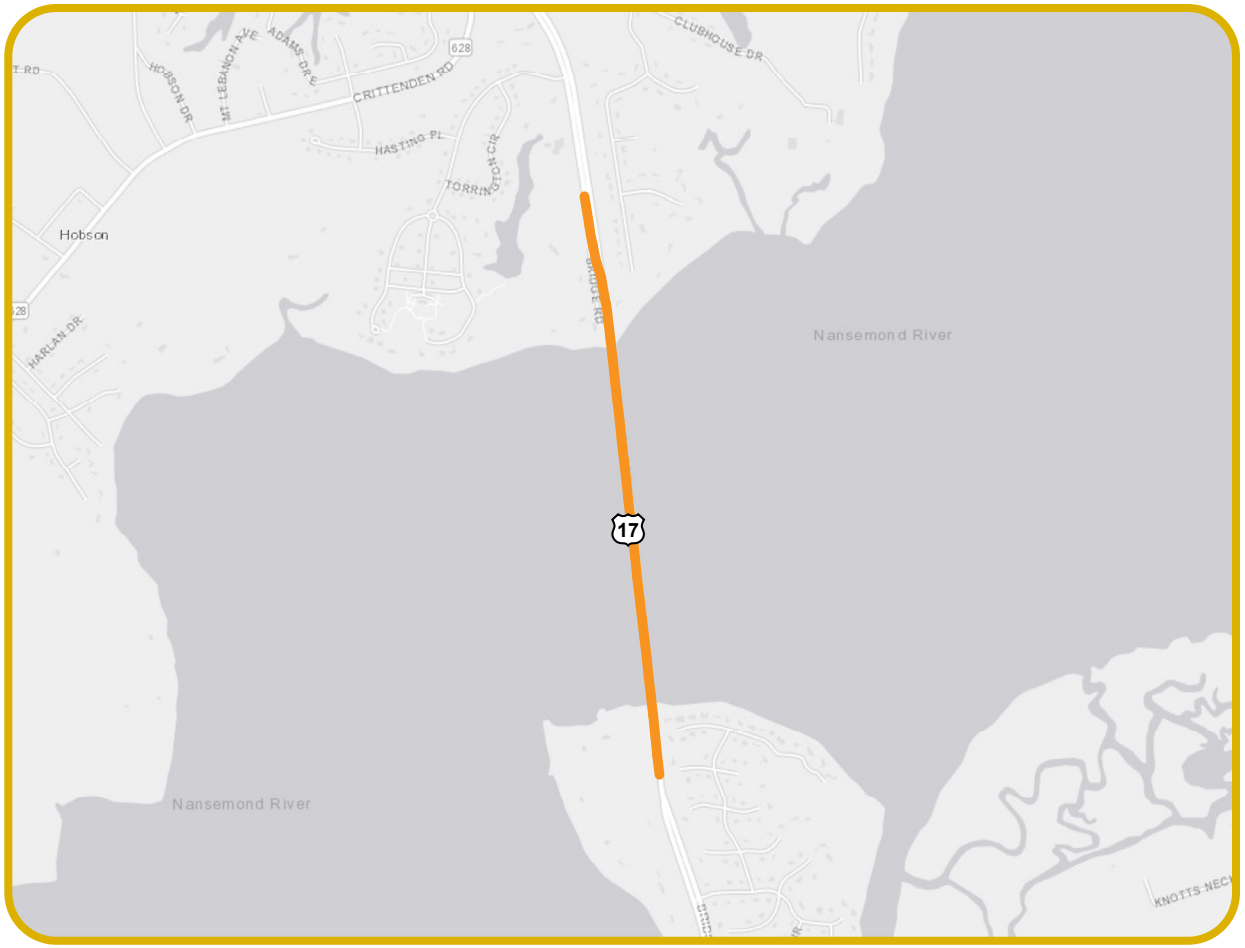
PROJECT DETAILS

PROJECT DESCRIPTION
Bridge widening from two to four lanes to address congestion

From Quail Hollow to Waterview Road

PROJECT CATEGORY/SYSTEM:
Bridge & Tunnel - Primary

BENEFITS
- Adds capacity across the Nansemond River, improving connectivity between Suffolk and Isle of Wight
- Improves regional congestion, travel time, and reliability
- Improves the movement of both people and freight
- Increases regional accessibility
- Improves safety and provides enhanced evacuation route for the region



ESTIMATED COST

CURRENT YEAR
$161 Million

YEAR OF EXPENDITURE
$230 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
37	51	30	118

TOP PRIORITIZED BRIDGE AND TUNNEL CANDIDATE PROJECT (URBAN)
2045-408: KINGS HIGHWAY BRIDGE

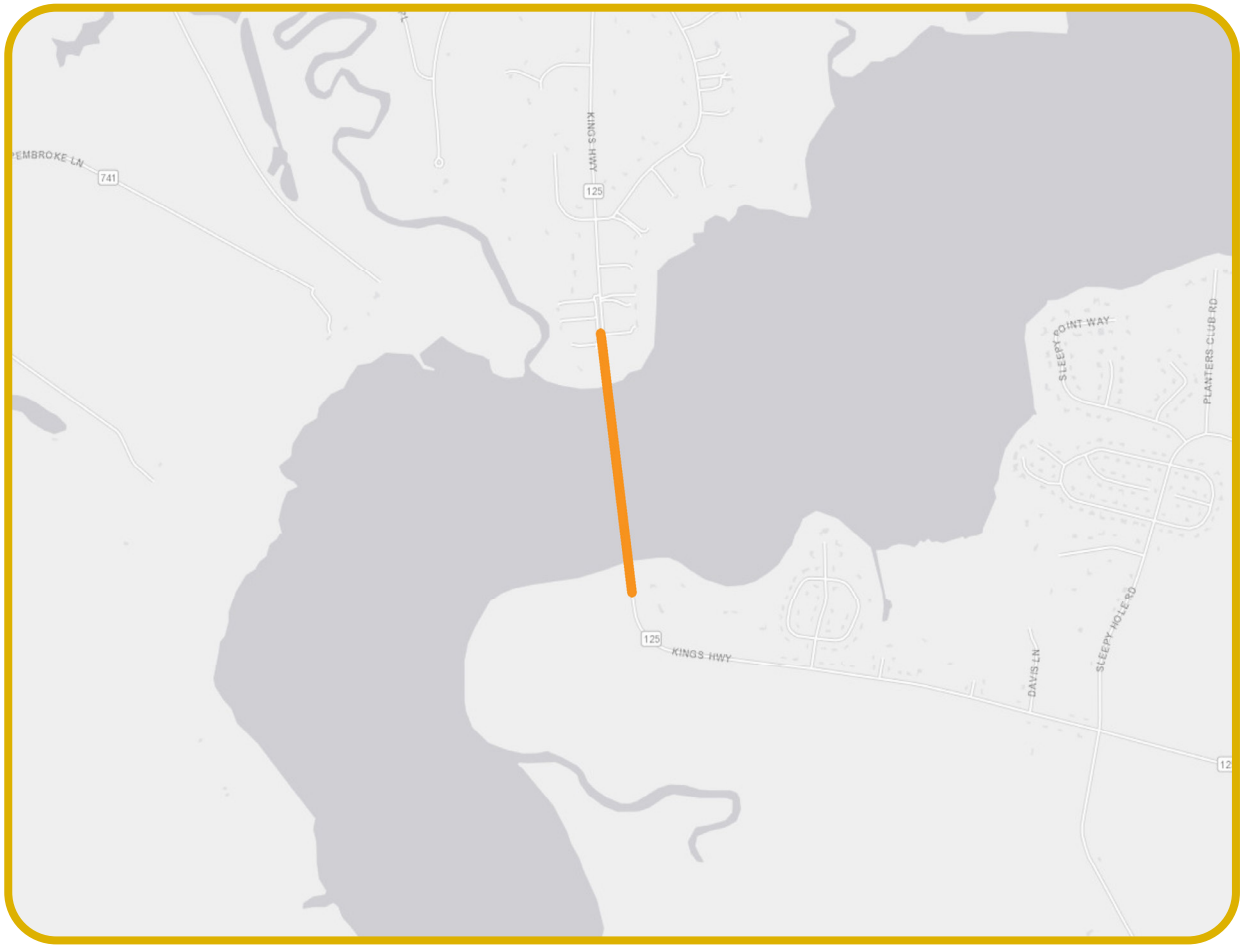
PROJECT DETAILS

PROJECT DESCRIPTION
Provides for new alignment for Kings Highway Bridge that was previously closed due to deteriorated condition

From Godwin Boulevard to Kings Hwy

PROJECT CATEGORY/SYSTEM:
Bridges & Tunnels - Urban

BENEFITS:
- Replaces a key connection in the City of Suffolk
- Improves travel time and delay for that area of the region
- Addresses an accessibility gap for that area of the region



ESTIMATED COST

CURRENT YEAR
$106 Million

YEAR OF EXPENDITURE
$151 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
33	30	30	93

TABLE 3: 2045 LRTP CANDIDATE PROJECTS

HIGHWAY

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
INTERSTATE											
2045-110	I-664 Widening	Hampton Coliseum	Terminal Ave	Multi-jurisdictional	Widening	6	8	76	77	39	192
2045-129	Chesapeake Expressway Widening	I-64	Hillcrest Pkwy	Chesapeake	Widening	4	6/8	76	68	31	175
2045-104	I-264 Widening	Norfolk	Virginia Beach	Multi-jurisdictional	Widening	8	10 or 12	66	77	26	169
2045-109	I-664 Widening	Bowers Hill	College Dr	Multi-jurisdictional	Widening	4/6	6	67	51	39	157
2045-160	I-64 Peninsula Widening Segment 4	1.15 miles west of Route 199, Lightfoot (Exit 234)	Hampton Roads MPA Boundary	Multi-jurisdictional	Widening	4	6	47	62	38	147
2045-232	I-264 Preferred Alternative	Independence Blvd	Rosemont Rd	Virginia Beach	Widening	6/8	8/10	61	55	31	147
2045-119	VA-164 Widening	Pinners Point or APM Interchange	I-664	Multi-jurisdictional	Widening	4	6	52	62	15	129
2045-210	Suffolk/ US 58 Bypass	Terminus west of SPSA landfill	US 460 Interchange	Suffolk	Widening	4	6	43	51	26	120
2045-117	US Route 460 Relocated	Suffolk Bypass	West of Zuni	Multi-jurisdictional	New 4-lane divided highway	0	4	43	61	14	118
2045-140	I-87	Chesapeake Expressway	North Carolina Border	Chesapeake	Bring Dominion Blvd to interstate standards	4	4	41	30	16	87
PRIMARY											
2045-171	J. Clyde Morris Blvd /G.W. Hwy (US 17) Widening	I-64	York CL	Newport News	Improve interstate access	4	6	62	47	58	167
2045-135	G.W. Hwy (US 17)	Yadkin Rd	Canal Dr	Chesapeake	Widening with pedestrian accomodations	2	4	65	42	56	163
2045-151	G.W. Mem Hwy (US 17)	1 mi North of Coleman Bridge	Main St (@ Walmart)	Gloucester	Widening	4	6	55	56	47	158
2045-122	Battlefield Blvd	Johnstown Rd	I-64	Chesapeake	Widening	4/6	6/8	68	54	35	157
2045-145	Military Hwy	Campostella Rd	Battlefield Blvd	Chesapeake	Widening	4	8	58	48	50	156
2045-246	Laskin Road - Phase III	Republic Rd	I-264	Virginia Beach	Widening	4	6	49	51	54	154
2045-144	Military Hwy	Allison Dr	Virginia Beach CL	Chesapeake	Widening with pedestrian accomodations	4	6	52	60	38	150
2045-146	Military Hwy	Virginia Beach CL	I-464	Chesapeake	Widening with bike/ped facilities	4	8	60	54	34	148
2045-157	US 17/Carrollton Blvd (part of Route 17 corridor)	End of Chuckatuck Creek Bridge	James River Bridge	Isle of Wight County	Widening	4	6	57	52	34	143
2045-245	Laskin Road - Phase II	Oriole Dr	30th/31st St	Virginia Beach	Widening	4	6	39	39	61	139
2045-244	Laskin Road - Phase IB	Laskin Rd Bridge	Oriole Dr	Virginia Beach	Widening	4	6	41	43	55	139
2045-234	Independence Blvd	Pembroke Blvd	Virginia Beach Blvd	Virginia Beach	Widening	6	8	49	60	30	139
2045-200	Elm Ave Realignment Project	Victory Blvd (Rte 239)	G.W. Hwy (US 17)	Portsmouth	Widening, including intersection improvements at Navy Gates 29 and 36	2	4	44	34	60	138
2045-266	G.W. Mem Hwy (US 17)	Fort Eustis Blvd (Rte 105)	Coleman Bridge	York County	Widening	4	6	48	61	27	136
2045-180	Oyster Point Rd Widening Phase II	Warwick Blvd	Radcliff Ln	Newport News	Widening	4	6	56	52	28	136
2045-204	Bridge Rd (US 17)	Mills Godwin Bridge	Chesapeake CL	Suffolk	Widening	4	6	54	42	34	130

2045 LRTP CANDIDATE PROJECTS

HIGHWAY

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-268	J. Clyde Morris Blvd/G.W. Mem Hwy (US 17)	Newport News CL	Hampton Hwy (Rte 134)	York County	Widening	4	6	55	41	32	128
2045-116	US 460/58/13 Connector	Bowers Hill Interchange	Eastern end of Suffolk Bypass	Multi-jurisdictional	Safety improvements along corridor, including interchange at regional landfill	6	6	44	44	38	126
2045-188	Warwick Blvd Widening Phase III	Bland Blvd	Beechmont Dr	Newport News	Widening	4	6	62	52	12	126
2045-195	Little Creek Rd	Tidewater Dr	Shore Dr	Norfolk	Widening with pedestrian safety enhancements	4	6	42	49	32	123
2045-233	Independence Blvd	Haygood Rd	Northampton Blvd	Virginia Beach	Widening	4	6	45	39	39	123
2045-253	North Great Neck	Virginia Beach Blvd	Wolfsnare Rd	Virginia Beach	Widening	4	6	36	56	30	122
2045-120	Victory Blvd (Rte 171)	Poquoson CL	Hampton Hwy (Rte 134)	Multi-jurisdictional	Widening	2	4	51	23	47	121
2045-125	Cedar Rd	Holt Dr	Battlefield Blvd	Chesapeake	Widening with bike/ped facilities	2	4	48	20	50	118
2045-191	Warwick Blvd Widening Phase VI	Lees Mill Dr	Yorktown Rd	Newport News	Widening, including interchange work	2	4	56	47	11	114
2045-170	J. Clyde Morris Blvd Widening	Jefferson Ave	Warwick Blvd	Newport News	Widening, including CSX Overpass work	4	6	43	39	30	112
2045-207	Godwin Blvd	Suffolk Bypass	Kings Fork Rd	Suffolk	Widening	4	6	44	32	36	112
2045-174	Jefferson Ave Widening Phase II	Industrial Park Dr	Fort Eustis Blvd	Newport News	Widening	4	6	44	37	31	112
2045-187	Warwick Blvd Widening Phase II	Oyster Point Rd	Bland Blvd	Newport News	Widening	4	6	60	38	13	111
2045-199	Virginia Beach Blvd	Glenrock Rd	George St	Norfolk	Remove service lanes, widen with improved pedestrian accomodations	4	6	62	40	9	111
2045-179	Oyster Point Rd Widening Phase I	Operations Dr	Waterman Dr	Newport News	Widening	4	6	52	38	18	108
2045-267	G.W. Mem Hwy (US 17)	Denbigh Blvd (Rte 173)	Fort Eustis Blvd (Rte 105)	York County	Widening	4	6	41	37	30	108
2045-118	US Route 60 Relocation	James City County Line	Green Mount Pkwy	James City County	New facility (congestion relief for Route 60, enhanced access for freight movement)	0	4	35	44	29	108
2045-147	Mt Pleasant Rd, Phase 1	Chesapeake Expressway	Etheridge Rd	Chesapeake	Widening with pedestrian accomodations	2	4 or 6	47	23	37	107
2045-196	Monticello Ave	St Pauls Blvd	Virginia Beach Blvd	Norfolk	Widening	4	6	41	47	18	106
2045-148	Mt Pleasant Rd, Phase 2	Etheridge Rd	Centerville Tnpk	Chesapeake	Widening with bike/ped facilities	2	4 or 6	46	23	36	105
2045-181	Oyster Point Rd Widening Phase III	CSX Overpass	CSX Overpass	Newport News	Widening	4	6	51	42	12	105
2045-256	Princess Anne Road	Providence Rd	Salem Rd	Virginia Beach	Widening	4	6	37	22	44	103
2045-153	Proposed parallel facility for Route 17	TBD	TBD	Gloucester	New facility	0	TBD	40	38	25	103
2045-121	Victory Blvd (Rte 171)	Wythe Creek Rd (Rte 172)	York County CL	Multi-jurisdictional	Widening	2	4	42	8	51	101
2045-173	Jefferson Ave Widening Phase I	Green Grove Ln	Industrial Park Dr	Newport News	Widening	4	6	41	29	30	100
2045-156	Benns Church Blvd	Turner Dr (Rte 644)	Church St S	Isle of Wight - Smithfield	Widening	4	6	41	22	36	99
2045-197	Newtown Rd	I-264	Virginia Beach Blvd	Norfolk	Widening	4	6	59	28	11	98
2045-152	G.W. Mem Hwy (US 17)	Main St (@ Walmart)	Ark Rd	Gloucester	Widening and safety improvements	4	6	40	26	31	97

2045 LRTP CANDIDATE PROJECTS

HIGHWAY

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-186	Warwick Blvd Widening Phase I	Nettles Dr	Oyster Point Rd	Newport News	Widening	4	6	46	32	18	96
2045-205	Bridge Rd (US 17)	Mills Godwin Bridge	Isle of Wight CL	Suffolk	Widening	4	6	34	21	41	96
2045-198	Tidewater Dr	City Hall Ave	Norview Ave	Norfolk	Widening	4	6	47	38	10	95
2045-189	Warwick Blvd Widening Phase IV	Beechmont Dr	Atkinson Way	Newport News	Widening	4	6	49	34	10	93
2045-158	US 258	US 460	Sunset Dr	Isle of Wight County	Widening	2	4	39	20	30	89
2045-190	Warwick Blvd Widening Phase V	Atkinson Way	Lees Mill Dr	Newport News	Widening	4	6	47	34	8	89
2045-192	Ballentine Blvd	I-264	Virginia Beach Blvd	Norfolk	Widening	4	6	39	22	27	88
2045-212	Whaleyville Blvd (US 13) - Phase 2	Carolina Rd (Rte 32)	Village of Whaleyville	Suffolk	Corridor improvements to improve inter-state passenger and freight movements	2	4	19	38	29	86
2045-168	Harpersville Rd Widening	Jefferson Ave	Warwick Blvd	Newport News	Widening, including new CSX Overpass	2	4	31	20	29	80
2045-209	Nansemond Pkwy (Rte 337)	Shoulder's Hill Rd (Rte 626)	Wilroy Rd (Rte 642)	Suffolk	Widening	2	4	27	26	27	80
2045-208	Godwin Blvd - Phase 1	Holly Hill Ln	Village of Chuckatuck	Suffolk	Widening	2	4	32	21	27	80
2045-211	Whaleyville Blvd (US 13) - Phase 1	Village of Whaleyville	North Carolina Border	Suffolk	Corridor improvements to improve inter-state passenger and freight movements	2	4	23	25	29	77
2045-101	Denbigh Blvd (Rte 173)	Newport News CL	G.W. Mem Hwy (US 17)	Multi-jurisdictional	Widening	2	4	27	14	30	71
2045-167	Denbigh Blvd Widening Phase II	CSX Overpass East Abuttment	Jefferson Ave	Newport News	Widening	4	6	34	20	16	70
2045-166	Denbigh Blvd Widening Phase I	Warwick Blvd	CSX Overpass West Abuttment	Newport News	Widening	4	6	35	23	10	68
2045-103	Godwin Blvd - Phase 2	Village of Chuckatuck	Isle of Wight CL	Multi-jurisdictional	Widening	2	4	19	16	4	39
SECONDARY											
2045-265	Commonwealth Dr Extension	G.W. Mem Hwy (U.S. 17)	Commonwealth Dr	York County	New facility/roadway extension	0	4	42	23	44	109
2045-111	Mooretown Rd Extension	Lightfoot Rd	Croaker Rd	Multi-jurisdictional	New facility/roadway extension	0	4	39	40	27	106
2045-161	Longhill Rd (Phase 2)	Olde Towne Rd	Warhill Trail	James City County	Widening	2	4	30	23	30	83
2045-202	Battery Park Rd	S. Church St	Nike Park Rd	Isle of Wight - Smithfield	Widening	2	4	29	14	31	74
2045-162	Longhill Rd (Phase 3)	Warhill Trail	Centerville Rd	James City County	Widening	2	4	29	11	30	70
URBAN											
2045-114	Greenbelt Segment - Phase I	London Bridge Rd	Princess Anne Rd.	Virginia Beach	New alignment to relieve congestion, provide new access	0	4	76	54	42	172
2045-235	Indian River Rd	Centerville Tnpk	Ferrell Pkwy	Virginia Beach	Widening	6	8	51	60	40	151
2045-236	Indian River Rd	Centerville Tnpk	I-64	Virginia Beach	Widening	8	10	50	57	41	148
2045-114A	Greenbelt - Phase II	Princess Anne Rd	Chesapeake CL	Virginia Beach	New alignment to relieve congestion, provide new access	0	4	62	44	38	144
2045-219	Dam Neck Road - Phase III	Drakesmile Rd	London Bridge Rd	Virginia Beach	Widening	4	6	51	51	40	142

2045 LRTP CANDIDATE PROJECTS

HIGHWAY

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-218	Dam Neck Road - Phase II	Holland Rd	Drakesmile Rd	Virginia Beach	Widening	4	6	57	42	42	141
2045-220	Drakesmile Extended - Phase I	Dam Neck Rd	Holland Rd	Virginia Beach	New facility	0	4	55	30	50	135
2045-137	Greenbrier Pkwy	Volvo Pkwy	Woodlake Dr	Chesapeake	Widening	6	8	59	42	33	134
2045-227	General Booth Blvd - Phase II	Oceana Blvd	Dam Neck Rd	Virginia Beach	Widening	6	8	45	44	43	132
2045-258	Rosemont Rd	Virginia Beach Blvd	Holland Rd	Virginia Beach	Widening	4	6	51	35	43	129
2045-262	Shore Drive - Phase II	Pleasure House Road	Treasure Island Drive	Virginia Beach	Widening	4	6	40	42	46	128
2045-126	Centerville Tnpk	Mount Pleasant Rd	Virginia Beach CL	Chesapeake	Widening	2	6	67	29	31	127
2045-127	Centerville Tnpk - Phase 1	Mt Pleasant Rd	Elbow Rd	Chesapeake	Widening with bike/ped facilities, including replacement of existing bridge	2	6	70	26	29	125
2045-230	Holland Rd - Phase III	Rosemont Rd	Independence Blvd	Virginia Beach	Widening	4	6	63	22	38	123
2045-217	Dam Neck Road - Phase I	Princess Anne Rd	Holland Rd	Virginia Beach	Widening	4	6	43	38	41	122
2045-176	Lucas Creek Rd Extension	Denbigh Blvd (Rte 173)	Atkinson Blvd	Newport News	New facility/roadway extension, including bridge	0	4	46	36	35	117
2045-150	Volvo Pkwy Widening	Battlefield Blvd	Greenbrier Pkwy	Chesapeake	Widening with bike/ped facilities	4	6	47	25	42	114
2045-225	First Colonial Rd	Old Donation Pkwy	Laskin Rd	Virginia Beach	Widening	4	6	44	31	39	114
2045-221	Drakesmile Extended - Phase II	Holland Rd	Princess Anne Rd	Virginia Beach	New facility	0	4	44	19	50	113
2045-149	Volvo Pkwy Extended	Volvo Pkwy	Medical Pkwy	Chesapeake	New facility/roadway extension with bike/ped facilities	0	4	45	27	41	113
2045-248	Lynnhaven Pkwy	Holland Rd	Princess Anne Rd	Virginia Beach	Widening	4	6	50	25	38	113
2045-112	Newtown Road	Baker Rd	Virginia Beach Blvd	Multi-jurisdictional	Widening	4	6	51	39	23	113
2045-175	Liberty Pkwy Extension	Oyster Point Rd	Freedom Way	Newport News	New facility	0	2	23	32	56	111
2045-215	Birdneck Road	I-264	Virginia Beach Blvd	Virginia Beach	Widening	4	6	34	29	46	109
2045-229	General Booth Blvd Phase IV	London Bridge Rd	Nimmo Pkwy	Virginia Beach	Widening	4	6	45	21	43	109
2045-141	Johnstown Rd - Phase 1	Battlefield Blvd	Parker Rd	Chesapeake	Widening with bike/ped facilities	2	4	38	20	47	105
2045-223	Ferrell Pkwy	Indian Lakes Blvd	Pleasant Valley Rd	Virginia Beach	Widening	4	6	32	34	39	105
2045-128	Centerville Tnpk - Phase 2	Elbow Rd	Virginia Beach CL	Chesapeake	Widening with bike/ped facilities	2	4	42	26	35	103
2045-201	Harper Ave	Rte 164/US 58	Portsmouth Marine Terminal	Portsmouth	Widening	2	3 or 4	35	28	39	102
2045-254	North Lynnhaven Rd	Virginia Beach Blvd	Lynnhaven Pkwy	Virginia Beach	Widening	2	4	37	31	34	102
2045-143	Johnstown Rd - Phase 3	Hanbury Rd	Waters Rd	Chesapeake	Widening with bike/ped facilities	2	4	32	23	47	102
2045-224	Ferrell Pkwy	Pleasant Valley Rd	Salem Rd	Virginia Beach	Widening	4	6	35	38	28	101
2045-247	London Bridge Road	Dam Neck Rd	Shipps Corner Rd	Virginia Beach	Widening	2	4	34	29	37	100

2045 LRTP CANDIDATE PROJECTS

HIGHWAY

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-142	Johnstown Rd - Phase 2	Parker Rd	Hanbury Rd	Chesapeake	Widening with bike/ped facilities	2	4	35	17	47	99
2045-231	Holland Road	Dam Neck Rd	Rosemont Rd	Virginia Beach	Widening	4	6	41	21	36	98
2045-239	Jeanne St	Constitution Dr	Independence Blvd	Virginia Beach	Widening	3	4	30	22	44	96
2045-154	Coliseum Dr Extension B	Butler Farm Rd	N. Campus Pkwy/ Magruder Blvd	Hampton	New Facility	0	4	41	16	39	96
2045-131	Eden Way Extended	Eden Way North	Sam's Circle	Chesapeake	New facility/roadway extension with bike/ped facilities	0	4	28	30	36	94
2045-226	First Colonial Rd	Old Donation Pkwy	Great Neck Rd	Virginia Beach	Widening	4	6	41	23	30	94
2045-134	Elbow Rd - Phase 2 East - existing alignment	Butts Station Rd	Centerville Rd	Chesapeake	Widening with bike/ped facilities	2	4	27	20	46	93
2045-136	Green Tree Rd Extension	Kempsville Rd	Clearfield Ave	Chesapeake	New facility/roadway extension with bike/ped facilities	0	4	18	31	43	92
2045-124	Bruce Rd	Tyre Neck Rd	Taylor Rd	Chesapeake	Widening with bike/ped facilities	2	4	31	23	37	91
2045-252	Nimmo Pkwy - Phase VIIB	Albuquerque Rd	Sandbridge Rd - Nimmo VIIA	Virginia Beach	New Facility	0	2	27	24	39	90
2045-216	Clearfield Ave	Virginia Beach Blvd	Cleveland St	Virginia Beach	Widening	2	4	26	31	32	89
2045-257	Providence Road	Kempsville Rd	Princess Anne Rd	Virginia Beach	Widening	2	4	33	20	35	88
2045-138	Hanbury Rd	Johnstown Rd	Battlefield Blvd	Chesapeake	Widening with bike/ped facilities	2	4	36	17	35	88
2045-228	General Booth Blvd - Phase I	Birdneck Rd	Oceana Blvd	Virginia Beach	Widening	4	6	26	32	26	84
2045-132	Elbow Rd	Butts Station Rd	Virginia Beach CL	Chesapeake	Widening with additional safety improvements	2	4	34	23	27	84
2045-213	Wilroy Rd (Rte 642)	Nansemond Pkwy (Rte 337)	Constance Rd	Suffolk	Widening	2	4	24	29	30	83
2045-133	Elbow Rd - Phase 1 West - existing alignment	Centerville Tnpk	Virginia Beach CL	Chesapeake	Widening with bike/ped facilities	2	4	28	23	31	82
2045-251	Nimmo Pkwy - Phase III	Landstown Rd Extended	Salem Rd	Virginia Beach	New Facility	0	2	28	16	36	80
2045-169	Harpersville Rd Widening	J Clyde Morris Blvd	Saunders Rd	Newport News	Widening	2	4	44	11	25	80
2045-261	Salem Road	Independence Blvd	Elbow Rd	Virginia Beach	Widening	2	4	22	17	39	78
2045-23	Shoulders Hill Rd (Rte 626)	Nansemond Pkwy (Rte 337)	Bridge Rd (US 17)	Suffolk	Widening	2	4	27	20	29	76
2045-165	Chestnut Ave	I-664	Briarfield Rd	Newport News	Widening	2	4	34	20	22	76
2045-243	Landstown Rd Extended - Phase IV	North Landing Rd	Indian River Rd	Virginia Beach	Widening from 2 lanes to 4 lanes.	0	4	24	22	30	76
2045-260	Salem Road - Phase II	Elbow Rd	North Landing Rd	Virginia Beach	Widening	2	4	24	17	34	75
2045-182	Patrick Henry Dr Widening	Bland Blvd	Turnberry Blvd	Newport News	Widening	2	4	19	29	27	75
2045-250	Nimmo Pkwy - Phase II	West Neck Rd	Landstown Rd Extended	Virginia Beach	New Facility	0	2	19	16	39	74
2045-242	Landstown Rd Extended - Phase III	Nimmo Pkwy	North Landing Rd	Virginia Beach	Widening from 2 lanes to 4 lanes.	0	4	20	22	32	74
2045-238	Indian River Road	Elbow Rd	North Landing Rd	Virginia Beach	Widening	2	4	32	17	24	73

2045 LRTP CANDIDATE PROJECTS

HIGHWAY

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	EXISTING LANES	PROPOSED LANES	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-214	Wilroy Rd (Rte 642)	Suffolk Bypass	Nansemond Pkwy	Suffolk	Widening	2	4	24	14	32	70
2045-237	Indian River Rd	West Neck Rd	North Landing Rd	Virginia Beach	Widening	2	4	34	11	24	69
2045-263	West Neck Rd	North Landing Rd	Indian River Rd	Virginia Beach	Widening	2	4	23	22	24	69
2045-163	Bland Blvd Widening	Jefferson Ave	Warwick Blvd	Newport News	Widening, including the I-64 and CSX overpass	4	6	42	18	8	68
2045-164	Briarfield Rd	Jefferson Ave	Hampton CL	Newport News	Widening	2	4	28	17	21	66
2045-130	Chesapeake Regional Airport Access Rd	West Rd	G.W. Hwy (US 17)	Chesapeake	New Facility	0	4	12	25	29	66
2045-183	Saunders Rd Widening	Harpersville Rd	Hampton CL	Newport News	Widening	2	4	18	29	19	66
2045-123	Ballahack Rd	G.W. Hwy (US 17)	Old Battlefield Blvd	Chesapeake	Widening	2	4	19	20	26	65
2045-206	Corridor Improvements - Suffolk	Northern Suffolk	Central/ Downtown Suffolk	Suffolk	New facility connecting Northern Suffolk to central/downtown Suffolk	0	4	27	10	27	64
2045-269	Harpersville Rd Widening	Saunders Rd	Hampton Roads Center Pkwy	Newport News	Widening, including I-64 overpass work	2	4	22	29	7	58
2045-241	Landstown Rd Extended - Phase II	Landstown Road	Nimmo Pkwy	Virginia Beach	New facility/roadway extension	0	4	12	16	27	55
2045-184	Turnberry Blvd Extension	McManus Blvd	Ridgewood Pkwy	Newport News	New facility/roadway extension	0	4	14	19	19	52

TOP PRIORITIZED HIGHWAY CANDIDATE PROJECT (INTERSTATE)
2045-110: I-664 WIDENING

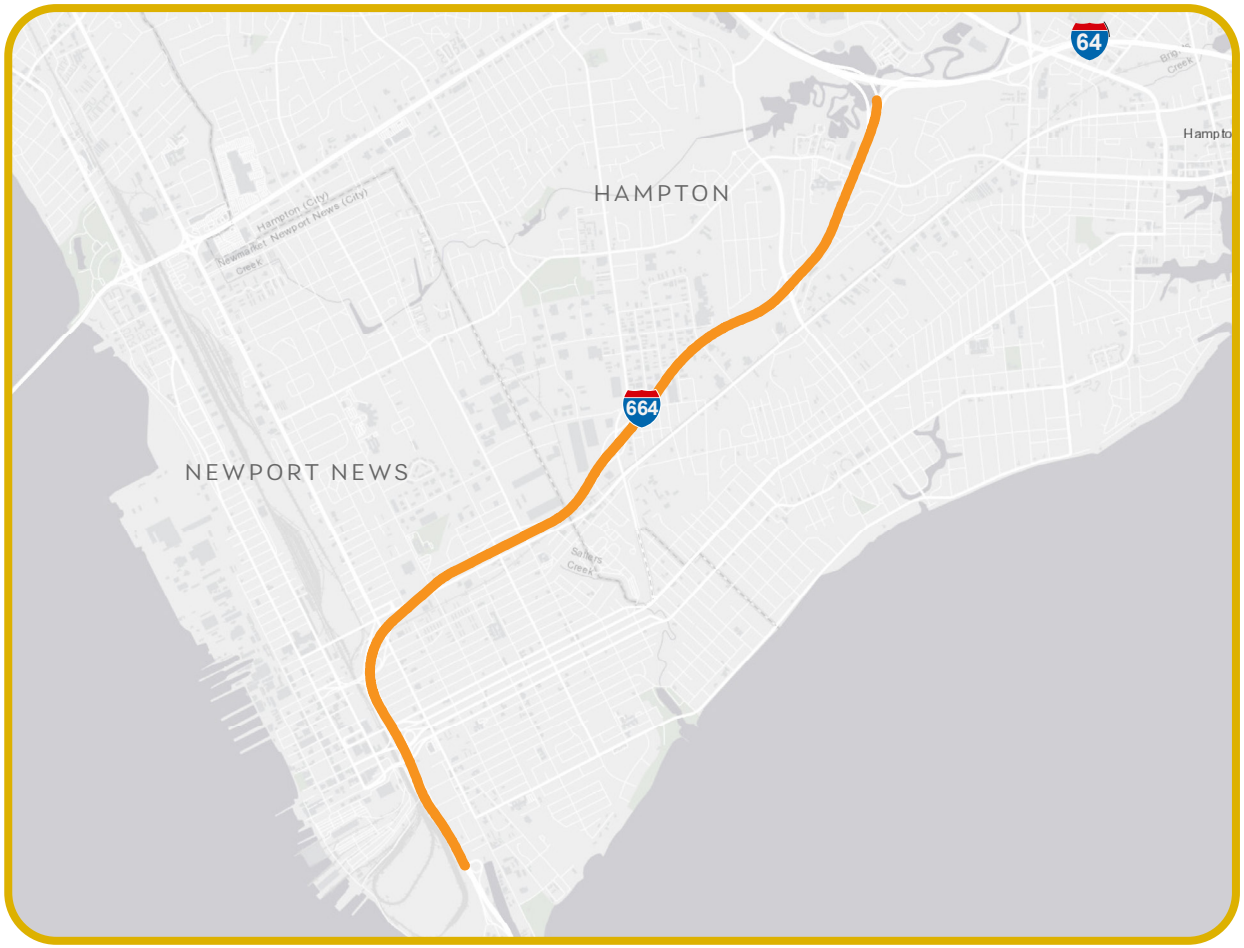
PROJECT DETAILS

PROJECT DESCRIPTION
The Peninsula segment of the larger I-664/MMMBT widening project, this section proposes to widen I-664 from six lanes to eight lanes for additional capacity and congestion relief

From Hampton Coliseum to Terminal Avenue

PROJECT CATEGORY/SYSTEM:
Highway - Interstate

BENEFITS:
- Adds capacity on the Peninsula, improving the movement of people and goods from the Peninsula to the Southside
- Improves regional congestion, travel time, and reliability
- Improves strategic military connectivity
- Increases regional accessibility, including to high density employment, major population, and economic distress areas
- Improves transit access across the Hampton Roads Harbor
- Improves safety and provides enhanced evacuation route for the region
- Project will have a positive impact on the region's economy and will help meet growing needs of the Port



ESTIMATED COST

CURRENT YEAR
$487 Million

YEAR OF EXPENDITURE
$880 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
76	77	39	192

TOP PRIORITIZED HIGHWAY CANDIDATE PROJECT (PRIMARY)
2045-171: J. CLYDE MORRIS BLVD / G.W. HWY (US 17) WIDENING

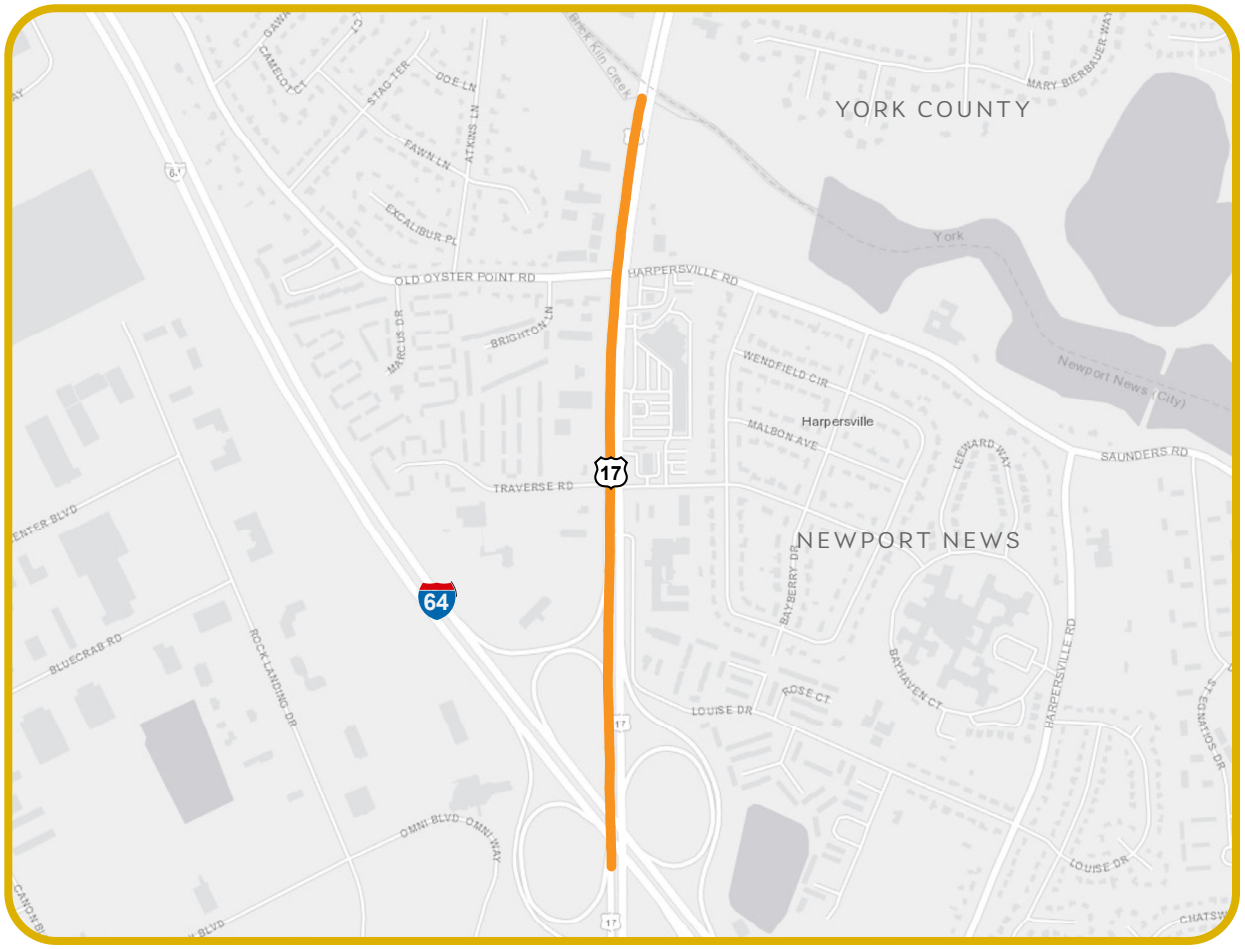
PROJECT DETAILS

PROJECT DESCRIPTION
Highway widening facility from four to six lanes, improving interstate access on US Route 17 from York County

From I-64 to York County Line

PROJECT CATEGORY/SYSTEM:
Highway - Primary

BENEFITS:
- Improves congestion and reliability
- Increases regional accessibility, including to high density employment, major population, and economic distress areas
- Improves safety and provides enhanced evacuation route for the region
- Improves the movement of both people and freight



ESTIMATED COST

CURRENT YEAR
$15 Million

YEAR OF EXPENDITURE
$21 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
62	47	58	167

TOP PRIORITIZED HIGHWAY CANDIDATE PROJECT (SECONDARY)
2045-265: COMMONWEALTH DR EXTENSION

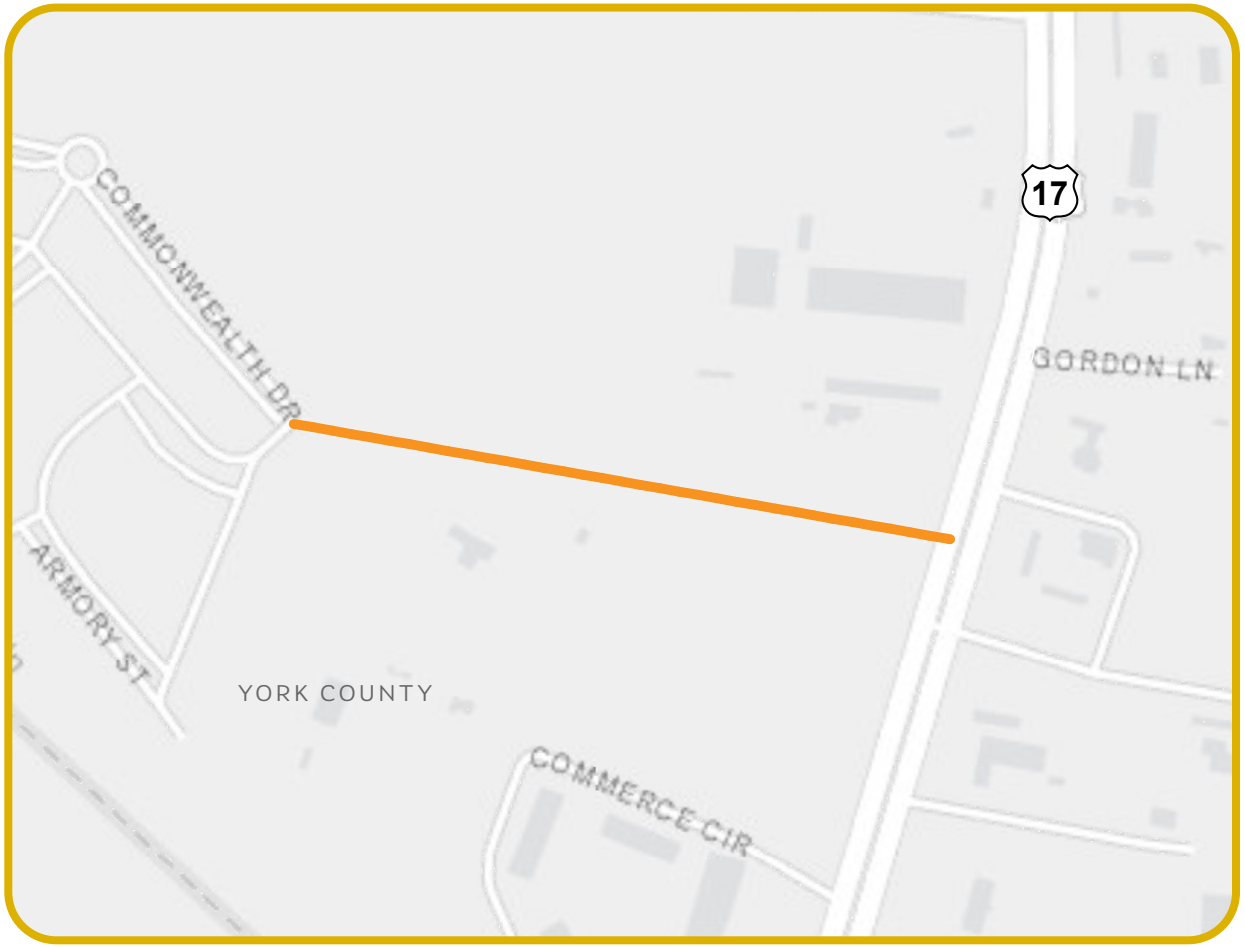
PROJECT DETAILS

PROJECT DESCRIPTION
New roadway alignment extending Commonwealth Drive, connecting Victory Blvd to US Route 17

From George Washington Memorial Highway (US Route 17) to Commonwealth Drive

PROJECT CATEGORY/SYSTEM:
Highway - Secondary

BENEFITS:
- Relieves congestion on parallel facilities
- Improves reliability for that area of the region
- Increases regional accessibility to economic distress areas



ESTIMATED COST

CURRENT YEAR
$4 Million

YEAR OF EXPENDITURE
$6 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
42	23	44	109

TOP PRIORITIZED HIGHWAY CANDIDATE PROJECT (URBAN)
2045-114: GREENBELT SEGMENT - PHASE I

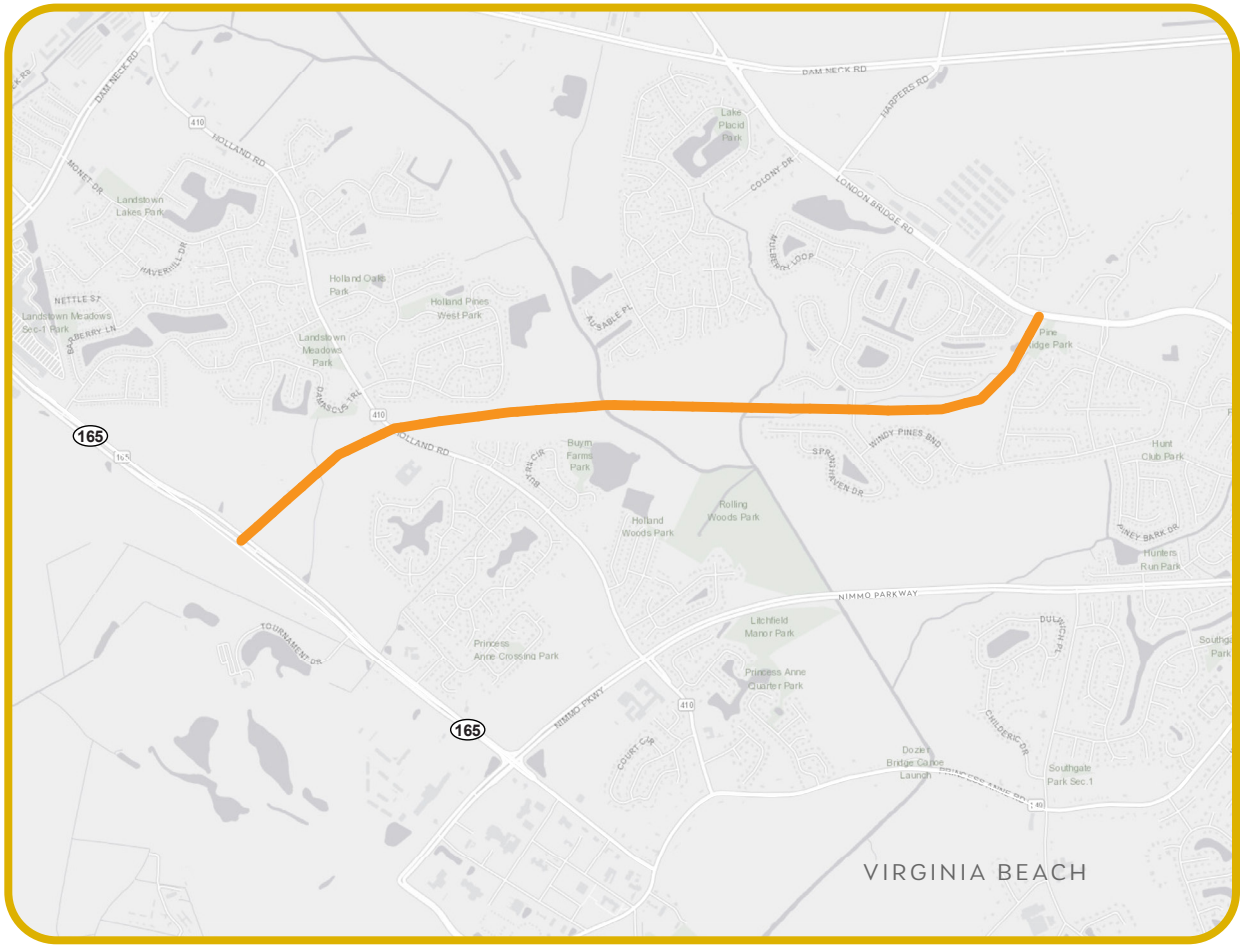
PROJECT DETAILS

PROJECT DESCRIPTION
New alignment to relieve congestion and provide new access

From London Bridge Rd to Princess Anne Rd

PROJECT CATEGORY/SYSTEM:
Highway - Urban

BENEFITS:
- Improves congestion and reliability
- Increases regional accessibility by providing an alternative route to I-264 between Virginia Beach and Chesapeake
- Improves the movement of both people and freight
- Provides an additional evacuation route for the region



ESTIMATED COST

CURRENT YEAR
$37 Million

YEAR OF EXPENDITURE
$53 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
76	54	42	172

2045 LRTP CANDIDATE PROJECTS

INTERCHANGE

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
INTERSTATE									
2045-301	I-64/I-264 Interchange Phase IIIA	N/A	N/A	Multi-jurisdictional	Interchange improvements	69	89	56	214
2045-326	I-264 at Independence Blvd	N/A	N/A	Virginia Beach	Interchange improvements	85	78	45	208
2045-305	I-64/I-264 Interchange Phase IIIE	N/A	N/A	Multi-jurisdictional	Interchange improvements	67	83	56	206
2045-302	I-64/I-264 Interchange Phase IIIB	N/A	N/A	Multi-jurisdictional	Interchange improvements	57	77	57	191
2045-303	I-64/I-264 Interchange Phase IIIC	N/A	N/A	Multi-jurisdictional	Interchange improvements	44	86	58	188
2045-327	I-264 at Rosemont Rd	N/A	N/A	Virginia Beach	Interchange improvements	80	70	35	185
2045-304	I-64/I-264 Interchange Phase IIID	N/A	N/A	Multi-jurisdictional	Interchange improvements	45	76	57	178
2045-316	Air Terminal Interchange	N/A	N/A	Norfolk	New Interchange	75	64	38	177
2045-308	Bowers Hill Interchange	Bowers Hill	College Drive	Multi-jurisdictional	Improvement to interchange.	72	56	45	173
2045-306	I-64/I-264 Interchange Phase IIIF	N/A	N/A	Multi-jurisdictional	Interchange improvements	60	56	56	172
2045-313	I-64 at Settlers Landing Rd	N/A	N/A	Hampton	Ramp modifications (EB and WB)	56	61	53	170
2045-309	I-64/I-464 Loop Ramp (I-64 EB to I-464 South and I-464 NB to I-64 WB)	N/A	N/A	Chesapeake	Interchange improvements (as part of Hampton Roads Express Lanes Network)	69	61	30	160
2045-320	I-64/Northampton Blvd Interchange - EB Traffic from Northampton Blvd to I-264	N/A	N/A	Norfolk	Interchange improvements to I-64 EB On Ramp from Northampton Blvd	56	73	27	156
2045-311	I-64 at Lasalle Ave	I-64 WB	Lasalle Ave	Hampton	Add movement I-64 EB to NB and grade separated movement from I-64 WB to EB Armistead and NB LaSalle	61	44	48	153
2045-312	I-64 at N. King St	N/A	N/A	Hampton	New interchange; close EB existing off-ramp at Rip Rap Road	73	44	36	153
2045-314	I-64/Denbigh Blvd Interchange Project	N/A	N/A	Newport News	New Interchange	66	46	40	152
2045-321	Military Hwy at I-64 -- New EB On-Ramp	N/A	N/A	Norfolk	New I-64 Eastbound on-ramp	44	65	39	148
2045-318	I-264 at Ballentine Blvd Diverging Diamond Interchange	N/A	N/A	Norfolk	Interchange reconstruction	52	33	54	139
2045-317	I-564/I-64 Interchange - Direct Ramp Access to HREL Network	N/A	N/A	Multi-jurisdictional	Direct acces to Hampton Roads Express Lanes to/from I-564	54	72	7	133
2045-315	I-64/Fort Eustis Blvd Interchange	N/A	N/A	Newport News	Interchange improvements	65	40	14	119
2045-323	Frederick Blvd and I-264 Interchange	Frederick Blvd	I-264 Ramps	Portsmouth	Interchange improvements	44	44	28	116
2045-324	Victory Blvd and I-264 Interchange	Victory Blvd (Rte 239)	I-264 Ramps	Portsmouth	Interchange improvements	46	34	19	99
2045-325	VIG Interchange	N/A	N/A	Portsmouth	Interchange improvements	34	30	32	96
2045-319	I-264/Military Hwy Interchange	N/A	N/A	Norfolk	Interchange improvements	46	40	7	93
2045-322	Cedar Ln and VA-164 Interchange	Cedar Ln	VA-164	Portsmouth	Interchange improvements associated with Craney Island Access Road	30	29	16	75
PRIMARY									
2045-307	US 58/258 Interchange	N/A	N/A	Multi-jurisdictional	Interchange improvements	33	25	58	116

TOP PRIORITIZED INTERCHANGE CANDIDATE PROJECT (INTERSTATE)
2045-301: I-64/I-264 INTERCHANGE PHASE IIIA

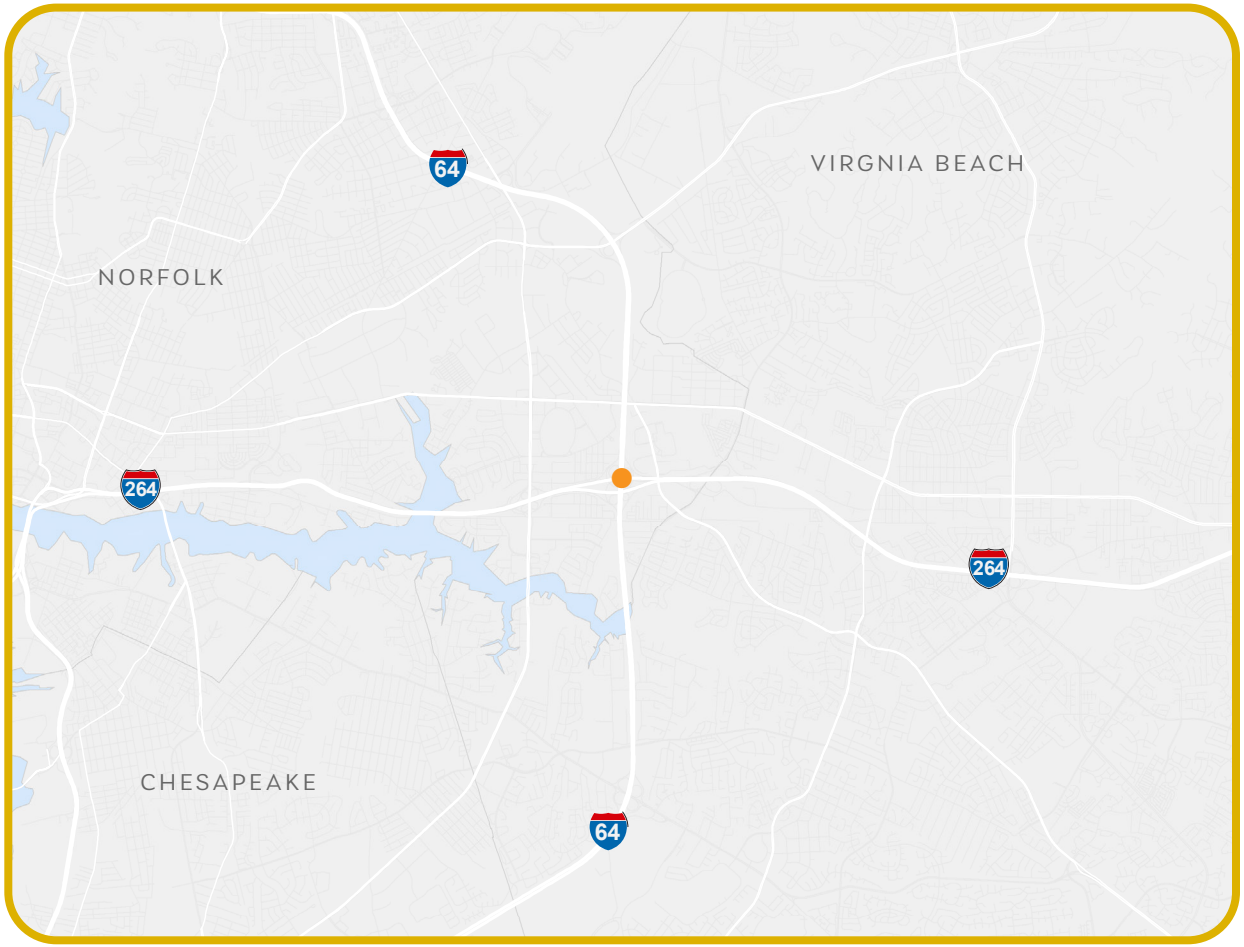
PROJECT DETAILS

PROJECT DESCRIPTION
Interchange improvements including widening I-64 Eastbound (EB) one/two lanes from Northampton Blvd, widening I-264 one lane to the collector/distributor merge with the interstate mainline, and improving the bridge structures from I-64 EB (over Kempsville Rd and Virginia Beach Blvd) and I-264 EB (over Newtown Rd)

From N/A to N/A

PROJECT CATEGORY/SYSTEM:
Interchange - Interstate

BENEFITS:
- Relieves congestion and improves traffic operations along I-264 and I-64 corridors
- Improves regional travel time and reliability to major employment centers, port facilities, military installations, and tourist destinations
- Provides congestion relief to the ramp, which carries 26,000 vehicles per weekday
- 66,000 people commute between Norfolk and Virginia Beach each day, many of which pass through this interchange
- Improves safety and accessibility on one of the most hazardous corridors in the region



ESTIMATED COST

CURRENT YEAR
$415 Million

YEAR OF EXPENDITURE
$592 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
69	89	56	214

TOP PRIORITIZED INTERCHANGE CANDIDATE PROJECT (PRIMARY)
2045-307: US 58/258 INTERCHANGE

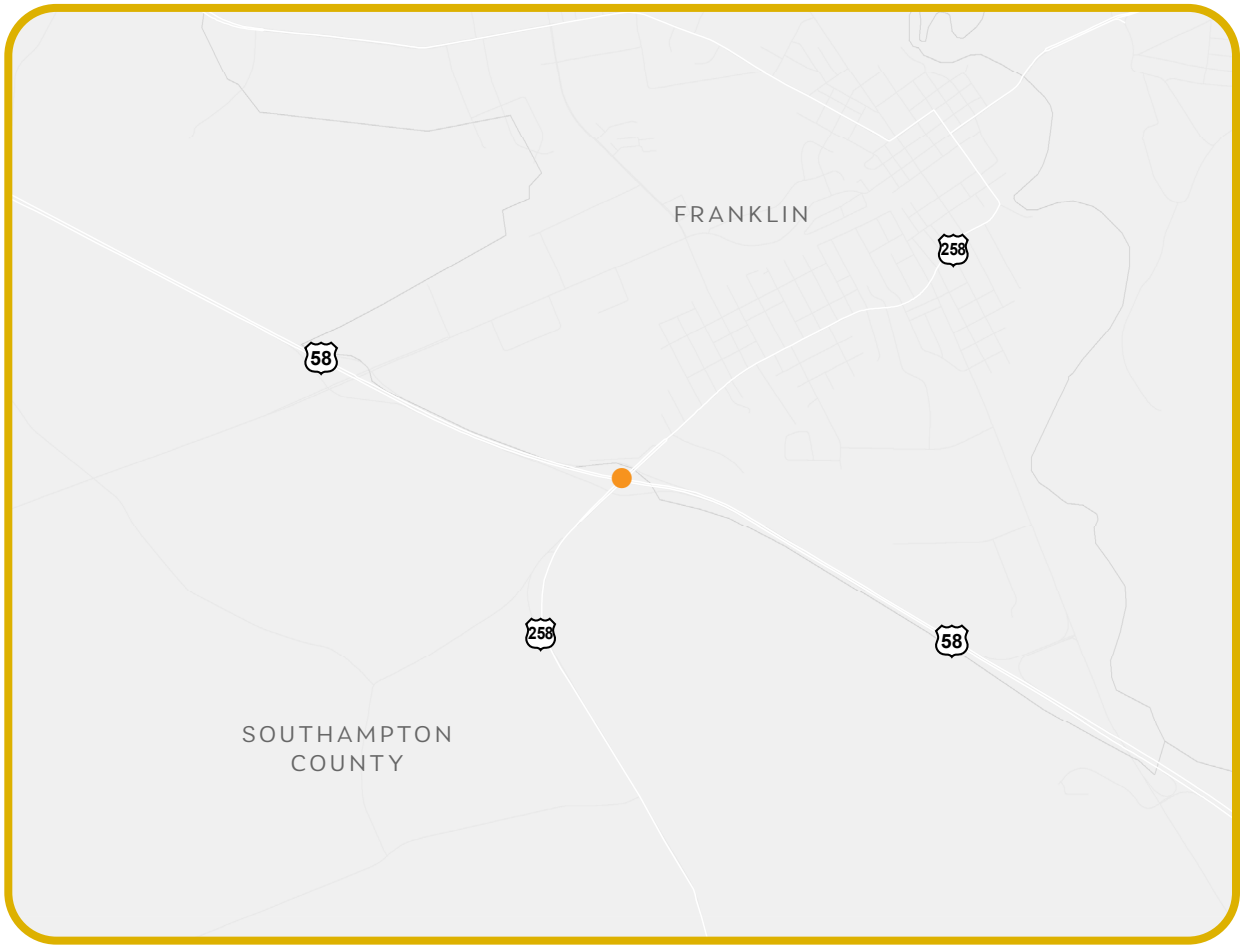
PROJECT DETAILS

PROJECT DESCRIPTION
Safety and operational improvements at the US Route 58/258 interchange and approaches in Franklin and Southampton

From N/A to N/A

PROJECT CATEGORY/SYSTEM:
Interchange - Primary

BENEFITS:
Improves safety and accessibility for both the movement of people and freight in the Franklin and Southampton area



ESTIMATED COST

CURRENT YEAR
$1.5 Million

YEAR OF EXPENDITURE
$1.7 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
33	25	58	116

2045 LRTP CANDIDATE PROJECTS

INTERMODAL - FREIGHT

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-603	Hampton Blvd at Terminal Blvd	Trouville Ave/Portor St	Hampton Blvd	Norfolk	New highway/rail underpass	91	61	38	190
2045-604	Craney Island Access Rd	VA 164 and Median Rail	Craney Island Marine Terminal	Portsmouth	Provides access to Craney Island Port Facility	93	49	19	161
2045-602	Portlock Rd Railroad Overpass	N/A	N/A	Chesapeake	New structure to replace at grade crossing along Portlock Rd between Varsity Dr and Reid St	63	31	52	146
2045-607	North Suffolk Connector Rd	Nansemond Pkwy	I-664	Suffolk	New 2-lane divided roadway	42	53	47	142
2045-606	Nansemond Pkwy (Rte 337)	N/A	N/A	Suffolk	Highway-rail grade separation near Suffolk Meadows Blvd	55	36	39	130
2045-605	Finney Ave Flyover	Pinner St	Route 13/337 E Washington St	Suffolk	Highway-rail grade separation in core Suffolk downtown area	45	36	37	118
2045-601	VA-164 Extension	VA-164	Suffolk Bypass	Multi-jurisdictional	Extend VA-164 on existing RR Right of Way	25	81	2	108

TOP PRIORITIZED INTERMODAL/FREIGHT CANDIDATE PROJECT
2045-603: HAMPTON BOULEVARD AT TERMINAL BOULEVARD

PROJECT DETAILS

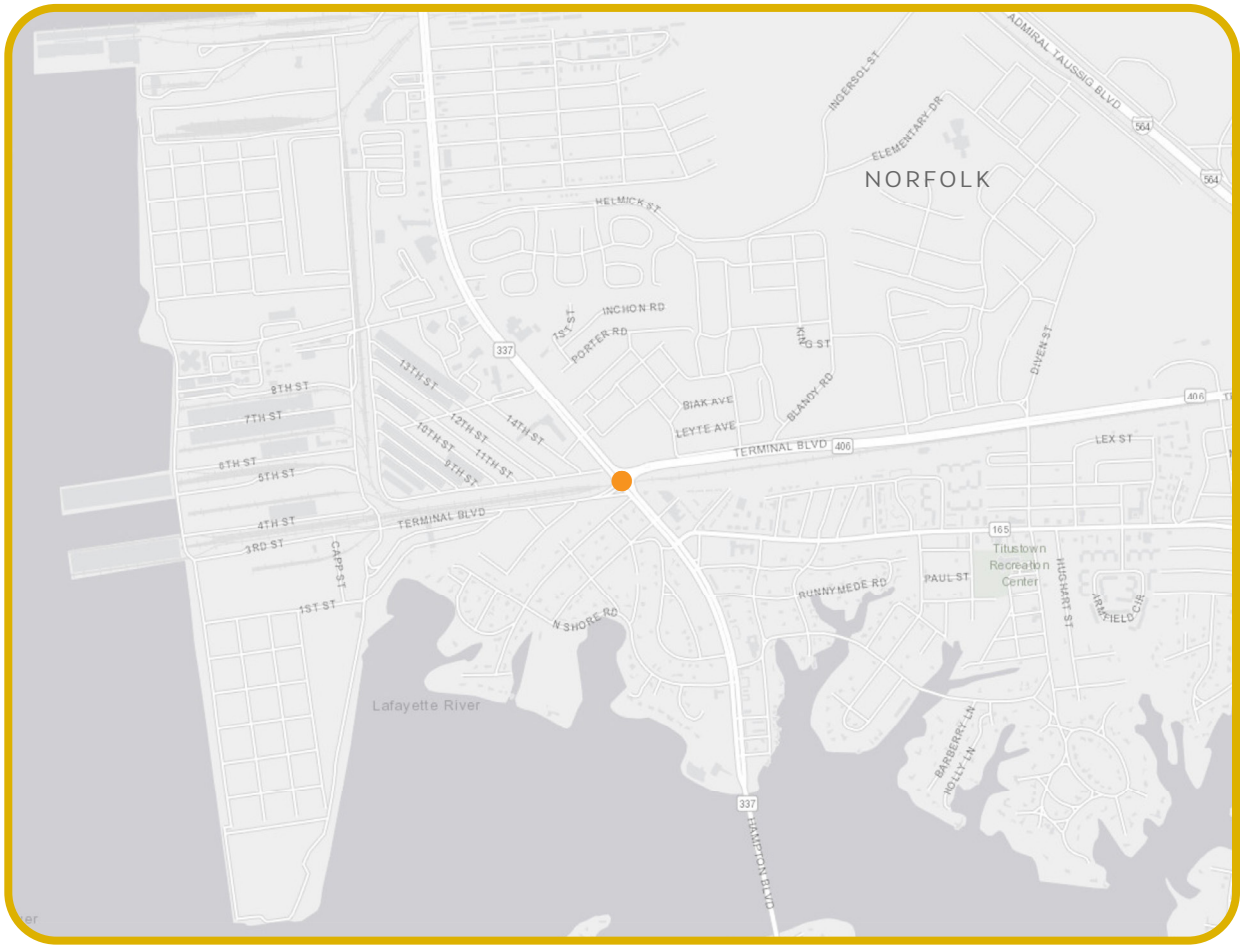
PROJECT DESCRIPTION
New highway/ rail underpass

From Trouville Avenue/Porter Street to Hampton Boulevard

PROJECT CATEGORY/SYSTEM:
Interchange - Primary

BENEFITS:

- Provides unimpeded traffic flow via a grade separation between rail and auto traffic
- Improves regional travel time and reliability to port facilities and military installations
- Improves safety by removing a conflict point between rail and autos



ESTIMATED COST

CURRENT YEAR
$147 Million

YEAR OF EXPENDITURE
$210 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
91	61	38	190

2045 LRTP CANDIDATE PROJECTS

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
FIXED GUIDEWAY TRANSIT									
2045-510	Peninsula High Capacity Transit	Hampton/ Newport News	Hampton/ Newport News	Multi-jurisdictional	Fixed Guideway	81	63	38	182
2045-518	Naval Station Norfolk Transit Extension	Existing LRT	Naval Station Norfolk	Norfolk	Fixed Guideway	84	60	36	180
2045-516	High Capacity Transit Extension to Greenbrier Area	Existing Service Locations	Greenbrier Area	Chesapeake	Fixed Guideway	87	55	31	173
2045-519	High Capacity Transit Extension to Suffolk	Existing Service Locations	Suffolk	Suffolk	Fixed Guideway	68	51	13	132
MARITIME TRANSIT									
2045-504	Ferry Service	Norfolk	Hampton	Multi-jurisdictional	Ferry	76	50	52	178
2045-517	Elizabeth River Ferry Expansion	Current Service Locations	ODU	Norfolk	Ferry	60	60	54	174
2045-513	Southside Ferry Service Expansion	Current Service Locations	Harbor Park (regular/recurring service)	Multi-jurisdictional	Ferry	57	56	31	144
RAIL TRANSIT									
2045-506	Higher-Speed and Intercity Passenger Rail - DRPT Tier I EIS ROD - Preferred Alternative	Hampton Roads	Richmond / Northeast Corridor	Multi-jurisdictional	Heavy/Commuter Rail	72	50	46	168
2045-509	Peninsula Commuter Rail	Newport News	Williamsburg	Multi-jurisdictional	Heavy/Commuter Rail	62	60	25	147
2045-507	High-Speed and Intercity Passenger Rail - HRTPO High Speed Rail Vision Plan - Option 4 Richmond Direct Improved	Hampton Roads	Richmond / Northeast Corridor	Multi-jurisdictional	Heavy/Commuter Rail	88	30	18	136

TOP PRIORITIZED TRANSIT CANDIDATE PROJECT (FIXED GUIDEWAY)
2045-510: PENINSULA HIGH CAPACITY TRANSIT

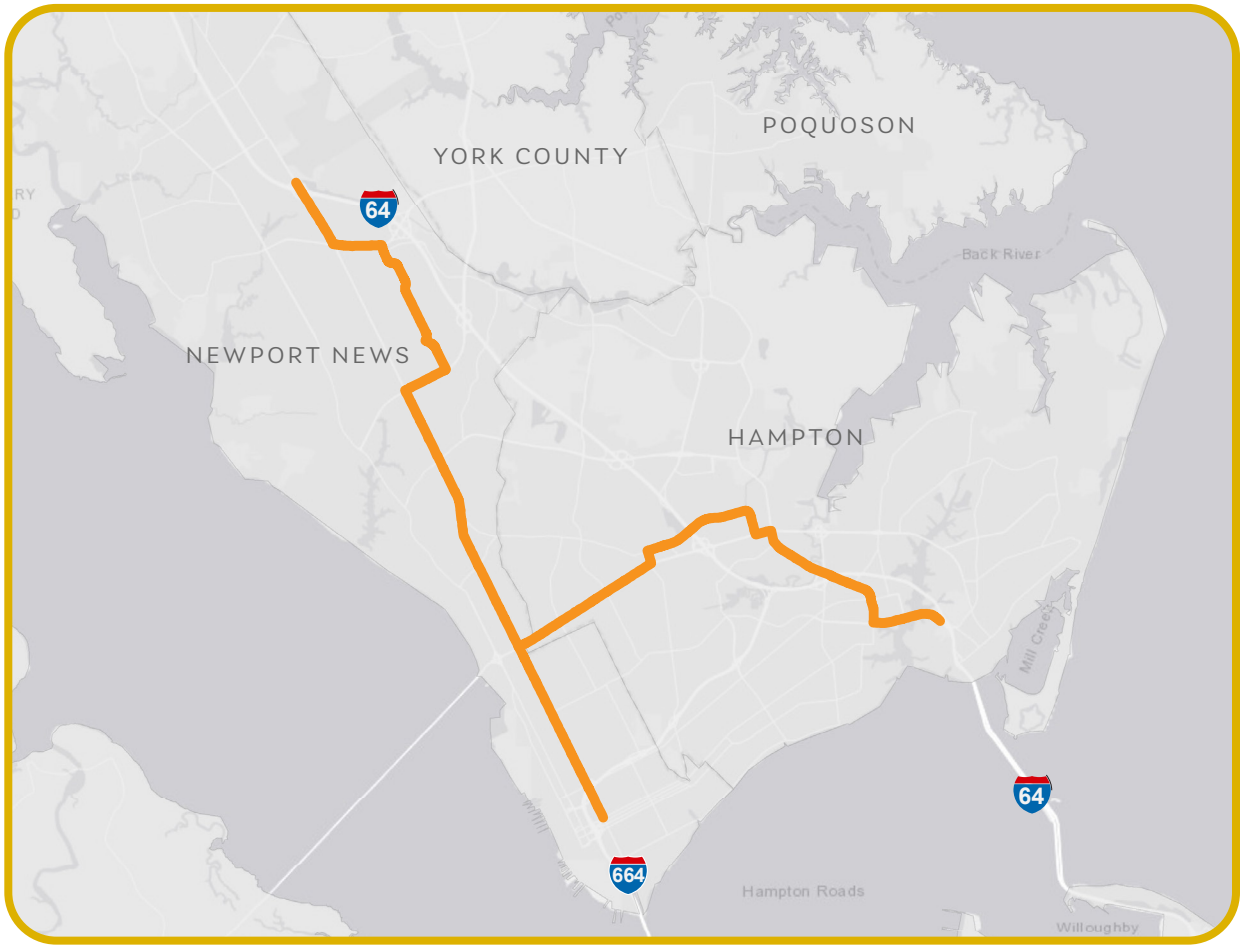
PROJECT DETAILS

PROJECT DESCRIPTION
Proposed Bus Rapid Transit project connecting key areas in Hampton and Newport News

From Hampton/Newport News to Hampton/ Newport News

PROJECT CATEGORY/SYSTEM:
Transit - Fixed Guideway

BENEFITS:
- Provides new travel options
- Improves access to population and employment centers
- Improves access to key destinations and activity centers on the Peninsula
- Improves air quality by reducing auto trips



ESTIMATED COST

CURRENT YEAR
$235 Million

YEAR OF EXPENDITURE
$335 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
81	63	38	182

TOP PRIORITIZED TRANSIT CANDIDATE PROJECT (MARITIME)
2045-504: FERRY SERVICE

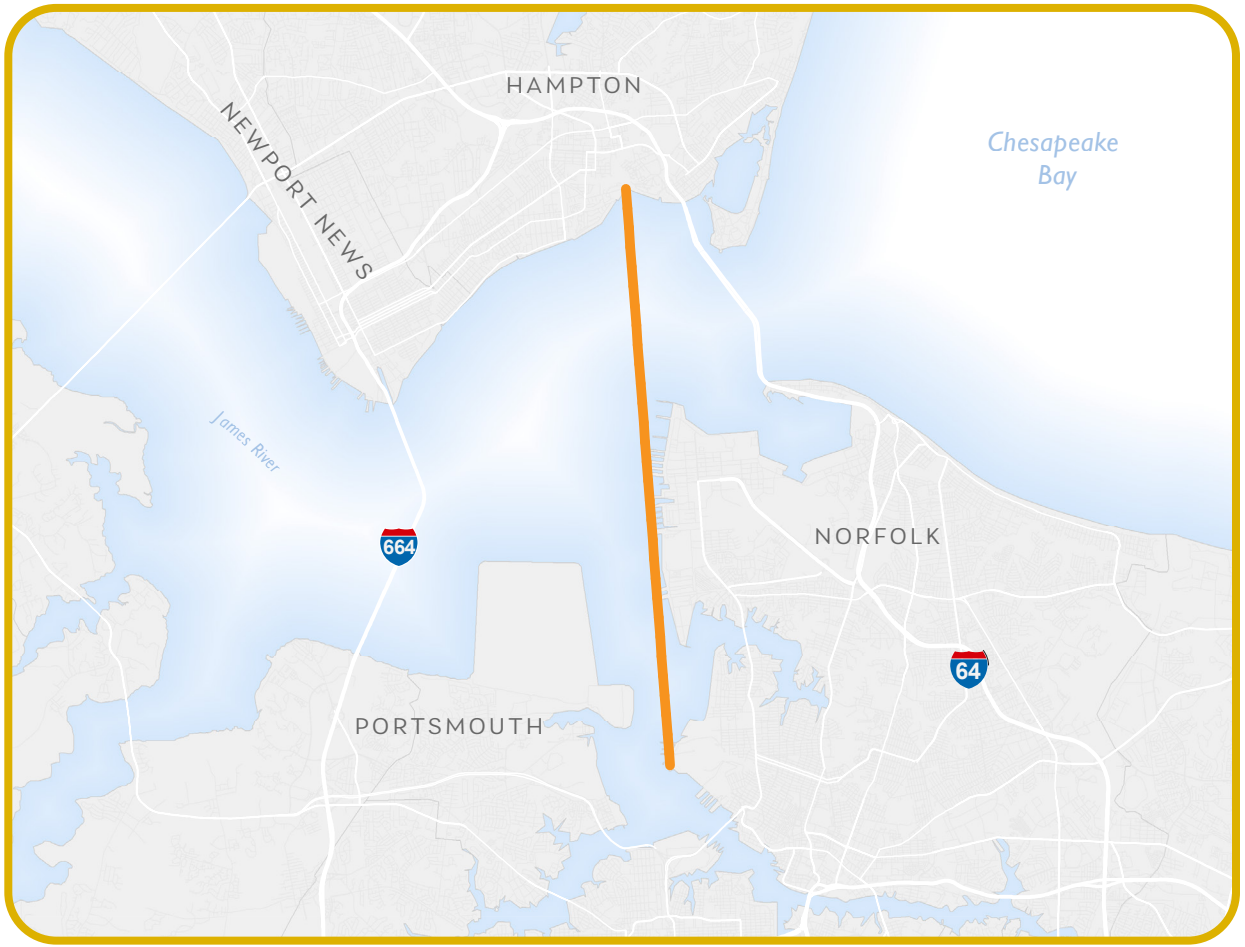
PROJECT DETAILS

PROJECT DESCRIPTION
Proposed ferry service connecting the Peninsula and Southside

From Norfolkto Hampton

PROJECT CATEGORY/SYSTEM:
Transit-Maritime

BENEFITS:
- Provides new travel options across the Hampton Roads Harbor, connecting the Peninsula and Southside
- Improves access to population and employment centers
- Improves access to key destinations and activity centers
- Improves air quality by reducing auto trips



ESTIMATED COST

CURRENT YEAR
$12 Million

YEAR OF EXPENDITURE
$22 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
76	50	52	178

TOP PRIORITIZED TRANSIT CANDIDATE PROJECT (RAIL)
2045-506 - HIGH SPEED AND INTERCITY PASSENGER RAIL-PREFERRED ALTERNATIVE

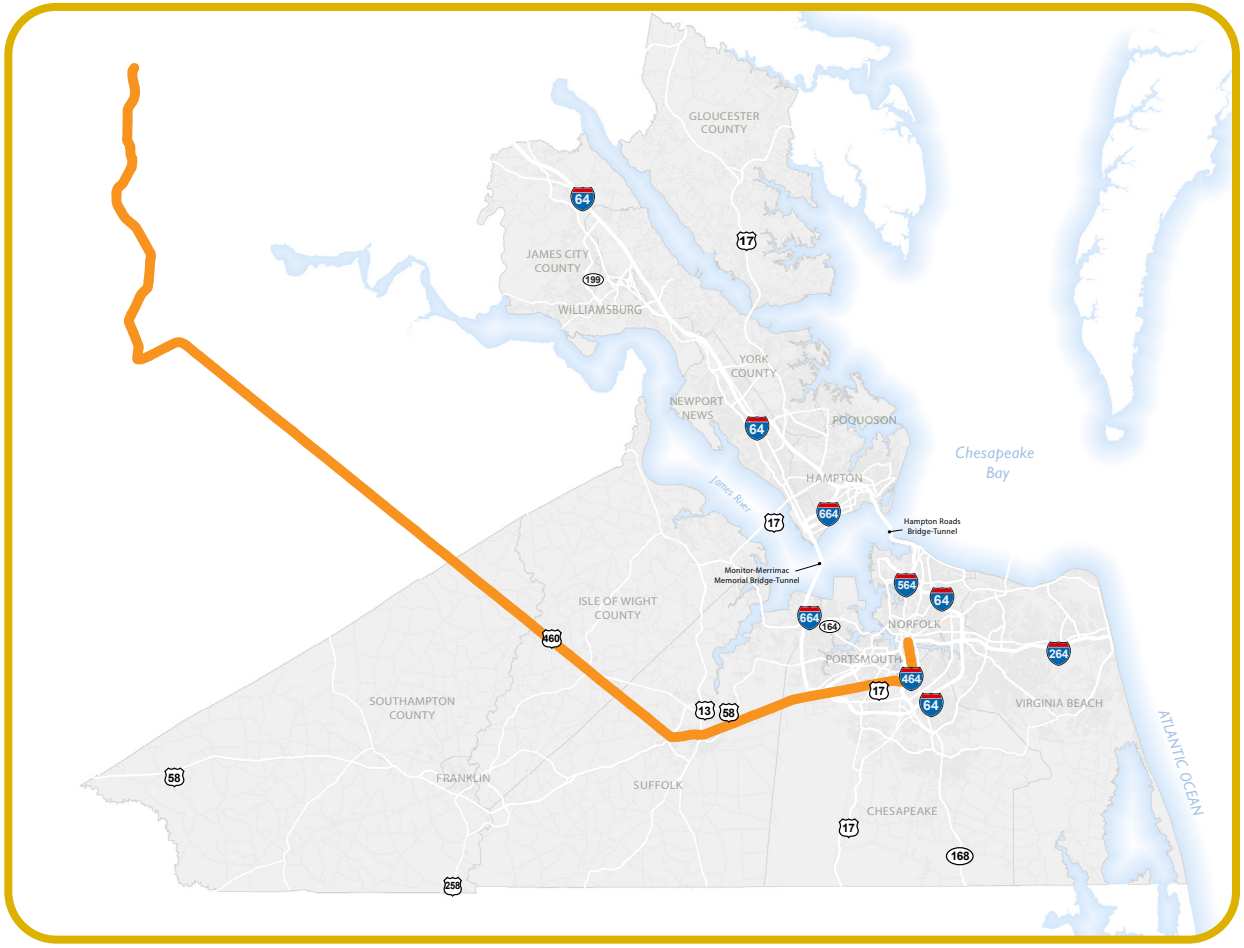
PROJECT DETAILS

PROJECT DESCRIPTION
Enhanced passenger rail service connecting Hampton Roads to Richmond and the Northeast Rail Corridor

From Hampton Roads to Richmond/Northeast Corridor

PROJECT CATEGORY/SYSTEM:
Transit - Rail

BENEFITS:
- Provides new travel options connecting Hampton Roads to Richmond and the Northeast Rail Corridor
- Improves rail access to key population and employment centers along the East Coast
- Improves air quality by reducing auto trips



ESTIMATED COST

CURRENT YEAR
$475 Million

YEAR OF EXPENDITURE
$859 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
72	50	46	168

2045 LRTP CANDIDATE PROJECTS

ACTIVE TRANSPORTATION

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	PROJECT UTLITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-704	Birthplace of America Trail	Virginia Capital Trail	Hampton Roads	Multi-jurisdictional	Regional bicycle/pedestrian facility	87	90	35	212
2045-707	South Hampton Roads Trail: Complete Trail (Suffolk to VB)	Suffolk	Virginia Beach	Multi-jurisdictional	Regional bicycle/pedestrian facility	87	90	29	206
2045-709	Southside Bike Trail	Chesapeake	Virginia Beach Oceanfront	Multi-jurisdictional	Bike trail corridor	87	90	24	201
2045-708	Virginia Beach Trail (part of the regional South Hampton Roads Trail)	Newtown Rd	Norfolk Ave	Virginia Beach	Regional bicycle/pedestrian facility	76	90	32	198
2045-754	Monticello Ave Shared-Use Path	Treyburn Drive	Ironbound Rd (Rte 615)	Williamsburg	Shared-use path	46	76	68	190
2045-703	Bike Path Along Shore Dr/Hampton Blvd/Little Creek Rd	Norfolk Elizabeth River Trail	Virginia Beach City Line	Norfolk	Bike Lanes	49	90	42	181
2045-732	Bike Lanes on Granby St	W Ocean View Ave	W Main St	Norfolk	Bike Lanes	60	80	36	176
2045-720	South Hampton Roads Trail: Western Branch Phase 1	Taylor Rd	Poplar Hill Rd	Chesapeake	Shared-use path	33	66	71	170
2045-739	Portsmouth Rail-to-Trail	Churchland Plaza	Old Coast Guard Rd	Portsmouth	Shared Use Path	50	64	50	164
2045-741	Rail-to-Trail (Suffolk Seabord Coastline Trail, part of the South Hampton Roads Trail)	Pughsville Rd	Downtown Suffolk	Suffolk	Shared Use Path	57	65	38	160
2045-738	Complete High St	Chesnut St	MLK Overpass	Portsmouth	"Complete Streets" conversion (part of the South Hampton Roads Trail)	54	63	38	155
2045-748	Thalia Creek Greenway - Phase IV	Constitution Dr	Virginia Beach Trail	Virginia Beach	Bicycle / Pedestrian Facility	45	80	28	153
2045-752	I-264 Pedestrian Land Bridge/Flyover	Thalia Creek Greenway	Mt. Trashmore Park	Virginia Beach	Shared-use path	50	80	22	152
2045-749	Thalia Creek Greenway - Phase V	Virginia Beach Trail	Virginia Beach Blvd	Virginia Beach	Bicycle / Pedestrian Facility	46	80	26	152
2045-745	Northampton Blvd Right-of-Way	Bayside Rd	Greenwell Rd	Virginia Beach	Shared-use path	31	85	32	148
2045-729	Multi-use path on 26th St	Jefferson Ave	Parish Ave	Newport News	Road diet to provide mulit-use path	49	73	25	147
2045-726	Monticello Ave Bike Lane	News Rd	Centerville Rd	James City County	Bike lanes (part of Birthplace of America Trail)	54	62	31	147
2045-728	Multi-use path on 25th St	Jefferson Ave	Parish Ave	Newport News	Road diet to provide mulit-use path	49	72	25	146
2045-750	Thalia Creek Greenway - Phase VI	Constitution Dr	I-264	Virginia Beach	Bicycle / Pedestrian Facility	43	80	22	145
2045-735	Military Hwy Bike Access	N/A	Shopping Areas and Outlet Mall	Norfolk	Bike access	40	80	23	143
2045-730	Multi-use path on 27th St	Jefferson Ave	Parish Ave	Newport News	Road diet to provide mulit-use path	44	72	25	141
2045-731	Multi-use path on 28th St	Jefferson Ave	Parish Ave	Newport News	Road diet to provide mulit-use path	44	72	25	141
2045-734	Elizabeth River Trail Extension to Naval Station Norfolk	Cloncurry Road	Admiral Tausig Boulevard	Norfolk	Bike lane extension	37	70	30	137
2045-712	Battlefield Blvd	Military Hwy	Volvo Pkwy	Chesapeake	Bicycle / Pedestrian Facility	35	70	28	133
2045-737	Bike lanes on Churchland Blvd	Portsmouth Trail	High St	Portsmouth	Bike facility	15	69	46	130
2045-753	Carter's Grove Country Rd Shared Use Path	South England St	Ron Springs Dr	Williamsburg	Shared Use Path (part of Birthplace of America Trail)	33	70	27	130
2045-760	Shore Drive Protected Bike Lane	Kendall Street	80th Street	Virginia Beach	Conversion from traditional Bike Lane to Protected/Buffered Shared Use Path	45	58	26	129
2045-717	Construct multi-use path along Greenbrier Pkwy	Eden Way	Kempsville Rd	Chesapeake	Multi-use path	41	60	28	129

2045 LRTP CANDIDATE PROJECTS

ACTIVE TRANSPORTATION

2045 PROJECT ID	PROJECT NAME	FROM	TO	JURISDICTION	PROJECT DESCRIPTION	PROJECT UTLITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
2045-723	Gloucester County Multi-use paths	Beaverdam Park	Main St	Gloucester	Bicycle / Pedestrian Facility	40	58	30	128
2045-742	Greenwich Rd conversion to Shared Use Path	Newtown Rd	South Witchduck Rd	Virginia Beach	Shared Use Path	36	60	32	128
2045-743	Level Green Powerline Corridor	Reon Dr	Chesapeake CL at S. Military Hwy	Virginia Beach	Shared Use Path	37	70	21	128
2045-755	Strawberry Plains Rd Shared Use Path	Ironbound Rd	John Tyler Ln	Williamsburg	Multi-use path	52	41	29	122
2045-701	Bike Lanes on Indian River Rd	Berkley Ave	Sparrow Rd	Norfolk	Bike Lanes	43	54	25	122
2045-721	South Hampton Roads Trail: Western Branch Phase 2	Taylor Rd	Suffolk CL	Chesapeake	Multi-use path	36	53	30	119
2045-727	16th St Revitalization	Marshall Ave	Peterson's Yacht Basin	Newport News	Multi-use path	38	54	27	119
2045-713	Bike lane along Great Bridge Blvd	Battlefield Blvd	Bainbridge Blvd	Chesapeake	On-street bike lanes	31	60	27	118
2045-746	Scarborough Bridge	Magic Hollow Blvd	Old Clubhouse Rd	Virginia Beach	Shared Use Path	38	49	31	118
2045-756	Penniman Rd (Sidewalk / Multi Use Path)	Williamsburg CL	Marquis Center Pkwy (Rte 199)	York County	Sidewalk & Multi-Use Path	33	51	33	117
2045-725	Bike Lanes on Centerville Rd that connect to Capital Trail	Jamestown Rd (Rte 31)	John Tyler Hwy (Rte 5)	James City County	Bike Lanes	33	32	51	116
2045-702	Bike Lanes on Indian River Rd	Campostella Rd	Military Hwy	Norfolk	Bike Lanes	35	54	25	114
2045-715	Construct multi-use path along Etheridge Manor Blvd/ Hanbury Rd	Centerville Tnpk	Johnstown Rd	Chesapeake	Multi-use path	35	50	26	111
2045-718	Construct multi-use path along Shell Rd/Canal Rd	G.W. Hwy (US 17)	Military Hwy	Chesapeake	Multi-use path	38	46	27	111
2045-724	Five Mile Loop Trail	Fort Monroe	Fort Monroe	Hampton	Shared Use Path	39	33	32	104
2045-716	Construct multi-use path along George Washington Hwy	Moses Grandy Trail	Deep Creek Park Trailhead	Chesapeake	Multi-use path	33	35	33	101
2045-740	Twin Pines Rd Shared Use Path	Swannanoa Dr	Sunset Point	Portsmouth	Shared Use Path	22	52	27	101
2045-722	Hickory Fork Rd	Aberdeen Creek Rd (Rte 632)	Old Pinetta (Rte 610)	Gloucester	Shared use path to connect two regional parks (one state park and one national)	30	43	27	100
2045-758	Shared Use Path Along Yorktown Rd	Cardinal Ln (Rte 670)	Victory Blvd (Rte 171)	York County	Shared Use Path	29	30	37	96
2045-719	Construct multi-use path trail along Dismal Swamp Canal	Existing Trailhead	North Carolina Border	Chesapeake	Multi-use path	32	30	32	94
2045-714	Bike lane on Waters Rd	Cedar Rd	Washington Dr	Chesapeake	On-street bike lanes	21	50	23	94
2045-747	Seaboard Rd Shared Use Path and land acquisition	North - Princess Anne Rd	South - Princess Anne Rd	Virginia Beach	Shared Use Path	28	33	27	88
2045-759	Victory Boulevard Shared Use Path	Big Bethel Rd (Rte 600)	Carys Chapel Rd (Rte 762)	York County	Shared Use Path	24	22	37	83
2045-736	Bike Path on Hunts Neck Rd (Rte 172)	Yorktown Rd	Pasture Rd	Poquoson	Shared Use Path	18	31	33	82
2045-757	Shared Use Path - Yorktown Road	Tabb High School	Hampton Hwy (Rte 134) at Brick Kiln Creek Bridge	York County	Shared Use Path	24	20	38	82

TOP PRIORITIZED ACTIVE TRANSPORTATION CANDIDATE PROJECT
2045-704: BIRTHPLACE OF AMERICA TRAIL

PROJECT DETAILS

PROJECT DESCRIPTION

A regional trail that will connect the southern terminus of the Virginia Capital Trail to Fort Monroe in Hampton and the South Hampton Roads Trail in Suffolk

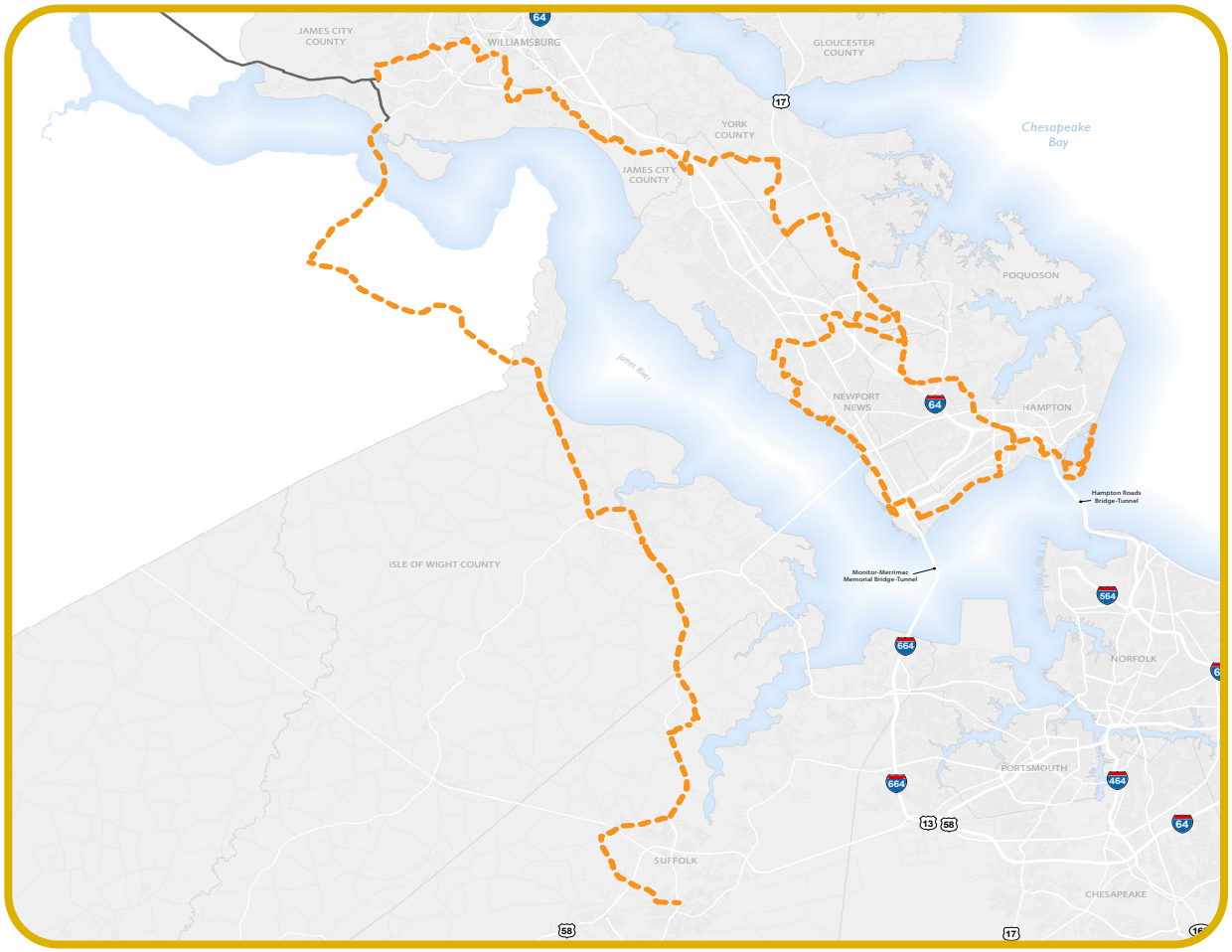
From Virginia Capital Trail in Jamestown to Fort Monroe and Suffolk

PROJECT CATEGORY/SYSTEM:

Active Transportation: Shared-Use Path

BENEFITS:

- Provides new bicycle and pedestrian travel options connecting major trails in the region and the state
- Improves bicycle and pedestrian access to key destinations and activity centers
- Improves air quality by reducing auto trips



ESTIMATED COST

CURRENT YEAR

$155 Million

YEAR OF EXPENDITURE

$279 Million

PRIORITIZATION SCORE

PROJECT UTILITY TOTAL	ECONOMIC VITALITY TOTAL	PROJECT VIABILITY TOTAL	TOTAL SCORE
87	90	35	212

APPENDIX A: DESCRIPTION OF CALCULATIONS

METHODOLOGY OF APPLYING HRTPO PROJECT PRIORITIZATION TOOL TO THE SCORING OF 2045 LONG-RANGE TRANSPORTATION

DESCRIPTION OF CALCULATIONS:
PROJECT UTILITY, ECONOMIC VITALITY, AND PROJECT VIABILITY

NOVEMBER 2020

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

BACKGROUND SECTION

The following "background" columns in the Project Prioritization Tool are used to calculate values for certain Tool Performance Measures, mostly for the Project Utility leg of the Tool.

INRIX DATA

Describes whether travel time and speed data collected by INRIX is available on that roadway segment for the analysis.

EXISTING CAPACITY

For both Highways and Bridges/Tunnels, the existing capacity is based on the daily volume that is the threshold between LOS E & F based on the existing roadway class of that segment.

FUTURE CAPACITY

For both Highways and Bridges/Tunnels, the future capacity is based on the daily volume that is the threshold between LOS E & F based on that segment's proposed roadway class.

ADT

For both Highways and Bridges/Tunnels, ADT was determined by using the existing weekday volumes for each segment within the project limits weighted by each segment length. If the facility does not currently exist, a value of "N/A" is listed and the existing weekday volume for the parallel facility is used.

FUTURE ADT

The Regional Travel Demand Model was used to calculate the Future Average Daily Traffic (ADT) for highway, interchange, bridge & tunnel, and intermodal projects. Model forecasts were conducted for each scenario: Baseline, Greater Growth on the Water, Greater Growth in Urban Areas, and Greater Growth in Suburban Areas based on the scenario narratives (population and employment, freight, Connected and Autonomous Vehicle, Mobility as a Service/Ride Sharing, etc.). Forecasted volumes across scenarios were averaged.

ESTIMATED COST OF PROJECT

Estimated costs of projects are expressed in both Year-of-Expenditure (YOE) and Current Year dollars. For prioritization purposes, Current Year dollars are used to evaluate Cost Effectiveness. For fiscal-constraint purposes, YOE dollars will be used.

Cost estimates were submitted by stakeholders in either YOE or Current Year dollars. To convert estimates, a 3% planning level inflation factor was used based on the estimated project opening year. Planning level time bands were created (Near, Middle, Far) and a midpoint inflation factor assigned to each time band.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

Midpoint Inflation Factor for each Time Band:

Midpoint Inflation Factor for each Time Band		
NEAR	2022-2029	1.126
MIDDLE	2030-2037	1.426
FAR	2038-2045	1.806

FUTURE DAILY VMT

Future ADT multiplied by length of project.

BRIDGE DETOUR LENGTH (BRIDGE AND TUNNEL)

The bridge detour length is the length in miles of the shortest path from one end of the bridge/tunnel to the other end, in the event that the bridge/tunnel is out of service.

BRIDGE DETOUR VMT

The bridge detour VMT was calculated by multiplying the most recent weekday count by the segment length for each segment along the shortest detour route.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT UTILITY – ROADWAYS

CONGESTION LEVEL (HIGHWAY AND BRIDGE/TUNNEL)

(a) Percent Reduction between Existing and Future V/C Ratios

(Existing V/C-Future V/C)/Existing V/C

For new roadways: Existing V/C and Future V/C of parallel facility

(b) Existing Peak Period Congestion Level (TTI) and Existing Peak Period Level of Service (No Inrix Data)

Congestion levels were determined using the travel time index (TTI) for roadways with INRIX data and using Level of Service for roadways where INRIX data is not available. The travel time index is a ratio that compares travel times on a particular roadway segment during peak travel periods with travel times during uncongested, free-flow conditions. The higher the travel time index, the more congested the roadway is.

HRTPO uses the following thresholds to determine congestion levels based on the travel time index:

TRAVEL TIME INDEX	FREEWAY	ARTERIALS
LOW	TTI < 1.15	TTI < 1.25
MODERATE	1.15 ≤ TTI < 1.30	1.25 ≤ TTI < 1.40
SEVERE	TTI ≥ 1.30	TTI ≥ 1.40

Level of service is a measure used to describe congestion levels based on Highway Capacity Manual analysis methods.

Congestion levels based on Levels-of-Service are shown in the following table:

CONGESTION LEVEL	HCM LOS
LOW	A-C
MODERATE	D
SEVERE	E-F

The worst TTI and LOS during the day for that roadway segment is used, regardless of direction or peak period.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(c) Person Throughput and Delay

The 2045 LRTP Project Prioritization Process uses two measures from the SMART SCALE prioritization process to evaluate congestion mitigation: Change in Person Throughput and Change in Person Hours of Delay.

Person throughput measures the change in corridor total (multimodal) person throughput attributed to the project. More information on how person throughput is calculated for each project type can be found in the ***SMART SCALE Technical Guide***.

The thresholds for person throughput are as follows:

PERSON THROUGHPUT	
VERY HIGH	800 +
HIGH	600 - 799
MEDIUM-HIGH	400 - 599
MEDIUM	200 - 399
MEDIUM-LOW	1 - 199
LOW	0

Person hours of delay measures the change in the number of peak period person hours of delay in the project corridor. More information on how person hours of delay is calculated for each project type can be found in the SMART SCALE Technical Guide.

The thresholds for person hours of delay are as follows:

PERSON HOURS OF DELAY	
VERY HIGH	200 +
HIGH	100 - 200
MEDIUM-HIGH	50 - 100
MEDIUM	25 - 50
MEDIUM-LOW	1 - 25
LOW	< 1

(d) Impact to Nearby Roadway

Future ADT – Existing ADT

For new roadways: Future ADT

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

CONGESTION LEVEL (INTERCHANGE)

(a) Existing Queue Conditions

Based on Number of Interstate and Arterial Approaches from where queues currently form (1 to 4 approaches).

(b) Queue Improvements

Number of Interstate and Arterial Approaches improved by project (1 to 4 approaches).

(c) Person Throughput and Delay

These measures are the same as the ones used for the Highway type projects.

(d) Number of Movements Added or Improved

Based on improved left and right movements (Max: 8 movements).

TRAVEL TIME RELIABILITY

(a) Level of Travel Time Reliability (LOTTR)

Although roadway congestion is prevalent in many areas of Hampton Roads, congestion levels are not always the same each day. Congestion levels can vary greatly from day to day due to a variety of factors such as crashes, bad weather, special events, or work zones. Travel time reliability is defined as how steady travel times are over the course of time, as measured generally from day to day.

The measure used in the 2045 LRTP Project Prioritization Process is the Level of Travel Time Reliability (LOTTR). The LOTTR is defined as the ratio of the 80th percentile travel time to the mean (50th percentile) travel time over the course of a year for four reporting periods: weekday morning peak (6-10 am), weekday midday (10 am – 4 pm), weekday afternoon peak (4 pm – 8 pm), and weekends (6 am – 8 pm). The highest of these four periods and the highest direction is the LOTTR used in this process.

The thresholds for Level of Travel Time Reliability are as follows:

LEVEL OF TRAVEL TIME RELIABILITY	
VERY HIGH	1.50+
HIGH	1.40 – 1.49
MEDIUM-HIGH	1.30 – 1.39
MEDIUM	1.20 – 1.29
MEDIUM-LOW	1.10 – 1.19
LOW	1.00 – 1.09

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Truck Travel Time Reliability (TTTR)

The reliability of freight movement can be calculated using a new metric referred to as the Truck Travel Time Reliability (TTTR) Index. The TTTR ratio is defined as the ratio of the 95th percentile travel time for trucks to the mean (50th percentile) travel time for trucks over the course of a year for five reporting periods: weekday morning peak, weekday midday, weekday afternoon peak, weekends, and overnight.

The highest of these five periods and the highest direction is the TTTR used in this process.

The thresholds for Truck Travel Time Reliability are as follows:

TRUCK TRAVEL TIME RELIABILITY	
VERY HIGH	2.00+
HIGH	1.85 – 1.99
MEDIUM-HIGH	1.70 – 1.84
MEDIUM	1.55 – 1.69
MEDIUM-LOW	1.40 – 1.54
LOW	1.00 – 1.39

INFRASTRUCTURE CONDITION (BRIDGE AND TUNNEL ONLY)

(a) Bridge State of Good Repair Ratings

The 2045 LRTP Project Prioritization Process uses four measures from VDOT's State of Good Repair (SGR) maintenance prioritization program to evaluate bridge condition: Importance Factor, Condition Factor, Design Redundancy Factor, and Structure Capacity. Information on how VDOT calculates these four factors are included on VDOT's SGR Bridge website. The scores from these four factors are weighted based on the weights used in the SGR program. These weights are 30/80 for Importance Factor, 25/80 for Condition Factor, 15/80 for Design Redundancy Factor, and 10/80 for Structure Capacity.

(b) Age of Tunnel

The age of tunnel reported is the oldest tunnel within the project limits.

(c) Last Major Repair

Provided by stakeholders (based on horizon year).

(d) Costs for Necessary Repairs/Upgrades

Provided by stakeholders.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

SYSTEM CONTINUITY AND CONNECTIVITY

(a) Degree of Regional Impact

Regional, Multi-jurisdictional, Local. Provided by stakeholders.

(b) Project Improves Vehicular Access to Major Employment and Population Centers

Medium and High density (population and employment) TAZs were identified in GIS. Access was determined via a spatial overlay analysis using GIS. Results were combined with Regional Significance. Scoring opportunities: Yes-Regional, Yes-Multi-jurisdictional, Yes-Local, No.

(c) Resiliency

1. Project is in a vulnerable area for sea level rise/storm surge/recurrent flooding

Using the Hampton Roads Sea Level Rise (SLR) Policy of 3-feet for medium-term planning (2050-2080), a spatial overlay analysis using GIS was conducted to determine candidate project vulnerability. Additionally, using the Volpe Resilience and Disaster Recovery tool, additional flooding scenarios were analyzed: 3-ft SLR with a 10-year storm surge and 3-ft SLR with a 100-year storm-surge. Vulnerability was assessed for each inundation scenario. Results were then averaged across scenarios.

2. If vulnerable, planned improvements, design features, or adaptation strategies have been developed to address future sea level rise/storm surge/recurrent flooding

Improvements/strategies developed, No, or N/A (if not vulnerable). Provided by stakeholders.

3. If vulnerable, level of access provided by the candidate project to critical areas or facilities (e.g. hospitals, Fire-EMS, emergency shelters, dense employment area, and single entry/exit point for flood prone areas or neighborhoods)

Critical areas and facilities were identified in GIS. Level of access determined via a spatial overlay analysis using GIS. High, Medium, Low, No disruption due to flooding anticipated responses.

(d) Addresses a Gap

GIS spatial overlay analysis conducted to determine if candidate project provides improved access crossing a barrier such as a body of water or rail. Stakeholders could also indicate if candidate project addresses a social equity gap. Yes/No response.

SAFETY AND SECURITY

(a) Reduction of EPDO of Fatal and Serious Injury Crashes

For Highways, Bridges/Tunnels, and Interchanges, the 2045 LRTP Project Prioritization Process uses two measures from the SMART SCALE prioritization process to evaluate safety: Reduction of EPDO of Fatal and Serious Injury Crashes and Reduction of EPDO Rate of Fatal and Serious Injury Crashes.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

Reduction of EPDO of Fatal and Serious Injury Crashes measures the weighted fatal and injury crashes expected to be reduced due to project implementation using VDOT crash modification factors. Using EPDO crashes and crash rates provide more weight to those more severe crashes by placing a weight of 85 on fatal and severe injury crashes, a weight of 10 on moderate injury crashes, and a weight of 5 on minor injury crashes. These are the same weights as are used in the SMART SCALE process. The crash data used in this analysis is from the years 2014-2018, as is the VMT for calculating the rate.

More information on how Reduction of EPDO of Fatal and Serious Injury Crashes is calculated for each project type can be found in the ***SMART SCALE Technical Guide***.

The thresholds for Reduction of EPDO of Fatal and Serious Injury Crashes are as follows:

REDUCTION OF EPDO OF FATAL AND SERIOUS INJURY CRASHES	
VERY HIGH	80+
HIGH	60 – 80
MEDIUM-HIGH	40 – 60
MEDIUM	20 – 40
MEDIUM-LOW	0 – 20
LOW	INCREASE IN EPDO

(b) Reduction of EPDO Rate of Fatal and Serious Injury Crashes

Reduction of EPDO Rate of Fatal and Serious Injury Crashes measures the weighted fatal and injury crashes expected to be reduced per 100 million vehicle-miles of travel due to project implementation using VDOT crash modification factors. The weights and crash data used is the same as is used in the Reduction of EPDO of Fatal and Serious Injury Crashes section. More information on how Reduction of EPDO Rate of Fatal and Serious Injury Crashes is calculated for each project type can be found in the ***SMART SCALE Technical Guide***.

The thresholds for Reduction of EPDO Rate of Fatal and Serious Injury Crashes are as follows:

REDUCTION OF EPDO RATE OF FATAL AND SERIOUS INJURY CRASHES	
VERY HIGH	400+
HIGH	300 – 400
MEDIUM-HIGH	200 – 300
MEDIUM	100 – 200
MEDIUM-LOW	0 – 100
LOW	INCREASE IN EPDO RATE

(c) Improvement to Incident Management or Evacuation

Yes/No. Provided by stakeholders.

(d) Diversion Impact Due to Failure (Bridges and Tunnels Only)

The diversion impact due to failure is calculated by multiplying the Existing ADT by the detour length, plus the existing detour route VMT.

MODAL ENHANCEMENTS

(a) Enhances Other Modes

0 to 3+ Enhancements. Provided by stakeholders.

(b) Provides Improved Access to Multimodal Choices

0 to 3+ Multimodal Choices. Provided by stakeholders.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT UTILITY – INTERMODAL/FREIGHT

BETTER ACCOMMODATES INTERMODAL MOVEMENTS

Degree of Conflict for Intermodal Movements

Conflict Free Intermodal Movements, Limited Conflict Intermodal Movements, Intermodal Movements Conflict. Provided by stakeholders.

IMPROVES RAIL OR VEHICULAR ACCESS

Project Improves Vehicular or Rail Access to Major Employment and Population Centers

Yes and Regional, Yes but Not Regional, No. Provided by stakeholders.

TRAVEL TIME RELIABILITY

(a) Level of Travel Time Reliability (LOTTR)

Although roadway congestion is prevalent in many areas of Hampton Roads, congestion levels are not always the same each day. Congestion levels can vary greatly from day to day due to a variety of factors such as crashes, bad weather, special events, or work zones. Travel time reliability is defined as how steady travel times are over the course of time, as measured generally from day to day.

The measure used in the 2045 LRTP Project Prioritization Process is the Level of Travel Time Reliability (LOTTR). The LOTTR is defined as the ratio of the 80th percentile travel time to the mean (50th percentile) travel time over the course of a year for four reporting periods: weekday morning peak (6-10 am), weekday midday (10 am – 4 pm), weekday afternoon peak (4 pm – 8 pm), and weekends (6 am – 8 pm). The highest of these four periods and the highest direction is the LOTTR used in this process.

The thresholds for Level of Travel Time Reliability are as follows:

LEVEL OF TRAVEL TIME RELIABILITY	
VERY HIGH	1.50+
HIGH	1.40 – 1.49
MEDIUM-HIGH	1.30 – 1.39
MEDIUM	1.20 – 1.29
MEDIUM-LOW	1.10 – 1.19
LOW	1.00 – 1.09

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Truck Travel Time Reliability (TTTR)

The reliability of freight movement can be calculated using a new metric referred to as the Truck Travel Time Reliability (TTTR) Index. The TTTR ratio is defined as the ratio of the 95th percentile travel time for trucks to the mean (50th percentile) travel time for trucks over the course of a year for five reporting periods: weekday morning peak, weekday midday, weekday afternoon peak, weekends, and overnight. The highest of these five periods and the highest direction is the TTTR used in this process.

The thresholds for Truck Travel Time Reliability are as follows:

TRUCK TRAVEL TIME RELIABILITY	
VERY HIGH	2.00+
HIGH	1.85 – 1.99
MEDIUM-HIGH	1.70 – 1.84
MEDIUM	1.55 – 1.69
MEDIUM-LOW	1.40 – 1.54
LOW	1.00 – 1.39

SYSTEM CONTINUITY AND CONNECTIVITY

(a) Degree of Regional Impact

Regional, Multi-jurisdictional, Local. Provided by stakeholders

(b) Resiliency

1. Project is in a vulnerable area for sea level rise/storm surge/recurrent flooding

Using the Hampton Roads Sea Level Rise (SLR) Policy of 3-feet for medium-term planning (2050-2080), a spatial overlay analysis using GIS was conducted to determine candidate project vulnerability. Additionally, using the Volpe Resilience and Disaster Recovery tool, additional flooding scenarios were analyzed: 3-ft SLR with a 10-year storm surge and 3-ft SLR with a 100-year storm-surge. Vulnerability was assessed for each inundation scenario. Results were then averaged across scenarios.

2. If vulnerable, planned improvements, design features, or adaptation strategies have been developed to address future sea level rise/storm surge/recurrent flooding

Improvements/strategies developed, No, or N/A (if not vulnerable). Provided by stakeholders.

(c) Addresses a Gap

GIS spatial overlay analysis conducted to determine if candidate project provides improved access crossing a barrier such as a body of water or rail. Stakeholders could also indicate if candidate project addresses a social equity gap.

MODAL ENHANCEMENTS

(a) Enhances Other Modes

0 to 3+ Enhancements. Provided by stakeholders.

(b) Provides Improved Access to Multimodal Choices

0 to 3+ Multimodal Choices. Provided by stakeholders.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT UTILITY – TRANSIT

CONGESTION

Potential Trips Removed from Roadways.

Based on congestion of parallel highway facility. High, Medium, Low.

EXISTING USAGE AND/OR PROSPECTIVE RIDERSHIP

Estimated Usage/Ridership

Passengers per Day. Computed by dividing Estimated Annual Ridership (provided by stakeholders) by assumed 250 working days per year.

SYSTEM CONTINUITY AND CONNECTIVITY

(a) Degree of Regional Impact

Regional, Multi-jurisdictional, Local. Provided by stakeholders.

(b) Project Improves Vehicular Access to Major Employment and Population Centers

Medium and High density (population and employment) TAZs were identified in GIS. Access was determined via a spatial overlay analysis using GIS. Results were combined with Regional Significance. Scoring opportunities: Yes and Regional, Yes but Not Regional, No.

(c) Resiliency

1. Project is in a vulnerable area for sea level rise/storm surge/recurrent flooding

Using the Hampton Roads Sea Level Rise (SLR) Policy of 3-feet for medium-term planning (2050-2080), a spatial overlay analysis using GIS was conducted to determine candidate project vulnerability.

2. If vulnerable, planned improvements, design features, or adaptation strategies have been developed to address future sea level rise/storm surge/recurrent flooding

Improvements/strategies developed, No, or N/A (if not vulnerable). Provided by stakeholders.

3. If vulnerable, level of access provided by the candidate project to critical areas or facilities (e.g. hospitals, Fire-EMS, emergency shelters, dense employment area, and single entry/exit point for flood prone areas or neighborhoods)

Critical areas and facilities were identified in GIS. Level of access determined via a spatial overlay analysis using GIS. High, Medium, Low, No disruption due to flooding anticipated responses.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(d) Addresses a Gap

GIS spatial overlay analysis conducted to determine if candidate project provides improved access crossing a barrier such as a body of water or rail. Stakeholders could also indicate if candidate project addresses a social equity gap. Yes/No response.

USER BENEFIT

(a) Annual Travel Time Savings

For each transit project, an average travel speed of 24 mph was assumed. This was compared to an inferior transit average travel speed of 10 mph for the same distance that would be covered by each proposed project. The resulting improvement in travel time was then doubled (to account for round trip) and multiplied by an assumed 250 working days per year; this result was then multiplied by the forecasted Passengers per Day to obtain the Annual Travel Time Savings associated with each project. To calculate Total Annual Travel Time Savings per Rider, the Annual Travel Time Savings was divided by the Estimated Annual Ridership (Annual Travel Time Savings in Hours per Year/Estimated Annual Ridership).

(b) New Project

Yes/No. Provided by stakeholders.

(c) Increased Travel Time Reliability

New or increased service is assumed to increase travel time reliability. Yes/No response.

(d) Operating Efficiency

Assesses the project's potential to provide significantly more cost-effective provision of service. More information on how Operating Efficiency is calculated for transit projects can be found in the DRPT Program Prioritization Technical Documentation.

(e) Accessibility (including ADA) and/or Customer Experience

Assesses the project's potential to significantly improve a customer's ability to access the system or a significant improvement in the ease of use of the system. More information on how Accessibility and/or Customer Experience is calculated for transit projects can be found in the DRPT Program Prioritization Technical Documentation.

(f) Safety and Security

Assesses the project's potential to significantly improve in safety or security. More information on how Safety and Security is calculated for transit projects can be found in the DRPT Program Prioritization Technical Documentation.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

MODAL ENHANCEMENTS

(a) Enhances Other Modes

0 to 3+ Enhancements. Provided by stakeholders.

(b) Provides Improved Access to Multimodal Choices

0 to 3+ Multimodal Choices. Provided by stakeholders.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT UTILITY – ACTIVE TRANSPORTATION

FORECASTED USER DEMAND

Forecasted user demand calculated based off present of adult commuters and regional commute share.

SYSTEM CONTINUITY AND CONNECTIVITY

(a) Provides Access to Transit or Regional Activity Centers

Transit facilities and Regional Activity Centers (collected through stakeholder input) identified in GIS.

Access improvement determined via a spatial overlay analysis using GIS.

0 to 3+ Categories.

(b) Regional Significance

Regional, Multi-jurisdictional, Local. Determined using the following Active Transportation Regional Classification Matrix below (approved by ATS at its August 23, 2019 meeting).

	SHARED-USE PATH, PAVED AND UNPAVED	ONE-WAY & TWO-WAY CYCLE TRACTS	BUFFERED BIKE LANE	BIKE LANE	OTHER BIKE/PED FACILITIES (E.G. BICYCLE BLVD, SHARROWS, SIGNED ROUTES, PAVED SHOULDERS, ETC.)	FUTURE REGIONAL TRAIL STUDY
PART OF REGIONAL TRAIL SYSTEM (ECG, SHRT, BOAT, ERT)	REGIONAL	REGIONAL	REGIONAL	SUB-REGIONAL	SUB-REGIONAL	REGIONAL
2+ LOCALITIES	REGIONAL	REGIONAL	REGIONAL	SUB-REGIONAL	LOCAL	N/A
1 LOCALITY	SUB-REGIONAL	SUB-REGIONAL	SUB-REGIONAL	SUB-REGIONAL	LOCAL	N/A

(c) Connections to Existing Bike/Pedestrian Facilities

Yes/No. Provided by stakeholders.

(d) Elimination of Barriers or Completion of Gaps Across a Major Barrier

GIS spatial overlay analysis conducted to determine if candidate project provides improved access crossing a barrier such as a body of water, rail, or provide an alternate bicycle/pedestrian path away from a major roadway. Stakeholders could also indicate if candidate project addresses a social equity gap. Yes/No response.

(c) Resiliency

1. Project is in a vulnerable area for sea level rise/storm surge/recurrent flooding

Using the Hampton Roads Sea Level Rise (SLR) Policy of 3-feet for medium-term planning (2050-2080), a spatial overlay analysis using GIS was conducted to determine candidate project vulnerability.

2. If vulnerable, planned improvements, design features, or adaptation strategies have been developed to address future sea level rise/storm surge/recurrent flooding

Improvements/strategies developed, No, or N/A (if not vulnerable). Provided by stakeholders.

3. If vulnerable, level of access provided by the candidate project to critical areas or facilities (e.g. hospitals, Fire-EMS, emergency shelters, dense employment area, and single entry/exit point for flood prone areas or neighborhoods)

Critical areas and facilities were identified in GIS. Level of access determined via a spatial overlay analysis using GIS. High, Medium, Low, No disruption due to flooding anticipated responses.

SAFETY

(a) Crash History

Average Number of Bike/Ped Crashes per Year (2014-2018).

(b) Level of Separation/Network Quality

Responses: Physically Separated, Visually Separated – Additional Separation Not Needed, Visually Separated – Additional Separation Needed, No Separation – Separation Needed. Provided by stakeholders.

(c) Associated with Safe Routes to School

Yes/No. Provided by stakeholders.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

MODAL ENHANCEMENTS

(a) Enhances Other Modes

0 to 3+ Enhancements. Provided by stakeholders.

(b) Project Enhances First Mile/Last Mile Connections

Yes/No. Provided by stakeholders.

(c) Provides Improved Access to Multimodal Choices

0 to 3+ Multimodal Choices. Provided by stakeholders.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

ECONOMIC VITALITY – ROADWAYS

TRAVEL TIME AND DELAY IMPACTS

(a) Total Forecasted Reduction in Regional Travel Time

Total forecasted reduction in regional travel time is obtained from the regional travel demand model and is based on the total regional travel time savings (in vehicle hours) between build and no build conditions for each scenario. Scenario results in total forecasted reduction in regional travel time were averaged.

The thresholds for total forecasted reduction in regional travel time are as follows:

FORECASTED REDUCTION IN REGIONAL TRAVEL TIME (IN VEHICLE HOURS)	
VERY HIGH	> 5,000
HIGH	3,750 – 4,999
MEDIUM	2.500 – 3,749
LOW	1,250 – 2,499
VERY LOW	0 – 1,249
NONE	INCREASE IN REGIONAL TRAVEL TIME

(b) Forecasted Reduction in Regional Delay

Forecasted reduction in regional delay is obtained from the regional travel demand model and is based on the difference between congested and free flow travel times between build and no build conditions for each scenario. Scenario results in forecasted reduction in regional delay were averaged.

The thresholds for total forecasted reduction in regional travel time are as follows:

FORECASTED REDUCTION IN REGIONAL DELAY	
VERY HIGH	> 35
HIGH	25 – 34.9
MEDIUM	15 – 24.9
LOW	5 – 14.9
VERY LOW	0 – 4.9
NONE	<0

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

LABOR MARKET ACCESS

Increases Access for High Density Employment Areas

Based on forecasted future employment using the HRTPO Board approved 2045 employment projections for the Baseline and the three Greater Growth employment assumptions. Densities were calculated per square mile for each scenario.

Thresholds were determined using natural breaks.

EMPLOYMENT DENSITY (TAZ FORECASTED EMPLOYMENT/SQUARE MILE)	
HIGH	7,800.01+
MEDIUM	1,401 – 7,780
LOW	0.00 – 1,400

Access to High Density Employment TAZs is determined using a spatial overlay analysis, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 1 MILE
LITTLE/NO ACCESS	> 1 MILE

ADDRESSES THE NEEDS OF BASIC SECTOR INDUSTRIES

(a) Improves Access to Major Military Bases

"Major" based on DOD report ("Base Structure Report", DOD, 2014). Nine (9) facilities have much higher employment than the rest.

Major Military Facilities:

- Dam Neck
- Fort Eustis
- Fort Story
- Langley AFB
- Little Creek Naval Amphibious Base
- Naval Medical Center Portsmouth
- Norfolk Naval Shipyard
- Norfolk Naval Base
- Oceana Naval Air Station

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 5 MILES
LITTLE/NO ACCESS	> 5 MILES

Points assigned based on the following matrix:

ACCESS	NON-MILITARY ROAD	ROAD SERVING THE MILITARY	STRAHNET
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

(b) Military/STRAHNET

Based on whether the roadway is part of the Strategic Highway Network (STRAHNET) or is a roadway serving the military. Roadways serving the military were determined in the HRTPO Military Transportation Needs Study.

(c) Improves Access to Major Tourist Areas

Major Tourist Areas: Oceanfront, Historic Triangle (Williamsburg, Jamestown, Yorktown), and Busch Gardens.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 5 MILES
LITTLE/NO ACCESS	> 5 MILES

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

(d) Increases Access to Port Facilities

This measure reflects truck access based on the total amount of truck hours of delay per mile during the peak periods. The direction and peak period with the highest amount of truck delay is used for this measure. For interchange/intersection projects, the leg of the interchange/intersection with the highest truck delay per mile value is used.

Points are assigned based on the following thresholds:

PORT ACCESS (TRUCK HOURS OF DELAY PER MILE DURING PEAK PERIODS)	
VERY HIGH	> 1.25 HOURS PER MILE
HIGH	1.00 – 1.24 HOURS PER MILE
MEDIUM-HIGH	0.75-0.99 HOURS PER MILE
MEDIUM	0.50-0.74 HOURS PER MILE
LOW	0.25-0.49 HOURS PER MILE
VERY LOW	< 0.25 HOURS PER MILE

(e) Improved Access to Truck Zones

Truck zones are a feature in the regional travel demand model and are defined as zones that contain a concentration of industrial or warehousing land uses or a specific truck generating activity, such as a truck stop, an intermodal transfer facility, or a trucking firm office. Truck Zones are anticipated to have a rate of truck trip ends per employee higher than other zones. Truck Zones have been identified through a review of satellite photos or local knowledge, coordinated with staff from the Virginia Port Authority.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 5 MILES
LITTLE/NO ACCESS	> 5 MILES

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

INCREASED OPPORTUNITY

(a) Provides New or Increased Access Opportunities

Based on change in capacity or reliability:

- New alignment: New Opportunity
- Widening: Increased Opportunity
- Removal of Obstacle (e.g. rail crossing): Increased Opportunity
- Improvements without additional capacity (e.g. bridge replacement or road reconstruction): No Additional Opportunity

(b) Supports Plans for Future Growth

Based on "Land Use/Future Development Compatibility" in Project Viability component:

- For "Compatible and Officially Documented": Yes, supports plans for future growth
- For "Compatible and Not Officially Documented": No, does not support plans for future growth, unless stakeholder input provides otherwise, with documentation
- "Not Compatible": No, does not support plans for future growth

(c) Provides Access to Institutions of Higher Education or Work Force Development Sites

Institutions of Higher Education and Work Force Development Sites were identified in GIS. Data was obtained from HRGEO and includes colleges, universities, professional, technical, and trade schools. HRTPO staff also included Virginia Career Works workforce development sites.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 1 MILE
LITTLE/NO ACCESS	> 1 MILE

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(d) Provides Access to Urban Development Areas/Governor's Opportunity Zones

Urban Development Areas (UDA) and Governor's Opportunity Zones (GOZ) were identified in GIS. Data was obtained from the Virginia Economic Development Partnership on UDAs and GOZs.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 1 MILE
LITTLE/NO ACCESS	> 1 MILE

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

ECONOMIC DISTRESS FACTORS

(a) Provides Access to Low-Income Areas

Low-Income Areas were identified using 2012-2016 data from the American Community Survey (ACS) to identify the location and concentration of households below the poverty level at the Census Block Group level. Census Block Groups that contained low income households greater than the regional average were identified as Low-Income Areas.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	CANDIDATE BUFFER INTERSECTS WITH LOW INCOME AREA
NEAR	< 0.5 MILES
LITTLE/NO ACCESS	> 0.5 MILES

Points assigned based on the following matrix:

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

(b) Provides Access to Areas with High Unemployment

High Unemployment Areas were identified using 2012-2016 data from the American Community Survey (ACS) to identify the location and concentration of high unemployment at the Census Block Group level. Census Block Groups that contained low unemployment greater than the regional average were identified as High Unemployment Areas.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	CANDIDATE BUFFER INTERSECTS WITH LOW INCOME AREA
NEAR	< 0.5 MILES
LITTLE/NO ACCESS	> 0.5 MILES

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

ECONOMIC VITALITY – INTERMODAL/FREIGHT

TRAVEL TIME AND DELAY IMPACTS

(a) Total Forecasted Reduction in Regional Travel Time

Total forecasted reduction in regional travel time is obtained from the regional travel demand model and is based on the total regional travel time savings (in vehicle hours) between build and no build conditions for each scenario. Scenario results in total forecasted reduction in regional travel time were averaged.

The thresholds for total forecasted reduction in regional travel time are as follows:

FORECASTED REDUCTION IN REGIONAL TRAVEL TIME (IN VEHICLE HOURS)	
VERY HIGH	> 5,000
HIGH	3,750 – 4,999
MEDIUM	2.500 – 3,749
LOW	1,250 – 2,499
VERY LOW	0 – 1,249
NONE	INCREASE IN REGIONAL TRAVEL TIME

(b) Forecasted Reduction In Regional Delay

Forecasted reduction in regional delay is obtained from the regional travel demand model and is based on the difference between congested and free flow travel times between build and no build conditions for each scenario. Scenario results in forecasted reduction in regional delay were averaged.

The thresholds for total forecasted reduction in regional travel time are as follows:

FORECASTED REDUCTION IN REGIONAL DELAY	
VERY HIGH	> 35
HIGH	25 – 34.9
MEDIUM	15 – 24.9
LOW	5 – 14.9
VERY LOW	0 – 4.9
NONE	<0

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

LABOR MARKET ACCESS

(a) Impact on Truck Movements

This measure reflects truck access based on the total amount of truck hours of delay per mile during the peak periods. The direction and peak period with the highest amount of truck delay is used for this measure. For interchange/intersection type intermodal projects, the leg of the interchange/intersection with the highest truck delay per mile value is used.

Points are assigned based on the following thresholds:

PORT ACCESS (TRUCK HOURS OF DELAY PER MILE DURING PEAK PERIODS)	
VERY HIGH	> 1.25 HOURS PER MILE
HIGH	1.00 – 1.24 HOURS PER MILE
MEDIUM-HIGH	0.75-0.99 HOURS PER MILE
MEDIUM	0.50-0.74 HOURS PER MILE
LOW	0.25-0.49 HOURS PER MILE
VERY LOW	< 0.25 HOURS PER MILE

(b) Increases Access for High Density Employment Areas

Based on forecasted future employment using the HRTPO Board approved 2045 employment projections for the Baseline and the three Greater Growth employment assumptions. Densities were calculated per square mile for each scenario.

Thresholds were determined using natural breaks.

EMPLOYMENT DENSITY (TAZ FORECASTED EMPLOYMENT/SQUARE MILE)	
HIGH	7,800.01+
MEDIUM	1,401 – 7,780
LOW	0.00 – 1,400

Access to High Density Employment TAZs is determined using a spatial overlay analysis, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 1 MILE
LITTLE/NO ACCESS	> 1 MILE

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

IMPROVES INTERACTION BETWEEN MODES OF TRAVEL FOR BASIC SECTOR INDUSTRIES

(a) Increases Access to the Port

Port facilities were identified in GIS and a spatial overlay analysis was conducted to determine if candidate project would increase direct access. Yes/No response.

(b) Improved Access to Truck Zones

Truck zones are a feature in the regional travel demand model and are defined as zones that contain a concentration of industrial or warehousing land uses or a specific truck generating activity, such as a truck stop, an intermodal transfer facility, or a trucking firm office. Truck Zones are anticipated to have a rate of truck trip ends per employee higher than other zones. Truck Zones have been identified through a review of satellite photos or local knowledge, coordinated with staff from the Virginia Port Authority

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 5 MILES
LITTLE/NO ACCESS	> 5 MILES

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

(c) Improves Flow of Rail

Based on whether facility will improve mobility of rail. Mobility improvement of rail determined using project description and spatial overlay analysis. A 250-foot tolerance was used to establish a buffer around existing rail. Yes/No response.

(d) Increases Access to Airports

Airports were identified in GIS and a spatial overlay analysis was conducted applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 5 MILES
LITTLE/NO ACCESS	> 5 MILES

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

INCREASED OPPORTUNITY

(a) Provides New or Increased Access Opportunities

Based on change in capacity or reliability:

- New alignment: New Access
- Widening: Expanded Capability
- Removal of Obstacle (e.g. rail crossing): Expanded Capability

(b) Supports Plans for Future Growth

Based on "Land Use/Future Development Compatibility" in Project Viability component:

- For "Compatible and Officially Documented": Yes, supports plans for future growth
- For "Compatible and Not Officially Documented": No, does not support plans for future growth, unless stakeholder input provides otherwise, with documentation
- "Not Compatible": No, does not support plans for future growth

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(c) Improves Access to Urban Development Areas/Governor's Opportunity Zones

Urban Development Areas (UDA) and Governor's Opportunity Zones (GOZ) were identified in GIS. Data was obtained from the Virginia Economic Development Partnership on UDAs and GOZs.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer:

ACCESS	BUFFER
DIRECT	<= 0.25 MILES
NEAR	0.25 – 1 MILE
LITTLE/NO ACCESS	> 1 MILE

Points assigned based on the following matrix:

ACCESS	LOCAL	PRINCIPAL	INTERSTATE
DIRECT	MEDIUM	HIGH	HIGH
NEAR	LOW	MEDIUM	MEDIUM
LITTLE/NO ACCESS	LOW	LOW	LOW

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

ECONOMIC VITALITY – TRANSIT

LABOR MARKET ACCESS

(a) Increases Access for Major Employment Centers

TAZs within ½ mile of transit alignment identified. HRTPO Board approved 2045 forecasted total employment for the Baseline and three Greater Growth scenarios were summed for these TAZs.

Points awarded on a sliding scale 0-20 points:

20 Points (max): Total Employment >= 250,000

0 Points: Total Employment <=75,000

(b) Increases Frequency of Service

New LRT, Fixed Guideway, and Ferry projects automatically increase frequency of transit service; bus transfer stations do not.

ADDRESSES THE NEEDS OF BASIC SECTOR INDUSTRIES

(a) Improves Access to Major Military Bases

"Major" based on DOD report ("Base Structure Report", DOD, 2014). Nine (9) facilities have much higher employment than the rest.

- Major Military Facilities:
- Dam Neck
- Fort Eustis
- Fort Story
- Langley AFB
- Little Creek Naval Amphibious Base
- Naval Medical Center Portsmouth
- Norfolk Naval Shipyard
- Norfolk Naval Base
- Oceana Naval Air Station

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer and point allocation:

ACCESS	BUFFER	POINTS
DIRECT	<= 0.25 MILES	10 POINTS
NEAR	0.25 – 5 MILES	5 POINTS
LITTLE/NO ACCESS	> 5 MILES	0 POINTS

(b) Improves Access to Major Tourist Areas

Major Tourist Areas: Oceanfront, Historic Triangle (Williamsburg, Jamestown, Yorktown), and Busch Gardens.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer and point allocation:

ACCESS	BUFFER	POINTS
DIRECT	<= 0.25 MILES	10 POINTS
NEAR	0.25 – 5 MILES	5 POINTS
LITTLE/NO ACCESS	> 5 MILES	0 POINTS

INCREASED OPPORTUNITY

(a) Provides New Access to the Network

New LRT, Fixed Guideway, and Ferry projects provide new access; transfer stations do not.

(b) Supported by Plans for Increased Density and Economic Activity

Stakeholder input: Designated Strategic Growth Area, Planning Supports Increased Density

(c) Provides Access to Institutions of Higher Education or Work Force Development Sites

Institutions of Higher Education and Work Force Development Sites were identified in GIS. Data was obtained from HRGEO and includes colleges, universities, professional, technical, and trade schools. HRTPO staff also included Virginia Career Works workforce development sites.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	<= 0.25 MILES	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

(d) Provides Access to Urban Development Areas/Governor's Opportunity Zones

Urban Development Areas (UDA) and Governor's Opportunity Zones (GOZ) were identified in GIS. Data was obtained from the Virginia Economic Development Partnership on UDAs and GOZs.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	<= 0.25 MILES	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

ECONOMIC DISTRESS FACTORS

(a) Provides Access to Low-Income Areas

Low-Income Areas were identified using 2012-2016 data from the American Community Survey (ACS) to identify the location and concentration of households below the poverty level at the Census Block Group level. Census Block Groups that contained low income households greater than the regional average were identified as Low-Income Areas.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	CANDIDATE BUFFER INTERSECTS WITH LOW INCOME AREA	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Provides Access to Areas with High Unemployment

High Unemployment Areas were identified using 2012-2016 data from the American Community Survey (ACS) to identify the location and concentration of high unemployment at the Census Block Group level. Census Block Groups that contained low unemployment greater than the regional average were identified as High Unemployment Areas.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	CANDIDATE BUFFER INTERSECTS WITH LOW INCOME AREA	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

ECONOMIC VITALITY – ACTIVE TRANSPORTATION

LABOR MARKET ACCESS

Increases Access for Major Employment Centers

TAZs within ½ mile of transit alignment identified. HRTPO Board approved 2045 forecasted total employment for the Baseline and three Greater Growth scenarios were summed for these TAZs.

Points awarded on a sliding scale 0-20 points:

20 Points (max): Total Employment > 15,000

0 Points: Total Employment < 1,000

ADDRESSES THE NEEDS OF BASIC SECTOR INDUSTRIES

(a) Improves Access to Major Military Bases

"Major" based on DOD report ("Base Structure Report", DOD, 2014). Nine (9) facilities have much higher employment than the rest.

Major Military Facilities:

- Dam Neck
- Fort Eustis
- Fort Story
- Langley AFB
- Little Creek Naval Amphibious Base
- Naval Medical Center Portsmouth
- Norfolk Naval Shipyard
- Norfolk Naval Base
- Oceana Naval Air Station

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer and point allocation:

ACCESS	BUFFER	POINTS
DIRECT	<= 0.25 MILES	10 POINTS
NEAR	0.25 – 5 MILES	5 POINTS
LITTLE/NO ACCESS	> 5 MILES	0 POINTS

(b) Improves Access to Major Tourist Areas

Major Tourist Areas: Oceanfront, Historic Triangle (Williamsburg, Jamestown, Yorktown), and Busch Gardens.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer and point allocation:

ACCESS	BUFFER	POINTS
DIRECT	<= 0.25 MILES	10 POINTS
NEAR	0.25 – 5 MILES	5 POINTS
LITTLE/NO ACCESS	> 5 MILES	0 POINTS

INCREASED OPPORTUNITY

(a) Provides New Access to the Network

New facilities indicated as providing new access to the network.

(b) Supports Plans for Future Growth

Based on "Land Use/Future Development Compatibility" in Project Viability component:

- For "Compatible and Officially Documented": Yes, supports plans for future growth
- For "Compatible and Not Officially Documented": No, does not support plans for future growth, unless stakeholder input provides otherwise, with documentation
- "Not Compatible": No, does not support plans for future growth

(c) Provides Access to Institutions of Higher Education or Work Force Development Sites

Institutions of Higher Education and Work Force Development Sites were identified in GIS. Data was obtained from HRGEO and includes colleges, universities, professional, technical, and trade schools. HRTPO staff also included Virginia Career Works workforce development sites.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	<= 0.25 MILES	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(d) Provides Access to Urban Development Areas/Governor's Opportunity Zones

Urban Development Areas (UDA) and Governor's Opportunity Zones (GOZ) were identified in GIS. Data was obtained from the Virginia Economic Development Partnership on UDAs and GOZs.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	<= 0.25 MILES	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

ECONOMIC DISTRESS FACTORS

(a) Provides Access to Low-Income Areas

Low-Income Areas were identified using 2012-2016 data from the American Community Survey (ACS) to identify the location and concentration of households below the poverty level at the Census Block Group level. Census Block Groups that contained low income households greater than the regional average were identified as Low-Income Areas.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	CANDIDATE BUFFER INTERSECTS WITH LOW INCOME AREA	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

(b) Provides Access to Areas with High Unemployment

High Unemployment Areas were identified using 2012-2016 data from the American Community Survey (ACS) to identify the location and concentration of high unemployment at the Census Block Group level. Census Block Groups that contained low unemployment greater than the regional average were identified as High Unemployment Areas.

Access improvement determined via a spatial overlay analysis using GIS, applying the following buffer, and scoring response:

ACCESS	BUFFER	YES/NO
DIRECT	CANDIDATE BUFFER INTERSECTS WITH LOW INCOME AREA	YES
NEAR	0.25 – 5 MILES	YES
LITTLE/NO ACCESS	> 5 MILES	NO

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT VIABILITY - ROADWAYS

PROJECT READINESS

(a) Percent of Committed Funding

0-100%. Provided by stakeholders.

(b) Prior Commitment

Prior commitment for Roadway Projects is inclusion in currently adopted LRTP. Yes/No. Provided by stakeholders.

(c) Percentage of Project Design Complete

0-100%. Provided by stakeholders.

(d) Environmental Documents Status

Full (NEPA has been completed), Partial (NEPA has been initiated), None. Provided by stakeholders.

(e) Environmental Decisions Obtained

Yes/No. Provided by stakeholders.

(f) ROW Obtained/Utilities Coordinated

Full (both ROW and Utilities have been coordinated), Partial (either ROW or Utilities have been coordinated), None. Provided by stakeholders.

LAND USE/FUTURE DEVELOPMENT COMPATIBILITY

Compatible and Officially Documented, Compatible but Not Officially Documented, Not Compatible. Provided by stakeholders.

ENVIRONMENTAL CONSIDERATIONS

(a) Environmental Measures of Effectiveness (MOE)

Evaluates the potential of a project to address the reduction of pollutant emissions and energy consumption. More information on how environmental MOEs are calculated can be found in the ***SMART SCALE Technical Guide***. Responses include 0 to 3+ MOEs.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Acres of Natural and Cultural Resources

Evaluates potential of project to minimize the impact on natural and cultural resources. More information on how impacts to natural and cultural resources are calculated can be found in the ***SMART SCALE Technical Guide***. Responses include High, Medium, Low, or No Impact.

IMPACT TO NATURAL/CULTURAL RESOURCES		
NATURAL/CULTURAL RESOURCES	**DATA SOURCE**	**TYPE**
CONSERVATION LANDS	VDCR	CONSERVATION LANDS
		EASEMENTS
		NATURAL HERITAGE SCREENS
	VDOF	AGRICULTURAL/FOREST DISTRICTS
SPECIES AND HABITAT	VDGIF	THREATENED & ENDANGERED SPECIES
CULTURAL RESOURCES	NPS	AMERICAN BATTLEFIELD PROTECTION PROGRAM
	VDHR	ARCHITECTURE
		ARCHAEOLOGY
WETLANDS	USFWS	NATIONAL WETLANDS INVENTORY

(c) Project Reduces traffic delay at a congested bottleneck with a high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities

Yes/No, based on the travel time and LOS analysis used in the Project Utility section.

(d) Percentage of truck traffic (for congested bottlenecks with high truck traffic)

Percent of truck traffic was calculated for congested intersections, interchanges, or other bottlenecks that have a high percentage of truck traffic (defined as 8%, based on the threshold used in the SMART SCALE prioritization process.)

COST EFFECTIVENESS

An index created by dividing the combined benefits of a project by the estimated cost. Costs are expressed in millions and in current year dollars.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT VIABILITY – INTERMODAL/FREIGHT

PROJECT READINESS

(a) Percent of Committed Funding

0-100%. Provided by stakeholders.

(b) Prior Commitment

Prior commitment for Roadway Projects is inclusion in currently adopted LRTP. Yes/No. Provided by stakeholders.

(c) Percentage of Project Design Complete

0-100%. Provided by stakeholders.

(d) Environmental Documents Status

Full (NEPA has been completed), Partial (NEPA has been initiated), None. Provided by stakeholders.

(e) Environmental Decisions Obtained

Yes/No. Provided by stakeholders.

(f) ROW Obtained/Utilities Coordinated

Full (both ROW and Utilities have been coordinated), Partial (either ROW or Utilities have been coordinated), None. Provided by stakeholders.

LAND USE/FUTURE DEVELOPMENT COMPATIBILITY

Compatible and Officially Documented, Compatible but Not Officially Documented, Not Compatible. Provided by stakeholders.

ENVIRONMENTAL CONSIDERATIONS

(a) Environmental Measures of Effectiveness (MOE)

Evaluates the potential of a project to address the reduction of pollutant emissions and energy consumption. More information on how environmental MOEs are calculated can be found in the ***SMART SCALE Technical Guide***. Responses include 0 to 3+ MOEs.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Acres of Natural and Cultural Resources

Evaluates potential of project to minimize the impact on natural and cultural resources. More information on how impacts to natural and cultural resources are calculated can be found in the ***SMART SCALE Technical Guide***. Responses include High, Medium, Low, or No Impact.

IMPACT TO NATURAL/CULTURAL RESOURCES		
NATURAL/CULTURAL RESOURCES	**DATA SOURCE**	**TYPE**
CONSERVATION LANDS	VDCR	CONSERVATION LANDS
		EASEMENTS
		NATURAL HERITAGE SCREENS
	VDOF	AGRICULTURAL/FOREST DISTRICTS
SPECIES AND HABITAT	VDGIF	THREATENED & ENDANGERED SPECIES
CULTURAL RESOURCES	NPS	AMERICAN BATTLEFIELD PROTECTION PROGRAM
	VDHR	ARCHITECTURE
		ARCHAEOLOGY
WETLANDS	USFWS	NATIONAL WETLANDS INVENTORY

(c) Percentage of truck traffic (for congested bottlenecks with high truck traffic)

Percent of truck traffic was calculated for congested intersections, interchanges, or other bottlenecks that have a high percentage of truck traffic.

COST EFFECTIVENESS

An index created by dividing the combined benefits of a project by the estimated cost. Costs are expressed in millions and in current year dollars.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT VIABILITY – TRANSIT

PROJECT READINESS

(a) Percent of Committed Funding

0-100%. Provided by stakeholders.

(b) Prior Commitment

Prior commitment for Transit Projects is inclusion in currently adopted LRTP or Transit Vision Plan. Yes/No. Provided by stakeholders.

(c) Percentage of Project Design Complete

0-100%. Provided by stakeholders.

(d) Environmental Documents Status

Full (NEPA has been completed), Partial (NEPA has been initiated), None. Provided by stakeholders.

(e) Environmental Decisions Obtained

Yes/No. Provided by stakeholders.

(f) ROW Obtained/Utilities Coordinated

Full (both ROW and Utilities have been coordinated), Partial (either ROW or Utilities have been coordinated), None. Provided by stakeholders.

LAND USE/FUTURE DEVELOPMENT COMPATIBILITY

Compatible and Officially Documented, Compatible but Not Officially Documented, Not Compatible. Provided by stakeholders.

ENVIRONMENTAL CONSIDERATIONS

(a) Environmental Measures of Effectiveness (MOE)

Evaluates the potential of a project to address the reduction of pollutant emissions and energy consumption. More information on how environmental MOEs are calculated can be found in the ***SMART SCALE Technical Guide***. Responses include 0 to 3+ MOEs.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Acres of Natural and Cultural Resources

Evaluates potential of project to minimize the impact on natural and cultural resources. More information on how impacts to natural and cultural resources are calculated can be found in the ***SMART SCALE Technical Guide***. Responses include High, Medium, Low, or No Impact.

IMPACT TO NATURAL/CULTURAL RESOURCES		
NATURAL/CULTURAL RESOURCES	**DATA SOURCE**	**TYPE**
CONSERVATION LANDS	VDCR	CONSERVATION LANDS
		EASEMENTS
		NATURAL HERITAGE SCREENS
	VDOF	AGRICULTURAL/FOREST DISTRICTS
SPECIES AND HABITAT	VDGIF	THREATENED & ENDANGERED SPECIES
CULTURAL RESOURCES	NPS	AMERICAN BATTLEFIELD PROTECTION PROGRAM
	VDHR	ARCHITECTURE
		ARCHAEOLOGY
WETLANDS	USFWS	NATIONAL WETLANDS INVENTORY

(c) Air Quality/Emissions Reduction

The difference between total carbon dioxide, methane, and nitrous oxide emissions (in tons per commuter) of single-occupant passenger cars and transit was calculated. Then, this difference was multiplied by the number of estimated annual trips for each project.

TRAVEL MODE	CO2, CH4, AND N2O EMISSIONS (TONS PER PASSENGER-MILE)
CARS	4.707×10-4
TRANSIT	1.863×10-4

COST EFFECTIVENESS

An index created by dividing the combined benefits of a project by the estimated cost. Costs are expressed in millions and in current year dollars.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

PROJECT VIABILITY – ACTIVE TRANSPORTATION

PROJECT READINESS

(a) Percent of Committed Funding

0-100%. Provided by stakeholders.

(b) Prior Commitment

Prior commitment for Active Transportation Projects is inclusion in currently adopted LRTP or local Comprehensive Plan. Yes/No. Provided by stakeholders.

(c) Percentage of Project Design Complete

0-100%. Provided by stakeholders.

(d) Environmental Documents Status

Full (NEPA has been completed), Partial (NEPA has been initiated), None. Provided by stakeholders.

(e) Environmental Decisions Obtained

Yes/No. Provided by stakeholders.

(f) ROW Obtained/Utilities Coordinated

Full (both ROW and Utilities have been coordinated), Partial (either ROW or Utilities have been coordinated), None. Provided by stakeholders.

LAND USE/FUTURE DEVELOPMENT COMPATIBILITY

Compatible and Officially Documented, Compatible but Not Officially Documented, Not Compatible. Provided by stakeholders.

ENVIRONMENTAL CONSIDERATIONS

(a) Environmental Measures of Effectiveness (MOE)

Evaluates the potential of a project to address the reduction of pollutant emissions and energy consumption. More information on how environmental MOEs are calculated can be found in the SMART SCALE Technical Guide. Responses include 0 to 3+ MOEs.

APPENDIX A: LRTP DESCRIPTION OF CALCULATIONS

(b) Acres of Natural and Cultural Resources

Evaluates potential of project to provide access to natural and cultural resources. Responses include High, Medium, Low, or No Access.

IMPACT TO NATURAL/CULTURAL RESOURCES		
NATURAL/CULTURAL RESOURCES	**DATA SOURCE**	**TYPE**
CONSERVATION LANDS	VDCR	CONSERVATION LANDS
		EASEMENTS
		NATURAL HERITAGE SCREENS
	VDOF	AGRICULTURAL/FOREST DISTRICTS
SPECIES AND HABITAT	VDGIF	THREATENED & ENDANGERED SPECIES
CULTURAL RESOURCES	NPS	AMERICAN BATTLEFIELD PROTECTION PROGRAM
	VDHR	ARCHITECTURE
		ARCHAEOLOGY
WETLANDS	USFWS	NATIONAL WETLANDS INVENTORY

(c) Air Quality/Emissions Reduction

Eliminated vehicle trips and estimated reductions in VMT are calculated to analyze estimated impact of the project on VOC and NOx reductions.

COST EFFECTIVENESS

An index created by dividing the combined benefits of a project by the estimated cost. Costs are expressed in millions and in current year dollars.

APPENDIX A: 2045 WEIGHTING FACTORS - PROJECT UTILITY

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Highway Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
% Reduction in Existing and Future V/C Ratios (Daily Delay)	*10.00*
Existing Peak Period Congestion/Level of Service	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Impact to Nearby Roadways	*10.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
System Continuity and Connectivity	**25.00**
Degree of Regional Impact	*15.00*
Improves Access to Major Employment or Population Centers	*3.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
Safety and Security	**15.00**
Reduction of EPDO of Fatal and Serious Injury Crashes	*5.00*
Reduction of EPDO Rate of Fatal and Serious Injury Crashes	*5.00*
Improvement to Incident Management or Evacuation Routes	*5.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*3.00*
Access to Multimodal Choices	*2.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Interchange Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
Existing Queue Conditions: Number of Approaches with Queues	*10.00*
Queue Improvements: Number of Approaches Improved	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Number of Movements Added or Improved	*10.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
System Continuity and Connectivity	**25.00**
Degree of Regional Impact	*15.00*
Improves Access to Major Employment or Population Centers	*3.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
Safety and Security	**15.00**
Reduction of EPDO of Fatal and Serious Injury Crashes	*5.00*
Reduction of EPDO Rate of Fatal and Serious Injury Crashes	*5.00*
Improvement to Incident Management or Evacuation Routes	*5.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*3.00*
Access to Multimodal Choices	*2.00*
PROJECT UTILITY TOTAL	***100.00***

APPENDIX A: 2045 WEIGHTING FACTORS - PROJECT UTILITY

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Bridge & Tunnel Projects	
PROJECT UTILITY	
Congestion Level	**40.00**
% Reduction in Existing and Future V/C Ratios (Daily Delay)	*10.00*
Existing Peak Period Congestion/Level of Service	*10.00*
Person Throughput	*5.00*
Person Hours of Delay	*5.00*
Impact to Nearby Roadways	*10.00*
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*10.00*
Truck Travel Time Reliability (TTTR)	*5.00*
Infrastructure Condition	**15.00**
Bridge State of Good Repair Ratings:	
Condition Factor	*5.50*
Importance Factor	*4.50*
Design Redundancy Factor	*3.00*
Structure Capacity	*2.00*
Tunnels:	
Age of Tunnel	*5.00*
Last Major Repair	*5.00*
Costs for Necessary Repairs/Upgrades	*5.00*
System Continuity and Connectivity	**15.00**
Degree of Regional Impact	*5.00*
Improves Access to Major Employment or Population Centers	*3.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
Safety and Security	**10.00**
Reduction of EPDO of Fatal and Serious Injury Crashes	*2.50*
Reduction of EPDO Rate of Fatal and Serious Injury Crashes	*2.50*
Improvement to Incident Management or Evacuation Routes	*3.00*
Diversion Impact Due to Failure (Impact of Detour to Alternate Crossing)	*2.00*
Modal Enhancements	**5.00**
Enhances Other Modal Categories	*2.00*
Access to Multimodal Choices	*2.00*
Provides Continuous Maritime Crossing	*1.00*
PROJECT UTILITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Intermodal/Freight Projects	
PROJECT UTILITY	
Better Accommodates Intermodal Movements	**30.00**
Improves Rail/Vehicular Access	**30.00**
Travel Time Reliabililty	**15.00**
Level of Travel Time Reliability (LOTTR)	*5.00*
Truck Travel Time Reliability (TTTR)	*10.00*
System Continuity and Connectivity	**15.00**
Degree of Regional Impact	*10.00*
Resiliency	*3.00*
Addresses a Gap	*2.00*
Modal Enhancements	**10.00**
Enhances Other Modal Categories	*6.00*
Access to Multimodal Choices	*4.00*
PROJECT UTILITY TOTAL	***100.00***

Transit Projects	
PROJECT UTILITY	
Congestion - Percent of Trips Removed from Roadways	**10.00**
Existing Usage and/or Prospective Ridership, Coverage Area/ Population Served	**20.00**
System Continuity and Connectivity	**25.00**
Degree of Regional Impact	*9.00*
Improves Access to Major Employment or Population Centers	*9.00*
Resiliency	*5.00*
Addresses a Gap	*2.00*
User Benefit	**35.00**
Annual Travel Time Savings per Rider	*10.00*
New Project	*5.00*
Increased Travel Time Reliability	*5.00*
Operating Efficiency	*5.00*
Accessibility (including ADA) and/or Customer Experience	*5.00*
Safety and Security	*5.00*
Modal Enhancements	**10.00**
Enhances Other Modal Categories	*6.00*
Access to Multimodal Choices	*4.00*
PROJECT UTILITY TOTAL	***100.00***

APPENDIX A: 2045 WEIGHTING FACTORS - PROJECT UTILITY

2045 LRTP Project Prioritization Weighting Factors - Project Utility

Active Transportation Projects	
PROJECT UTILITY	
Existing Usage and/or User Demand	**20.00**
System Continuity and Connectivity	**30.00**
Access to Transit, Local, or Regional Destinations	*10.00*
Regional Significance	*5.00*
Connections to Existing Bicycle/Pedestrian Facilities	*5.00*
Elimination of Barriers to Major Destinations	*5.00*
Resiliency	*5.00*
Safety	**30.00**
Crash History	*15.00*
Level of Separation/Network Quality	*10.00*
Associated with Safe Routes to School	*5.00*
Modal Enhancements	**20.00**
Enhances Other Modal Categories	*10.00*
Enhances First Mile - Last Mile Connections	*6.00*
Access to Multimodal Choices	*4.00*
PROJECT UTILITY TOTAL	***100.00***

APPENDIX A: 2045 WEIGHTING FACTORS - ECONOMIC VITALITY

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Highway Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to Urban Development Areas/Governor's Opportunity Zones	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

Interchange Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to Urban Development Areas/Governor's Opportunity Zones	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Bridge & Tunnel Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**10.00**
Increased Access for High Density Employment Areas	*10.00*
Addresses the Needs of Basic Sector Industries	**30.00**
Increases Access for Defense Installations	*6.00*
Facility part of STRAHNET/Roadway Serving the Military	*4.00/3.00*
Increases Access for Port Facilities	*5.00*
Provides Improved Access to Truck Zones	*5.00*
Increases Access to Tourist Destinations	*10.00*
Increased Opportunity	**20.00**
Provides New of Increased Access	*5.00*
Supports Plans for Future Growth	*5.00*
Provides Access to Institutions of Higher Education (including workforce development sites)	*5.00*
Improved Access to Urban Development Areas/Governor's Opportunity Zones	*5.00*
Economic Distress Factors	**10.00**
Provides Access to Low Income Areas	*5.00*
Provides Access to Areas with High Unemployment	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

Intermodal/Freight Projects	
ECONOMIC VITALITY	
Travel Time and Delay Impacts	**30.00**
Total Reduction in Regional Travel Time	*15.00*
Total Reduction in Regional Delay	*15.00*
Labor Market Access	**20.00**
Impact on Truck Movement	*15.00*
Increases Access for High Density Employment Areas	*5.00*
Improves Interaction Between Modes of Travel for Basic Sector Industries	**20.00**
Increases Access for Port Facilities	*5.00*
Improves Access to Truck Zones	*5.00*
Improves Flow of Rail	*5.00*
Increases Access to Air	*5.00*
Increased Opportunity	**30.00**
Provides New of Increased Access	*15.00*
Supports Plans for Future Growth	*10.00*
Improved Access to Urban Development Areas/Governor's Opportunity Zones	*5.00*
ECONOMIC VITALITY TOTAL	***100.00***

APPENDIX A: 2045 WEIGHTING FACTORS - ECONOMIC VITALITY

2045 LRTP Project Prioritization Weighting Factors - Economic Vitality

Transit Projects	
ECONOMIC VITALITY	
Labor Market Access	**30.00**
Increases Access for Major Employment Centers	***20.00***
Increases Frequency of Service	***10.00***
Addresses the Needs of Basic Sector Industries	**20.00**
Provides or Improves Access for Defense Installations	***10.00***
Provides/Improves Access for Tourist Destinations	***10.00***
Increased Opportunity - Provides New Access to the Network	**30.00**
Supported by Plans for Increased Density and Economic Activity	***15.00***
Provides New Access to the Network	***5.00***
Provides Access to Institutions of Higher Education (including workforce development sites)	***5.00***
Improved Access to Urban Development Areas/Governor's Opportunity Zones	***5.00***
Economic Distress Factors	**20.00**
Provides Access to Low Income Areas	***10.00***
Provides Access to Areas with High Unemployment	***10.00***
ECONOMIC VITALITY TOTAL	***100.00***

Active Transportation Projects	
ECONOMIC VITALITY	
Labor Market Access	**20.00**
Increases Access for Major Employment Centers	***20.00***
Addresses the Needs of Basic Sector Industries	**20.00**
Provides or Improves Access for Defense Installations	***10.00***
Provides/Improves Access for Tourist Destinations	***10.00***
Increased Opportunity - Provides New Access to the Network	**40.00**
Supports Plans for Future Growth	***10.00***
Provides New Access to the Network	***10.00***
Provides Access to Institutions of Higher Education (including workforce development sites)	***10.00***
Improved Access to Urban Development Areas/Governor's Opportunity Zones	***10.00***
Economic Distress Factors	**20.00**
Provides Access to Low Income Areas	***10.00***
Provides Access to Areas with High Unemployment	***10.00***
ECONOMIC VITALITY TOTAL	***100.00***

APPENDIX A: 2045 WEIGHTING FACTORS - PROJECT VIABILITY

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Highway Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

Interchange Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Bridge & Tunnel Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*3.00*
Project reduces traffic delay at a congested bottleneck with high percentage of truck traffic and/or includes improvements to freight/rail/intermodal facilities	*2.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*2.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

Intermodal/Freight Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*4.00*
Percentage of truck traffic (for congested bottlenecks with high truck traffic)	*3.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

APPENDIX A: 2045 WEIGHTING FACTORS - PROJECT VIABILITY

2045 LRTP Project Prioritization Weighting Factors - Project Viability

Transit Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Environmental MOEs	*3.00*
Acres of Natural and Cultural Resources	*4.00*
Air Quality/Emissions Reduction (Tons of emissions (HC and Nox) reduced per year)	*3.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

Active Transportation Projects	
PROJECT VIABILITY	
Project Readiness	**50.00**
Percentage of Committed Funding	*15.00*
Prior Commitment	*10.00*
Project alignment status	*5.00*
Percentage of Project Design Complete	*5.00*
Environmental Documents Status	*5.00*
Environmental Decisions Obtained	*5.00*
ROW Obtained/Utilities Coordinated	*5.00*
Land Use/Future Development Compatibility	**20.00**
Environmental:	**10.00**
Access to Natural and Cultural Resources	*6.00*
Air Quality/Emissions Reduction (Tons of emissions (HC and Nox) reduced per year)	*4.00*
Cost Effectiveness	**20.00**
PROJECT VIABILITY TOTAL	**100.00**

B

APPENDIX B: PUBLIC COMMENTS

HRTPO Project Prioritization Tool Update

HRTPO Project Prioritization

APPENDIX B: PROJECT PRIORITIZATION TOOL UPDATE PUBLIC NOTICE

HRTPO Project Prioritization Tool: Recommended Enhancements

The HRTPO Project Prioritization Tool was developed to assist regional decision-makers in prioritizing transportation projects based off technical merits and regional benefits, evaluating projects based on Project Utility, Economic Vitality, and Project Viability. The Tool, which has been used in the past two Long-Range Transportation Plan (LRTP) updates and in the identification of the Regional Priority Projects, was designed to be updated periodically to reflect current conditions and regional priorities.

On April 5, 2017, the LRTP Subcommittee unanimously voted for HRTPO staff to initiate the process of updating the Project Prioritization Tool based on recommendations received by staff. Since that time, HRTPO staff has been conducting research and soliciting additional feedback from regional stakeholders. Since 2018, HRTPO staff has been working with the Project Prioritization Working Group and the LRTP Subcommittee, along with other HRTPO advisory committees, to develop and refine potential measures to incorporate or enhance in the Tool, and adjust weighting factors based on these recommended improvements. The Project Prioritization Task Force and the LRTP Subcommittee have both recommended approval of the recommended enhancements and updated weighting factors. On February 5, 2020, the Transportation Technical Advisory Committee also recommended approval of the recommended enhancements and updated weighting factors.

Please click on the following link for more information on the HRTPO Project Prioritization Tool and to review the recommended enhancements: https://www.hrtpo.org/page/project-prioritization/

All interested parties are encouraged to review the draft recommended enhancements to the HRTPO Project Prioritization Tool. Please send comments to Dale Stith, Principal Transportation Planner, at dstith@hrtpo.org or by mail to 723 Woodlake Drive, Chesapeake, VA, 23320 by **March 6, 2020.**

Southern Environmental Law Center

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SouthernEnvironment.org

March 5, 2020

Dale Stith
Principal Transportation Planner
Hampton Roads Transportation Planning Organization
723 Woodlake Drive
Chesapeake, VA 23320
dstith@hrtpo.org VIA EMAIL

Dear Ms. Stith,

The Southern Environmental Law Center (SELC) offers the following comments on the proposed modifications to the Hampton Roads Transportation Planning Organization's Project Prioritization Tool (PPT). SELC is a non-partisan, non-profit organization headquartered in Virginia that works throughout the southeast to promote policies and laws that protect our natural resources, strengthen our communities, and improve our quality of life.

SELC strongly supports using objective criteria to evaluate and prioritize transportation proposals, and we commend the HRTPO for being one of the pioneers in Virginia in this regard. Further, recognizing that project prioritization tools and their associated methodologies should be evaluated and updated over time as the quality and quantity of available data improve and as regional priorities shift in response to new or growing challenges, we applaud the HRTPO for taking the initiative to review the PPT. We also want to thank you again for taking the time to speak with us and exchange emails to answer some of our questions about the proposed changes, and we hope these comments can help strengthen key aspects of the proposed changes before they are finalized.

I. Enhancing Consideration of a Project's Environmental Impacts

A. Factoring in Impacts to Natural Resources

We strongly support adding consideration of projects' environmental impacts to the PPT, as this crucial component of a project's viability and overall value is not captured in the current PPT criteria. As noted in slide 31 in the *Additional Resource Slides* presentation available on the HRTPO's Project Prioritization webpage (https://www.hrtpo.org/page/project-prioritization/), the current PPT criteria assess the status of a project's environmental review and permits, but provide no real indication of the project's actual environmental impact.

Further, we support the proposal to assess a project's impact on natural and cultural resource acreage as a primary element of its environmental impact score (the "Acres of Natural and Cultural Resources" criterion), similar to one of the ways environmental impacts are evaluated in Virginia's SMART SCALE project prioritization tool. Slide 13 in the *Additional Resource Slides* presentation indicates that the specific types of resources assessed for this criterion will be conservation lands, protected habitats for threatened and endangered species, cultural resources, and wetlands. In addition to their purely ecological value, wetlands and other types of conservation lands and wildlife habitats are of particular importance in Hampton Roads because of the vital protections they provide to communities by slowing and storing floodwaters and by buffering against storm surges and rising seas. In a region that is already facing significant impacts from climate change, and with new data showing sea level rise accelerating in Virginia and along the East Coast,[1] it is imperative that the PPT take into account the extent to which a transportation proposal would negatively impact these natural resiliency resources.

B. Valuing Impacts to Natural and Cultural Resource Acreage Adequately

Although we are glad that these natural resource acreage impacts would now be assessed under the PPT, we are concerned by the minimal value this criterion would have in proportion to a project's overall score. As proposed, the "Acres of Natural and Cultural Resources" criterion would only account for up to 3 points (or 1% of a project's overall score) for the Highway, Interchange, and Bridge & Tunnel project categories, and up to 4 points (or 1.33% of a project's overall score) for the Intermodal and Transit project categories. This strikes us as far too few points to adequately reflect the value of these resources to the region or the detrimental effect that damaging these resources can have on project viability (since projects with greater impacts to environmental and cultural resources are more likely to encounter permitting delays and litigation, among other challenges). We therefore urge the HRTPO to increase the value of the "Acres of Natural and Cultural Resources" criterion to better reflect its importance.

One way to do this would be to reallocate value from the "Basic Environmental Review" criterion to the "Acres of Natural and Cultural Resources" criterion. In our view, the proposed "Basic Environmental Review" criterion misses the mark as an assessment of environmental impacts. Based on the *Additional Resource Slides* presentation (and slide 33, specifically), the criterion appears to consist of a few "Yes/No" questions such as: (1) "Is there a fatal flaw for permitting?" and (2) "Is the intrusion into sensitive areas justified?". Answering these questions requires a high degree of subjectivity, diverting sharply from the objective and data-driven approach that we understand the HRTPO strives for the PPT to embody. Further, these questions fail to capture a project's environmental impact in a meaningful way. Indeed, the question asking whether the intrusion into sensitive areas is justified seems to provide an opportunity for

[1] David Malmquist, *Sea-level Report Cards: 2019 Data Adds to Trend in Acceleration*, Va. Inst. of Marine Sci. (Jan. 30, 2020), https://www.vims.edu/newsandevents/topstories/2020/slrc_2019.php.

an applicant to summarily *dismiss* a project's environmental impacts based on the applicant's view of the value of other aspects of the proposal.

We understand that the HRTPO first considered incorporating certain environmental measures of effectiveness (MOEs) from SMART SCALE to serve as the portion of a project's score that is now proposed to be represented in the "Basic Environmental Review" criterion, but that the "Environmental MOEs" criterion was ultimately rejected due to a concern that several of the environmental MOEs from SMART SCALE are fairly design-specific and do not translate well to projects in the more conceptual stage of development that are typically included in long-range transportation plans. Although that rationale makes some sense to us, we still have the serious doubts we outlined above about the effectiveness of the "Basic Environmental Review" criterion that has been proposed in place of the "Environmental MOEs" criterion. We therefore recommend against including the "Basic Environmental Review" criterion at this time, and we urge the HRTPO instead to allocate its share of point value (3 points in most project categories) to the far more objective and informative "Acres of Natural and Cultural Resources" criterion, providing a much-needed boost to its overall value within the project scoring methodology.

C. Assessing Natural and Cultural Resource Acreage Impacts for Active Transportation Projects

As we understand the current proposal, the "Acres of Natural and Cultural Resources" criterion for projects in the Active Transportation category will award points based on the extent to which a project would *increase access* to these resources. That approach is in contrast to how this criterion will be assessed for the other project categories; points will be awarded to proposals in those other categories based on *avoiding impacts* to natural and cultural resources.

We are concerned that the approach proposed for this criterion in the Active Transportation category could in some cases inadvertently reward projects that adversely impact the very areas to which they are providing access (for example, a pedestrian trail leading to a natural area that results in the clearing and paving of a path through part of the natural area). Providing better access to natural and cultural resources can be beneficial for many reasons, but it does not always result in a positive environmental impact—particularly where the proposed infrastructure would directly or indirectly damage some portion of the resource.

We urge the HRTPO not to use this different approach to assessing this criterion for Active Transportation projects. Rather, we believe that for all project categories, the "Acres of Natural and Cultural Resources" criterion should focus on the potential damage to these resources. The improved access that active transportation projects might provide to natural and cultural resources would be more appropriately captured in a different measure, such as the "Increased Opportunity" criteria under the Economic Vitality measure.

D. Rewarding Projects that Improve Freight Rail Networks or Intermodal Facilities

Slide 34 in the *Additional Resource Slides* presentation indicates that at one point during the review process, an environmental criterion was considered that would reward projects that "include[] improvements to the freight rail network or intermodal (truck to rail) facilities/ports/terminals." We believe this is a suitable environmental criterion because transportation improvements that help move freight from our highways to other modes of transportation can provide significant air quality benefits (in addition to improving highway safety and reducing congestion). However, that same slide indicates that one of the regional stakeholders expressed concern that this criterion "appears to double dip from the Economic Vitality section," and it seems that it is no longer being considered as a result.

It is unclear to us how the Economic Vitality measure captures enhancements to the freight rail network and/or intermodal facilities. We assume the stakeholder comment cited in Slide 34 may refer to the "Addresses the Needs of Basic Sector Industries" criterion, which includes an element for increasing access to port facilities. However, any slight potential for overlap with respect to port facilities does not, in our view, justify eliminating a proposed criterion that is based on a much broader set of transportation modes and facility types, and we recommend that it be added back to the changes that will be presented to the HRTPO Board later this month.

II. Including Resiliency in the Project Prioritization Tool

For many of the same reasons we strongly support adding to the PPT an environmental criterion that assesses a project's impacts to natural areas, we are also in favor of adding a resiliency component that would generally work to discourage the building of new transportation projects in areas threatened by flooding and other effects of climate change. For this reason, we think the current proposal's default position of rewarding points to projects that are not located in areas vulnerable to sea level rise, storm surge, or recurrent flooding is a good one.

Under the proposed changes, projects that *are* proposed in vulnerable areas would be awarded points if: (1) the applicant has "developed planned improvements or adaptation strategies to address future sea level rise/storm surge/recurrent flooding" (see slide 6 in the *Additional Resource Slides* presentation); or (2) the project provides access to critical areas or facilities such as hospitals, emergency shelters, and dense employment areas.[2]

We are concerned that the first of these two prongs is too vague and could be read to cover situations as broad as one in which a locality is awarded points for a project proposed in a

[2] We note that the criterion related to providing access to critical facilities was adjusted in the most recent proposal to reflect our previous suggestion to limit it to facilities that are actually located in vulnerable areas (so that a new road linking to a hospital in an area that is not at risk for flooding would not receive resiliency points), and we appreciate our suggestion being incorporated.

vulnerable area simply because the locality has developed a locality-wide sea level rise plan, regardless of whether the project itself is designed to withstand projected flooding. We recommend being clear about what would qualify as "planned improvements or adaptation strategies" to help limit this criterion to a more focused and appropriate set of situations in which the project design clearly incorporates climate resiliency.

Taking this a step further, we recommend that projects proposed in vulnerable areas should only be eligible for resiliency points if they include design features that make them resilient to flooding and fall into one (or both) of two categories: (1) the project is an improvement to an existing transportation facility that currently floods or is projected to flood in the reasonable future (e.g., raising an existing roadway that regularly floods); or (2) the project—either an improvement to an existing project or a new project—would significantly improve access to critical areas or facilities that are currently disrupted, or projected to be disrupted in the reasonable future, by flooding or related effects of climate change. We urge the HRTPO to consider adjusting the resiliency measure along these lines to help ensure that the types of projects that would be awarded points for providing a resiliency benefit would actually do so.

III. Diluting Project Viability Measure through Application of the Cost Effectiveness Criterion

SELC is concerned with the proposed move of the Cost Effectiveness criterion from the Project Utility measure to the Project Viability measure for all categories of projects, particularly in conjunction with the proposed change to the way Cost Effectiveness would be measured.

As proposed, Cost Effectiveness would be measured by comparing a project's estimated cost to the sum of its scores under the Project Utility measure and the Economic Vitality measure, and it would comprise twenty percent (20 of total 100 points) of a proposal's Project Viability score. We believe that basing twenty percent of the Project Viability score on the sum of the Project Utility and Economic Vitality scores would exaggerate the value of those two measures at the expense of the Project Viability measure and the important criteria it includes, such as a project's environmental impact.

Instead, we urge the HRTPO to either move the Cost Effectiveness criterion to the Economic Vitality measure, or to include it as a fourth, stand-alone measure. In both cases, we also recommend reallocating its 20-point allotment within the Project Viability measure to the environmental criteria in order to help boost these criteria's overall value to a more significant level.

IV. Ensuring Economic Distress Factor Takes Broad View of Potential Impacts

We support adding an "economic distress" factor to the PPT that would reward projects benefitting areas with lower-income neighborhoods or high unemployment. Past and current transportation policies and decision-making have too often generated more adverse impacts and fewer benefits for poor communities, burdening them with a disproportionate share of transportation pollution while often inadequately investing in mobility options. As a result, it is essential that we address these flaws in our policies and decision-making going forward. However, the proposed "economic distress" factor could have the opposite effect if it is measured in a way that rewards projects that would further disrupt or harm these communities by, for example, routing a new highway right next to—or even through—them.

It appears the economic distress factor will focus on the extent to which a project would improve congestion and travel time in and around lower-income and high unemployment areas. Using the example of a new highway project again, the traffic modeling for a new freeway proposed next to a low-income neighborhood may well indicate that residents of that neighborhood would have a faster route to a nearby area of high job concentration. But if the freeway would take land from the neighborhood or negatively impact its air quality, faster travel times or reduced congestion may be of small solace—particularly for those residents of the neighborhood who cannot afford a car or are unable to drive. We therefore urge the HRTPO to make sure the "economic distress" factor is measured and applied in a way that takes the potential for detrimental impacts to low-income areas into account.

Thank you again for engaging us in the process of updating the PPT and for your consideration of our comments and recommendations. Please do not hesitate to contact me if you would like to discuss any of this further.

Sincerely,

Morgan Butler
Senior Attorney

Agenda Item #7

2045 Long-Range Transportation Plan Project Prioritization Recommended Enhancements – Public Comments

Long-Range Transportation Plan Subcommittee
June 3, 2020

Dale M. Stith, AICP, GISP
Principal Transportation Planner

the heartbeat of HAMPTON ROADS TPO
Transportation Planning Organization

Project Prioritization Recommended Enhancements: Review

- **April 2017** – LRTP Subcommittee recommended HRTPO staff update Project Prioritization Tool
- **2018-2019**: Coordination with regional stakeholders
- **January 2020** – Prioritization Task Force approval
- **February 2020** – LRTP Subcommittee and TTAC approval
- **Public Review: February 6 – March 6, 2020**
  - Created new webpage on HRTPO website to aid in public review
  - Posted Summary of Recommended Enhancements and Additional Resource Slides

Project Prioritization Enhancements: Public Comments

- Public comment received from Southern Environmental Law Center (SELC)
- In preparation for this LRTP Subcommittee meeting, HRTPO staff requested members of the Prioritization Task Force (PTF) to review these public comments and initial staff responses and provide feedback via email

HRTPO Staff Note

- It is important to keep in mind that the application of the Project Prioritization Tool provides **flexibility** for the fine-tuning or adjustment of measures and points **during the project evaluation phase** in instances where consistent data cannot be obtained or when all responses are the same (e.g. all "yes" responses), providing no distinction between projects, etc.
- Due to this flexibility, some of the suggestions from SELC (or others that come up during project evaluation) can be considered and incorporated if the LRTP Subcommittee deems them appropriate as we evaluate the candidate projects.

SUMMARY OF SELC COMMENTS

SELC General Comments

- SELC "strongly supports using objective criteria to evaluate and prioritize transportation proposals"
- Commends "the HRTPO for being pioneers in Virginia in this regard"
- Applauds the HRTPO for taking the initiative to review and update the Tool to consider improvements in available data and examine potential shifts in regional priorities in response to growing challenges

SELC Specific Comments

- Enhancing Consideration of a Project's Environmental Impacts
  - Factoring in Impacts to Natural Resources
  - Valuing Impacts to Natural and Cultural Resource Acreage Adequately
  - Assessing Natural and Cultural Resource Acreage Impacts for Active Transportation Projects
  - Rewarding Projects that Improve Freight Rail Networks or Intermodal Facilities
- Including Resiliency in the Tool
- Diluting Project Viability Measure through Application of the Cost Effectiveness Criterion
- Ensuring Economic Distress Factor Takes Broad View of Potential Impacts

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SUMMARY OF SELC COMMENTS

- Factoring in Impacts to Natural Resources
  - SELC strongly supports "adding consideration of projects' environmental impacts" and using "natural and cultural resource acreage as a primary element"
  - SELC supports the resources to be used to assess this criterion, stating specifically that "wetlands and other types of conservation lands and wildlife habitats are of particular importance in Hampton Roads because of the vital protections they provide to communities by slowing and storing floodwaters and by buffering against storm surges and rising seas" adding that "it is imperative that the [Tool] take into account the extent to which a transportation proposal would negatively impact these natural resiliency resources."
- HRTPO staff response: no action required
- PTF Feedback: Environmental measure in previous rounds of SMART SCALE was tied to acres of disturbance. Smaller projects would score higher not because of benefit but because they were small. Modifications have been made for Round 3 of SMART SCALE.

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SUMMARY OF SELC COMMENTS

- Valuing Impacts to Natural and Cultural Resource Acreage Adequately
  - SELC urges the HRTPO to increase the value of the "Acres of Natural and Cultural Resources" criterion to better reflect its importance
    - Suggests reallocating value from the "Environmental MOEs/Basic Environmental Review" to "Acres of Natural and Cultural Resources"
    - The "Basic Environmental Review" criterion as presented on the *Additional Resource Slides* (slide 33) "misses the mark as an assessment of environmental impacts."
    - Note: these measures (slide 33 of the *Additional Resource Slides)* are meant as placeholder measures, which was noted at Prioritization Task Force and LRTP Subcommittee meetings. Initial suggestion for this criteria was to use SMART SCALE measures (fairly design-specific and not necessarily suited to many LRTP projects in the early planning phase)
- HRTPO staff recommendation: as previously discussed with the PTF and LRTP Subcommittee, wait until staff has real data to better evaluate how to best apply these 3 points
  - If data collected for these MOEs are deemed inconsistent, then re-allocating points to *"Acres of Natural and Cultural Resources"* criterion can be done easily as they are in same category and section
- PTF Feedback: Pushing points into acreage values doesn't always help (e.g. large project with completed EA and vetted alternative could score worse than a medium-size project with no environmental work)

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DRAFT ENVIRONMENTAL MOES

- *Environmental MOEs* (3 points max)
  - Project includes special accommodations for hybrid or electric vehicles or space or infrastructure for electric vehicle parking/charging
  - Project includes energy efficient infrastructure or fleets, including: hybrid or electric buses, electronic/open road tolling, alternative energy infrastructure (e.g. roadside solar panels)
  - Project includes transit system improvements or reduces delay on a roadway with scheduled peak service or 1 transit vehicle per hour
  - Add new point opportunity: Project includes improvements to passenger rail/rail facilities, the freight rail network, or intermodal (truck to rail) facilities/ports/terminals – refer to Slide 10 of this slide deck

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SUMMARY OF SELC COMMENTS

- Assessing Natural and Cultural Resource Acreage Impacts for Active Transportation Projects
  - SELC expressed concern over awarding points for Active Transportation (AT) projects that provide/increase access to natural/cultural resources (as opposed to awarding points based on avoiding impacts for other project categories) as these AT projects could "impact the very areas to which they are providing access"
  - Note: the suggestion to award points for AT projects providing access came from an LRTP Subcommittee member and was supported by other members
- HRTPO staff recommendation: if the majority still agrees with this approach, then retain; otherwise, use same approach as other project categories
- PTF Feedback: In favor of keeping this as-is. Scoring system is in place to address concerns of impact to resources outweighing the ability to access them. Positive impact is improving access to the resource instead of improved access will make more money.

SUMMARY OF SELC COMMENTS

- Rewarding Projects that Improve Freight Rail Networks or Intermodal Facilities
  - There was a criterion being considered that would reward points to projects that improved the freight rail network or intermodal facilities
  - SELC believes this is a suitable environmental criterion because transportation improvements that help move freight from highways to other modes can provide significant air quality benefits.
  - Note: originally proposed as an *Environmental* criterion to capture air quality benefits (2 points). Modified as discussed on slide 10.
- HRTPO staff recommendation:
  - Leave these modifications as approved
  - Add an additional point opportunity response to the *Environmental MOEs* (3 Point section) capturing the removed measure (see slide 7 of this slide deck)
- PTF Feedback: Agree with HRTPO staff recommendation

SUMMARY OF SELC COMMENTS

Original Proposed Enhancement

Environmental (potential impacts) Criteria	10 Points
Environmental MOEs Environmental Permitability	3
Acres of Natural and Cultural Resources	3
Project Reduces Traffic Delay at a Congested Intersection, Interchange, or Other Bottleneck with a high percentage of truck traffic	2
Project includes improvements to the freight rail network or intermodal (truck to rail) facilities/ports/terminals	2

Modified (and approved) Proposed Enhancement

Environmental (potential impacts) Criteria	10 Points
Environmental MOEs Environmental Permitability	3
Acres of Natural and Cultural Resources	3
Project Reduces Traffic Delay at a Congested Intersection, Interchange, or Other Bottleneck ~~with a high percentage of truck traffic~~	2
~~Project includes improvements to the freight rail network or intermodal (truck to rail) facilities/ports/terminals~~	~~2~~
Congested Intersection, Interchange, or Other Bottleneck (above) has a high percentage of truck traffic	2

- Modifications for *Project Reduces Traffic Delay at a Congested Intersection, Interchange, or Other Bottleneck* still captures air quality benefits but isn't limited to Intermodal/Freight projects
- Reassigning the 2 points from *the Project Includes Improvements to Freight Rail* to *Congested intersection/ interchange/bottleneck with a High Percentage of Truck Traffic* captures the added air quality benefits of reducing truck idling times at congested bottlenecks
  - Note: Add an additional point opportunity response to the *Environmental MOEs* (3 Point section) capturing the removed measure (see slide 12 of this slide deck)

SUMMARY OF SELC COMMENTS

- Including Resiliency in the Tool
  - SELC supports resiliency criterion that generally discourages "the building of new transportation projects in areas threatened by flooding and other effects of climate change" but recommends making scoring language more clear
- HRTPO staff recommendation: refine language to award points (3 points) for projects in vulnerable areas that have:
  - *developed planned improvements or adaptation strategies to address future sea level rise/storm surge/recurrent flooding and the project includes design features that make it resilient to flooding*
- For Access to Critical Facilities (2 points):
  - reword current measure to assess *what level of access is or will be provided by the candidate project to critical areas or facilities (e.g. hospitals, Fire-EMS, emergency shelters, dense employment areas, and single entry/exit points) that are projected to be disrupted by flooding or related effects of climate change*
- PTF Feedback: Agree with adding design features note

SUMMARY OF SELC COMMENTS

- Diluting Project Viability Measure through Application of the Cost Effectiveness Criterion
  - SELC is concerned Cost Effectiveness, now a criterion in the Project Viability component (moved from Project Utility), would exaggerate the value of the Project Utility and Economic Vitality scores at the expense of Project Viability measures which includes a project's "environmental impact"
  - HRTPO staff has noted in previous meetings that the revised calculation for *Cost Effectiveness* will be finalized when we evaluate candidate projects (and have real data scores)
- HRTPO staff recommendation: Keep measure in Project Viability and wait until we evaluate 2045 LRTP candidate projects to finalize calculation

13 | HAMPTON ROADS TPO | Hampton Roads 2045 Long-Range Transportation Plan

SUMMARY OF SELC COMMENTS

- Ensuring Economic Distress Factor Takes Broad View of Potential Impacts
  - SELC supports adding "economic distress" factors to the Tool
  - Concerned that the proposed economic distress factors, if not measured appropriately, could further disrupt or harm lower-income neighborhoods or areas of high unemployment
- HRTPO staff response: In addition to these economic distress measures, there are other Title VI/Environmental Justice measures in the Tool. Also, 2045 LRTP candidate projects are analyzed separately using the HRTPO Title VI/Environmental Justice Methodology.

14 | HAMPTON ROADS TPO | Hampton Roads 2045 Long-Range Transportation Plan

RECOMMENDED ACTION

- For discussion and modify Project Prioritization Tool Recommended Enhancements as necessary

15 | HAMPTON ROADS TPO | Hampton Roads 2045 Long-Range Transportation Plan

Dale Stith

Subject: FW: SELC comments on proposed changes to HRTPO's project prioritization tool

From: Dale Stith
Sent: Friday, July 03, 2020 1:02 PM
To: Morgan Butler (mbutler@selcva.org) <mbutler@selcva.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Hi Morgan,

We're all still doing well and getting better at being productive working remotely (as soon as we're experts at it, it'll be time to go back into the office).

Thank you for the words of support regarding your comments. We appreciate all the time you've dedicated to thoroughly reviewing our products and processes, helping us ensure we have appropriate and relevant tools in developing regional plans and recommendations.

I've included responses to your questions below, in red. Please let me know if I can be of further assistance.

Enjoy your holiday weekend!

Dale

Dale M. Stith, AICP, GISP
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From: Morgan Butler <mbutler@selcva.org>
Sent: Thursday, July 02, 2020 1:14 PM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Good afternoon, Dale,

I hope you're doing well and looking forward to the holiday weekend!

We finally had a chance to review the presentation you shared from the LRTP subcommittee and compare it to your summary of the meeting below. We wanted to be sure to let you know that we appreciate you taking the time to really understand our recommendations and then walk through each of them with the subcommittee. Among other resulting improvements, we think the refinements you proposed to the language for some of the resiliency considerations are helpful, and we also appreciate you proposing to add the new point opportunity for rail-related improvements (I'm using

shorthand there, of course) to the Environmental MOEs. In short, we thank you for carefully considering our comments and proposing some minor but beneficial tweaks based on them!

I do have two (hopefully quick) questions for you. First, are the Environmental MOEs listed on page 7 of your LRTP subcommittee presentation the ones you are proposing to start with (understanding that you may make changes once you see how they are working in practice)? For what it may be worth, we think the four MOEs listed on page 7 of your presentation are much better than the three MOEs that were included on page 33 of the *Additional Resource Slides* (which were: (a) Is there a fatal flaw for permitting?; (b) Is the intrusion into sensitive areas justified?; and (c) Does the project significantly reduce emissions?), and we wanted to make sure we're reading your intent there correctly.
Correct, the Environmental MOEs listed on slide 8 are the ones we're currently collecting data for. If, after collecting all the project data, we see any issues with the consistency/accuracy/applicability of the data received, we will re-address these measures with the LRTP Subcommittee.

Second, I noticed from your presentation that there may have been some minor pushback from one of the subcommittee members to using acreage to measure impacts to natural and cultural resources (seemingly based on a concern that doing so might hurt larger projects). But as I read your summary, you all are still planning to go with that approach in the updated tool. I just wanted to make sure I have that right since we believe that measuring impacts to natural resources such as wetlands is one of the most important improvements being made to the tool during this update. As you're likely well aware, there are ways to address concerns about potential bias against larger projects resulting from measuring acreage impacts, and I would be happy to discuss those with you if it might be helpful. Correct, we are not adjusting the approach of using acreage to measure potential impacts to natural and cultural resources. The point made by the subcommittee member wasn't so much directed at having us change the recommended approach but instead to make sure we were all aware of potential issues.

Thank you for any light you can shed on these two questions, and thank you for the responsiveness you have shown to public comment throughout this entire process.

Best,
Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Wednesday, June 10, 2020 10:56 AM
To: Morgan Butler
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

We plan on presenting the recommended enhancements to the Board at their July meeting. In order to keep the 2045 LRTP on schedule, we've already started collecting data for the candidate projects and anticipate having draft scores in the Fall. These draft scores will be available for public review. Once finalized, the scores will be used in our fiscal-constraint process (late 2020/early 2021).

Thanks,
Dale

From: Morgan Butler <mbutler@selcva.org>
Sent: Wednesday, June 10, 2020 10:36 AM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Thanks, Dale. No need to apologize; we appreciate you all working to provide the public an opportunity to listen in. I think we're all constantly working out kinks as we make adjustments to keep people safe under the current circumstances.

I'll read through the presentation and your summary and let you know if I have any questions on any of it. In the meantime, I was hoping you could give me a rough sense of next steps and when you expect the updated PPT to be formally adopted and in place.

Thanks!

Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Wednesday, June 10, 2020 10:14 AM
To: Morgan Butler
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Good Morning Morgan,

I apologize the call wasn't more clear for Carroll to hear all the dialogue. I will mention this to our technical staff so they can hopefully improve that for future meetings.

Our minutes are generally summary, so I'm not sure at this point how much detail will be included (I expect to review the draft minutes later this week). These minutes will be included for approval at our next LRTP Subcommittee Meeting which is scheduled for July 1, 2020. In the interim, I can hopefully speak to specific questions you may have.

For reference, the presentation for this item has been posted to our website: https://www.hrtpo.org/uploads/docs/060320%2007-Presentation%202045%20LRTP%20Prioritization%20Public%20Comments.pdf

In terms of actions, the LRTP Subcommittee moved to retain the proposed enhancements, but did refine some measures and acknowledged that many of the suggestions in your letter can be further addressed as we score candidate projects for the Plan (noted in the presentation).

Below is a summary of the discussion:

- will revisit how best to score/allocate the points for the Environmental MOEs as we obtain real project data (starting with SMART SCALE measures for this criterion) – refer to slide 7
- added a new point opportunity to the Environmental criterion (projects that improve passenger rail/rail facilities, the freight network, or intermodal facilities/ports/terminals) – refer to slides 8, 10, 11
- retained awarding points for Active Transportation projects that provide access to Natural and Cultural Resources – refer to slide 9
- refined resiliency language – refer to slide 12
- will refine Cost Effectiveness measure once all the data is collected – refer to slide 13
- Economic Distress Factors – refer to slide 14. We also have 2 draft reports currently out for review:
    - Draft Regional Needs Report: https://www.hrtpo.org/uploads/docs/HR_2045LRTP_RegionalNeeds.pdf
    - Draft Title VI/Environmental Justice Candidate Project Evaluation: https://www.hrtpo.org/uploads/docs/HR_2045LRTP_TitleVI-EJ-CandidateProjectEvaluation.pdf

Please let me know if you have further questions. As always, we appreciate your interest and engagement in helping improve our products/processes.

Thanks and take care,
Dale

Dale M. Stith, AICP, GISP

3

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From: Morgan Butler <mbutler@selcva.org>
Sent: Monday, June 08, 2020 3:05 PM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Hi Dale,

Thank you again for your efforts to make sure we were aware of, and able to listen to, the LRTP subcommittee meeting last week.

My colleague, Carroll, was able to call in, but she mentioned it was quite tough to hear at certain points, so she wasn't able to get a great sense of what, if any, new changes the subcommittee recommended. Are those recommended changes something you plan to list in the meeting minutes? If so, we'll look forward to receiving a copy of those, but if it might be a while before those are completed, is it possible for you to let us know any new changes the subcommittee recommended last week?

Also, what are the next steps for the PPT at this point? I believe at one point you mentioned you would need to take the full package of recommended changes to the HRTPO. Am I remembering that right? If so, what's your best guess at this point for when that's likely to occur? I know all you have put a lot of hard work into the changes and I assume you're wanting them to be adopted in time for use in developing the 2045 LRTP's list of projects?

Thank you for any additional information you can provide!

Best,
Morgan

Morgan Butler
Senior Attorney
Southern Environmental Law Center
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Charlottesville, VA 22902
(434) 977-4090

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Wednesday, June 03, 2020 10:46 AM
To: Morgan Butler
Subject: Re: SELC comments on proposed changes to HRTPO's project prioritization tool

Hi Morgan,

The TTAC meeting has been moving quickly. I think it will be wrapping up soon.

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Dale

From: Morgan Butler <mbutler@selcva.org>
Sent: Wednesday, June 3, 2020 9:38:50 AM
To: Dale Stith
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Thanks, Dale. Based on this, I think I'll recommend to Carroll that she call in around 11:15 or so. And we'll be sure to follow up after the meeting if we have any questions.

Best,
Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Wednesday, June 03, 2020 9:11 AM
To: Morgan Butler
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Good Morning Morgan,

If the TTAC finishes before 11:30 AM, we'll start the LRTP Subcommittee Meeting early. I imagine we'd take a few minutes between meetings to "switch" between TTAC and LRTP. This being our first time using WebEx in this fashion, I'm not completely sure how smooth/unsmooth the transition will be (and if we're going to ask participants to stay on the line or call back in), so bear with us.

Also, you'll hear me say this in the meeting today, but most of your suggestions are things that I think we can address as we evaluate the candidate projects (as our Tool provides us flexibility in how we calculate scores based on data available, issues we may run into, etc.).

Thanks and please follow up with me if you have additional questions after the meeting.

Dale

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From: Morgan Butler <mbutler@selcva.org>
Sent: Wednesday, June 03, 2020 7:17 AM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Good morning, Dale,

I wanted to let you know that I do plan to call in for the LRTP Subcommittee today meeting to hear the discussion on the PPT, but I have an 11:00 meeting that may run past the 11:30 start time. My colleague, Carroll Courtenay, plans to call in and listen until I'm able to join.

One quick question – you mentioned the LRTP Subcommittee meeting starts immediately after the TTAC meeting. I'm just curious how you handle the start time of the LRTP Subcommittee meeting if the TTAC meeting ends before 11:30. I'd like to let Carroll know if she should plan to call in a little before 11:30 just to be safe.

Thanks!

Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Friday, May 29, 2020 5:12 PM
To: Morgan Butler
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Hi Morgan,

Hope you're experiencing better weather in your area – it's been dreary all day here in Virginia Beach. Hopefully the sun will show itself this weekend.

I wanted to suggest adding you to the LRTP Subcommittee copy list. This will ensure that you receive all meeting notifications, agendas, and Minutes of each meeting. The public is invited to attend LRTP Subcommittee meetings and we would welcome your attendance. Please let me know if you should be the point of contact for this committee mailing and if not, who would be the appropriate person(s) to add to this list.

With regards to your request that we provide you with the comments provided by the LRTP prioritization task force to HRTPO staff, our protocol is that task force comments first feed directly into the LRTP Subcommittee itself. Those comments will be reviewed and discussed during the subcommittee meeting, along with the comments submitted by SELC, and as such, be read into Minutes of the meeting which are subsequently made available on the HRTPO website. I do recommend that if you would like to be present during the discussion of this item, that you listen in on next week's electronic LRTP Subcommittee meeting. In addition to listening in, members of the public are invited to submit a public comment before Noon the day before the meeting. Should you have any point of clarification or any subsequent questions after the meeting, we encourage you to reach back out to us and/or submit additional comments.

If you are able to listen in on next week's LRTP Subcommittee meeting, I believe the meeting discussion will highlight the flexibility and responsiveness of the Prioritization Tool. Because the Tool is dynamic and able to be quickly adjusted to respond to and consider current trends, data issues, etc., HRTPO staff is confident that some of the issues raised in SELC's comments will in fact be addressed by the Tool's functionality. However, I am excited to present your comments to the subcommittee and again, hope you can listen to the ensuing discussion.

Thanks and have a great weekend!

Dale

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From: Morgan Butler <mbutler@selcva.org>
Sent: Thursday, May 28, 2020 9:52 PM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Thanks for keeping us in the loop, Dale. I notice the description of agenda item 7 mentions that the City of Hampton provided feedback on our comments. Was that done in a format you could share with us? I'd like to be able to offer any clarifications or provide answers to any questions they may have raised if it could be helpful.

Best,
Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Thursday, May 28, 2020 6:49 PM
To: Morgan Butler
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Hi Morgan,

Hope you're doing well. I wanted to let you know that we will be having an electronic LRTP Subcommittee meeting on Wednesday, June 3, immediately following our electronic Transportation Technical Advisory Committee meeting. The agenda for the LRTP Subcommittee meeting was posted today (link below). The public comments SELC submitted regarding the prioritization enhancements is an agenda item.
https://www.hrtpo.org/events/details/796/lrtp-subcommittee-meeting/

Members of the public may listen to the meeting via telephone using toll-free Dial-In 1-866-345-9178. Members of the public may also submit comments to the LRTP Subcommittee. However, due to the COVID-19 crisis, public comments must be submitted in advance of the meeting by email to kmiller@hrtpo.org or phone (757) 366-4370. Each comment is limited to three minutes. All comments received by Noon on June 2, 2020 will be provided to the LRTP Subcommittee Members and included in the official record.

Please let me know if you have any questions or if I can be of further assistance.

Thanks,
Dale

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From: Morgan Butler <mbutler@selcva.org>
Sent: Wednesday, May 20, 2020 3:32 PM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Thanks for the helpful update, Dale.

Hang in there, and stay safe!

Best,
Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Wednesday, May 20, 2020 9:49 AM
To: Morgan Butler
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Good Morning Morgan,

Hope you and your family are doing well. Cabin fever definitely gets worse for us as the weather improves.

We're hoping to be able to hold a virtual LRTP meeting soon. We're holding our first virtual Board Meeting tomorrow and are hoping things run smooth enough that we feel confident about holding additional meetings using this same format. The comments your submitted on the PPT are included on the agenda under Correspondence of Interest (https://www.hrtpo.org/uploads/docs/052120%2009C%20Comment%20Letter%20on%20the%20Recommended%20Enhancements%20to%20the%20HRTPO%20Project%20Prioritization%20Tool.pdf)

In terms of addressing the comments, since we haven't been able to hold an LRTP meeting yet, I summarized and forwarded the comments via email to Prioritization Task Force members for their review and feedback. When we are able to hold a meeting (hoping to in early June), we will present SELC's comments along with any feedback we receive from Task Force members. I'll keep you posted once we schedule a meeting date/time.

Stay well and let me know if you have any additional questions.

Dale

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From: Morgan Butler <mbutler@selcva.org>
Sent: Wednesday, May 20, 2020 9:03 AM
To: Dale Stith <dstith@hrtpo.org>
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Good morning, Dale,

I wanted to touch base with you to see if there's any update on the HRTPO's consideration of the proposed changes to the project prioritization tool. I'm guessing you all are still in a holding pattern on the LRTP subcommittee meetings? Any update you could provide would be appreciated.

I hope you and your family are doing well.

Best,
Morgan

From: Morgan Butler
Sent: Wednesday, March 18, 2020 10:39 PM
To: 'Dale Stith'
Subject: RE: SELC comments on proposed changes to HRTPO's project prioritization tool

Hi Dale,

Thanks for getting back to me, and no need to apologize. We're doing okay so far, though the walls of our house seem to be starting to close in and I now have even more respect for teachers and for stay-at-home parents. I hope you and your family are all healthy and hanging in there during these tumultuous times.

We appreciate your interest in our comments and in sharing them with the PWG and/or LRTP Subcommittee for their reaction and feedback. If you have any questions about any of our input, I'm happy to speak with you and could even try to attend the PWG/LRTP Subcommittee meetings if that would be helpful (though I definitely understand that timing of those is anything but clear at the moment).

In other words, please feel free to follow up for more information, and I would appreciate it if you could keep me in the loop on the scheduling of those meetings in case it might be worthwhile for us to try to attend.

All the best to you,
Morgan

From: Dale Stith [mailto:dstith@hrtpo.org]
Sent: Wednesday, March 18, 2020 1:21 PM
To: Morgan Butler
Subject: Re: SELC comments on proposed changes to HRTPO's project prioritization tool

Good Afternoon Morgan,

Hope you, your family, and your staff are doing well and staying healthy during this coronavirus pandemic. I apologize it has taken me this long to confirm receipt of your comments on our Prioritization enhancements. It's been a little hectic to say the least as we adjust to working remotely.

In terms of your agency's submitted comments, we want to thank you and your staff for the time and attention you all have invested in reviewing the potential enhancements. Our plan is to bring these comments to our Prioritization Working Group and/or the LRTP Subcommittee, and will hold off on bringing the recommended enhancements to our HRTPO Board until after we receive feedback on your comments from the LRTP Subcommittee. We will also formally respond to your submitted comments, incorporating the feedback we receive from the LRTP Subcommittee.

Unfortunately at this point, I don't know when we will be able to hold the next LRTP Subcommittee. However, if you have any additional concerns or questions in the meantime, please don't hesitate to reach out to me.

Thank you again and stay safe.

Dale

From: Morgan Butler <mbutler@selcva.org>
Sent: Thursday, March 5, 2020 5:47:34 PM
To: Dale Stith
Subject: SELC comments on proposed changes to HRTPO's project prioritization tool

Dear Ms. Stith,

Attached please find comments from the Southern Environmental Law Center on the proposed changes to the HRTPO's Project Prioritization Tool. Thank you for your hard work on this effort and for your consideration of our comments. Please do not hesitate to contact me with any questions or if you would like to discuss any of our recommendations further.

Sincerely,
Morgan Butler

Morgan Butler
Senior Attorney
Southern Environmental Law Center
201 West Main Street, Suite 14
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(434) 977-4090

APPENDIX B: DRAFT CANDIDATE PROJECT EVALUATION AND PRIORITIZATION REPORT PUBLIC NOTICE

2045 LONG-RANGE TRANSPORTATION PLAN: DRAFT CANDIDATE PROJECT EVALUATION AND PRIORITIZATION REPORT

A core function of the HRTPO, the metropolitan planning organization (MPO) for the Hampton Roads area, is to develop and maintain a Long-Range Transportation Plan (LRTP). The LRTP is a blueprint for planned transportation improvements over a 20-year planning horizon based on the vision and goals of the region. Since 2016, HRTPO staff has been coordinating with regional stakeholders to update the LRTP to the horizon year of 2045.

HRTPO staff has developed the **Hampton Roads 2045 Long Range Transportation Plan: Candidate Project Evaluation and Prioritization** report, the fifth in the series of reports documenting the development of the 2045 LRTP. This draft report summarizes the evaluation and prioritization of candidate projects being considered for inclusion in the LRTP, utilizing the regional scenario planning framework and updated HRTPO Project Prioritization Tool. Results from this analysis will serve as a guiding tool in developing regional transportation priorities.

To review the draft report, click on the link below:

https://www.hrtpo.org/uploads/docs/HR_2045LRTP_ProjectPrioritization.pdf

For more information on the 2045 LRTP and Project Prioritization, click on the links below:

2045 LRTP: ***https://www.hrtpo.org/page/2045-long_range-transportation-plan/***

Project Prioritization: ***https://www.hrtpo.org/page/project-prioritization/***

All interested parties are encouraged to review the draft report and send comments to Dale Stith, Principal Transportation Planner, at dstith@hrtpo.org or by mail to 723 Woodlake Drive, Chesapeake, Virginia 23320 by **December 16, 2020**.

APPENDIX B: SELC COMMENTS

Southern Environmental Law Center

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434-977-4090
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SouthernEnvironment.org

December 16, 2020

Dale Stith
Principal Transportation Planner
Hampton Roads Transportation Planning Organization
dstith@hrtpo.org

BY EMAIL

Dear Ms. Stith,

The Southern Environmental Law Center ("SELC") would like to provide the following comments on the draft Candidate Project Evaluation and Prioritization report developed by the Hampton Roads Transportation Planning Organization ("HRTPO") in connection with the ongoing 2045 update to the Long-Range Transportation Plan. SELC is a non-partisan, non-profit organization that works throughout Virginia to promote transportation and land use decisions that protect our environment, strengthen our communities, and improve our quality of life. This includes a focus on encouraging cleaner transportation options, ensuring the resiliency of our communities and transportation system, and maintaining and maximizing taxpayers' investments in existing infrastructure.

As you know, we weighed in throughout the process of updating the HRTPO's project prioritization tool, and we are glad to see the new (and in our view, improved) version of the tool being used to score candidate projects. Although it is challenging to provide detailed, substantive comments on individual project scores without access to all the underlying data that factor into those scores, we appreciate this opportunity to provide general thoughts on a number of proposed projects and components of their scoring.

Advancing Transit and Rail In the Region

We continue to support the HRTPO's consideration of projects focused on expanding residents' travel options as well as advancing cleaner transportation modes, including projects to expand the region's public transit and passenger rail networks. For example, among its other benefits, we believe the Peninsula High Capacity Transit project (#2045-510) would provide significant value by expanding Bus Rapid Transit on the north side of the region in the cities of Hampton and Newport News. In addition, the Naval Station Norfolk Transit Extension (#2045-518) has strong potential to advance many goals of the 2045 LRTP by adding light rail service to the region's largest employer. And the higher-speed and intercity passenger rail project between Hampton Roads and Richmond/Northeast Corridor (#2045-506) is an important project as well, as it is part of the broader Southeast High Speed Rail project, and the Commonwealth's Transforming Rail in Virginia initiative includes expanding Amtrak service along this line. All three of these projects would significantly advance cleaner and more efficient modes of travel in

the Hampton Roads region; we are glad to see they scored well and urge you to closely consider them for inclusion in the fiscally-constrained portion of the LRTP.

Ensuring Projects Promote Climate Resilience

As we noted in the February 13, 2020 comment letter we submitted on the list of candidate projects, the Hampton Roads region's particular vulnerability to sea-level rise and other effects of climate change makes sound transportation planning especially important. Projects must be selected, sited, and designed to ensure they will: (1) prevent further loss of wetlands and other natural resilience resources that help absorb floodwater and buffer communities from storms; (2) withstand the new conditions that a changing climate is bringing about; and (3) reduce the transportation sector's outsized contribution to the greenhouse gas emissions that contribute to climate change.

Both the HRTPO and the localities that comprise it have taken some noteworthy steps toward climate-resilient transportation planning in recent years, including the recent changes to the HRTPO's project prioritization tool. However, we continue to have strong concerns that a number of the projects under consideration for inclusion in the 2045 LRTP would undermine that progress—particularly as it relates to protecting natural resilience resources. The proposed projects of concern include the following:

Greenbelt Phases I and II. Both phases of the Greenbelt proposal included as candidate projects (#2045-114 and #2045-114A) appear to be segments of the highly destructive and costly Southeastern Parkway and Greenbelt project ("SEPG project"). As noted in our February 13 comment letter, the Federal Highway Administration ("FHWA") decided to terminate the National Environmental Policy Act ("NEPA") review for the SEPG project in 2010. In the notice of termination published in the Federal Register, FHWA explained its decision was the result of "significant resource agency opposition" to the project based on the extent of the damage it would inflict on the environment and on wetlands in particular, as well as FHWA's related doubt that the project could receive a permit under Section 404 of the Clean Water Act.[1]

As an initial matter, it is important to note that the environmental harms and permitting challenges of the larger SEPG proposal cannot be sidestepped or negated simply by breaking it into segments.[2] Under both NEPA and Section 404 of the Clean Water Act, connected or

[1] "Termination of Environmental Review Process Cities of Chesapeake and Virginia Beach, VA," 75 Fed. Reg. 70351 (Nov. 17, 2010).
[2] *See City of Boston Delegation v. FERC*, 897 F.3d 241, 252 (D.C. Cir. 2018) ("An agency impermissibly segments NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration; this rule ensures that an agency considers the full environmental impact of connected, cumulative, or similar actions before they are undertaken, so that it can assess the true costs of an integrated project when it is best situated to evaluate different courses of action and mitigate anticipated effects." (internal quotations omitted)).

cumulative projects cannot be evaluated in a piecemeal manner in order to minimize the appearance of adverse environmental impacts.[3]

Further, both of these Greenbelt segments would likely face major permitting challenges in their own right. Phases I and II appear to overlap with large portions of Segments F and E, respectively, of the SEPG project, which would have been routed through areas of significant ecological value, including high-quality wetlands and significant wildlife habitat located in the North Landing River and West Neck Creek watersheds and in the vicinity of Gum Swamp. These are important natural resilience resources that the region should be preserving. Moreover, it would be extremely difficult to mitigate the damage that a highway would cause to the ecological values these resources provide, and the cost of attempting to do so would be significant.

Turning to the draft scores for these two proposals, we question the ten points both projects received under the "project readiness" factor merely for being included in the current LRTP. It appears that the proposed projects received these points because the current LRTP includes a planned study of the Southeastern Parkway and Greenbelt proposal (Project 2040-86) in its list of fiscally-constrained studies. We question, however, whether either of these projects (or any other project) should receive points for merely being included in a previous LRTP as a study. In addition, due to the ecologically valuable areas these proposals would traverse and the likely difficulty and cost of minimizing impacts to those areas, we were also surprised to see both projects ranked only as "intermediate" for potential damage to natural and cultural resources.[4]

In short, there were good reasons why federal agencies decided against advancing the unduly destructive SEPG proposal after studying it. The two pieces of that project that are now represented by the Greenbelt Phase 1 and 2 proposals appear to impact a significant amount of the environmentally sensitive land along the SEPG project's proposed route and would very

[3] *See Colony Fed. Sav. & Loan Ass'n v. Harris*, 482 F. Supp. 296, 302 (W.D. Pa. 1980) ("There is substantial case law establishing that large projects may not be artificially segmented into smaller ones for the purpose of avoiding NEPA or minimizing the appearance of adverse environmental impact."); *Nat'l Res. Def. Council, Inc. v. Hodel*, 865 F.2d 288, 297–98 (D.C.Cir.1988); *Preserve Endangered Areas of Cobb's History, Inc. v. U.S. Army Corps of Eng'rs*, 87 F.3d 1242, 1247 (11th Cir.1996) (An applicant "cannot evade [its] responsibilities under [NEPA] by artificially dividing a major federal action into smaller components, each without a 'significant' impact." (internal quotations omitted)). The 404(b)(1) guidelines, which the Corps use to evaluate Section 404 permits under the Clean Water Act, also "provide that the review may not be 'piecemeal' – a few acres here, a small tract there." *Buttrey v. United States*, 690 F.2d 1170, 1180 (5th Cir. 1982); *United States v. Rueth Dev. Co.*, 335 F.3d 598, 600 (7th Cir. 2003) (noting that the Corps denied a Section 404 permit application because the applicant had "present[ed] his development plans in a piecemeal fashion in an attempt to avoid a comprehensive review of their cumulative environmental impact").

[4] When we looked across the entire highway project category to see how the roughly 150 candidate highway projects were scored on this measure, we noted that more than 100 were ranked as "low" impact; roughly 40 were ranked as "intermediate" impact; and only four were ranked as "high" impact. This unlikely result leads us to ask what acreage thresholds were used to define those categories and to urge you to consider whether the thresholds should be adjusted to ensure a more realistic and more even dispersal of projects into the different categories, which would help give this component of project scoring greater utility in comparing and contrasting different projects.

likely encounter similar permitting challenges; yet their scores do not appear to sufficiently reflect these problematic issues. The environmental threats posed by these projects, the difficulty and cost of developing adequate mitigation for those threats, and the resulting permitting challenges strongly weigh against pursuing them. For all of these reasons, we recommend against including either of these projects in the fiscally-constrained portion of the LRTP.

US Route 460 Relocated. As noted in our February 13 letter, we continue to have serious concerns with the US Route 460 Relocated (#2045-117) proposal to build a new four-lane divided highway from the Suffolk Bypass to Zuni. The Virginia Department of Transportation's ("VDOT") previous plans for a new highway parallel to existing Route 460 along this stretch were extremely expensive relative to their limited benefits, and the HRTPO's candidate project scoring process indicates that this continues to be the case. This $945 million project is expected to carry just 27,000 vehicles per day (a small fraction of its proposed capacity), and ranks near the very bottom of all projects scored in terms of cost-effectiveness. Further, VDOT's previous plans faced major environmental permitting difficulties due to the severe impacts the project would have had on wetlands and streams along the corridor. We were therefore puzzled to see this proposal receive only a score of "low" for its potential damage to natural and cultural resources, providing further evidence that the scaling for this factor should be reconsidered. Nevertheless, the overall scoring clearly indicates that this proposal should not be included in the fiscally-constrained project list.

Nimmo Parkway Phase VII-B. We remain troubled by the proposal (# 2045-252) to extend the Nimmo Parkway across nearly a mile of the Back Bay National Wildlife Refuge in Virginia Beach. Wetlands and marsh make up 75 percent of the Refuge's territory, and routing a road along the proposed path would likely destroy and disrupt important carbon sinks and wildlife habitat, while also altering the area's hydrology in a way that could increase flooding in nearby communities. The project's environmental impacts were ranked as "intermediate," and its overall project score places it in roughly the bottom one-third of candidate highway projects that were scored. We urge you not to include Nimmo Parkway Phase VII-B in the fiscal-constraint list and to explore less damaging alternatives instead.

I-564/I-664 Connector and VA-164 Connector. We also have concerns with the project scoring second-highest overall in the "Bridges and Tunnels" category—the proposed I-564/I-664 Connector and VA-164 Connector (#2045-401). In evaluating proposed improvements for the recent Hampton Roads Crossing Study, VDOT found that the improvement segment representing the VA-164 Connector ("Alignment Segment 13") would destroy far more wetlands (61 acres) and impact much more endangered and threatened species habitat (101.7 acres) than any other segment assessed in the study.[5] Not surprisingly, this is one of the few projects that received a score of "high" in terms of its potential natural and cultural resource impacts in this LRTP

[5] *See Hampton Roads Crossing Study Supplemental Environmental Impact Statement, Natural Resources Technical Report* at A-6, A-9 (July 2016).

process. Despite its high overall scoring rank, it is also important to note that due to its exorbitant $5.1 billion estimated cost, this proposal was also found to be one of the least cost-effective of all projects scored. For these reasons, we recommend against including this project in the fiscally-constrained project list.

Bowers Hill Interchange. Another project we were surprised to see scoring "low" in the natural and cultural resource impacts category is the Bowers Hill Interchange (#2045-308) project. While we recognize the importance of this interchange to the Hampton Roads transportation network, it is located in an area with significant natural resources, including substantial wetlands, forests, and floodplains. This area also includes significant historic and cultural resources, as well as several communities—including a number of environmental justice communities—that could be adversely affected by proposed improvements at this interchange. The adverse effects of any proposals for this interchange thus need to be carefully considered, along with any alternatives and mitigation measures to minimize these impacts. Among other things, serious consideration should be given to options to upgrade transit service in this area, as well as cost-effective operational enhancements, transportation demand management strategies, and other targeted improvements that can be accommodated within existing right-of-way.

US 460/58/13 Connector. Finally, in our February 13 letter, we raised concerns about previous proposals for the US 460/58/13 Connector project (now designated as #2045-116) that involved widening this highway, which runs alongside the Great Dismal Swamp National Wildlife Refuge and some of Virginia's most important habitat areas. Although we are encouraged to see that the proposal scored in the LRTP process has been pared down to primarily consist of safety improvements, we continue to urge HRTPO to ensure that any proposals advanced along this corridor—and particularly any proposals for an interchange at the regional landfill—be sited and designed to first avoid and then minimize any adverse effects to sensitive resources in this area to the greatest possible extent.

Thank you for your consideration of these comments as you finalize project scores and prepare to turn to the fiscal-constraint portion of the LRTP update. Please do not hesitate to contact us if you have any questions or would like to discuss any of our comments further.

Sincerely,

Morgan Butler
Senior Attorney

Travis Pietila
Staff Attorney

5

APPENDIX B: HRTPO RESPONSE TO SELC COMMENTS

From: Dale Stith
To: "Morgan Butler"
Cc: Travis Pietila
Subject: RE: SELC comments on HRTPO"s draft project scores and evaluation report
Date: Tuesday, January 05, 2021 2:56:48 PM
Attachments: image001.png

Good Afternoon Morgan and Happy New Year!

Thank you for taking the time to review the 2045 LRTP draft project prioritization scores and providing comments. The feedback your agency provides helps us to see issues from other perspectives and ultimately helps us to produce better products.

Regarding your comments, we are pleased to hear support for advancing transit and rail in the region. Staff agrees that considering multimodal passenger projects improves travel options and can result in cleaner transportation modes. Furthermore, with the establishment of the new regional transit funds, an enhanced regional transit backbone will further promote transit choices in Hampton Roads.

Regarding the project comments related to ensuring projects promote climate resilience, we have forwarded these comments to the sponsoring localities/agencies so that they are aware of your concerns and have also asked for specific feedback. When we receive their feedback, we will forward those responses to you. We will also make note of your concerns during the fiscal-constraint phase of the 2045 LRTP.

Again, thank you for your time in reviewing the draft project prioritization scores and providing feedback. Please let me know if you have further questions or comments.

Thank you,

Dale

Dale M. Stith, AICP, GISP
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TPOHeartbeatLogoEMAIL

From: Morgan Butler
Sent: Wednesday, December 16, 2020 12:09 PM
To: Dale Stith
Cc: Travis Pietila
Subject: SELC comments on HRTPO's draft project scores and evaluation report

Dear Ms. Stith,
Attached please find comments from the Southern Environmental Law Center on the HRTPO's draft Candidate Project Evaluation and Prioritization report.
Thank you for the work the HRTPO is doing to update the region's long-range transportation plan and for your consideration of our comments. Please let us know if you have any questions or would like to discuss further.
Best regards,
Morgan

Morgan Butler
Senior Attorney
Southern Environmental Law Center
201 West Main Street, Suite 14
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(434) 977-4090

APPENDIX B: VIRGINIA BEACH COMMENTS

City of Virginia Beach

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VIRGINIA BEACH, VA 23456

January 12, 2021

Robert A. Crum, Jr.
Executive Director
Hampton Roads Transportation Planning Organization
The Regional Building
723 Woodlake Drive
Chesapeake, VA 23320

Subject: LRTP Comment Response for Greenbelt Phases 1 & 2 and Nimmo Parkway Phase VII-B

Dear Mr. Crum:

The City has reviewed the December 16, 2020 public comments regarding the Evaluation and Prioritization Report for the 2045 Long Range Transportation Plan (LRTP). We would like to offer the following response:

Greenbelt Phase 1 & 2:
The City is currently working on the next Comprehensive Plan Update (Comp Plan). One of the major changes with the new Comp Plan will be the reduction of the Southeastern Parkway and Greenbelt (SEPG) from five (5) phases to two (2) phases. The City does not intend to pursue piecemeal permitting of the original SEPG project to circumnavigate the environmental process. Rather, the City's is proposing to reduce the overall project and explore other transportation options that could include roadway, bikeway, trail, or a combination thereof. The roadway classification would also change from expressway to arterial. Impacts from COVID-19 have limited the City's ability to conduct public meetings. As a result, it may be late 2021 or even 2022 before public input on these changes can be assessed. The City already owns a significant amount of property along the revised corridor, however, any revisions would have to be re-evaluated for environmental impacts before moving forward.

Nimmo Parkway Phase VII-B:
The proposed roadway project, Nimmo Parkway Phase VII-B, is an important transportation project within the City of Virginia Beach's Capital Improvement Program (CIP). The purpose of the project is to provide a safer and more reliable route for traffic accessing the Sandbridge

Beach community. The proposed roadway will be more resilient to frequent flooding in the area and provide an improved hurricane evacuation route. The project has been included in the City's Master Transportation Plan as far back as 1971.

The City has reviewed the comments submitted by the Southern Environmental Law Center (SELC) in regards to the Nimmo Parkway Phase VII-B project. The City is currently developing a NEPA Environmental Assessment (EA) document that addresses the environmental impact of the project in accordance with the NEPA process. The project development process also includes stormwater design that will assess the area hydrology and conveyance. Additionally, the City would like to clarify that Nimmo Parkway Phase VII-B is proposed to be within existing City-owned right-of-way and will not require any property from Back Bay National Wildlife Refuge.

We appreciate the opportunity to respond to these comments. Please feel free to contact me if you have any questions or need additional information at 757-385-4131 or djarman@vbgov.com.

Sincerely,

David S. Jarman, P.E.
Transportation Division Manager

cc: Susan Wilson, Virginia Department of Transportation
Katie Shannon, P.E., CVB Public Works/Engineering
William C. Haggerty, P.E., Transportation Project Management Supervisor
Ryan A. Johnson, P.E., Project Manager
John Mihaly, Hampton Roads Transportation Planning Organization