

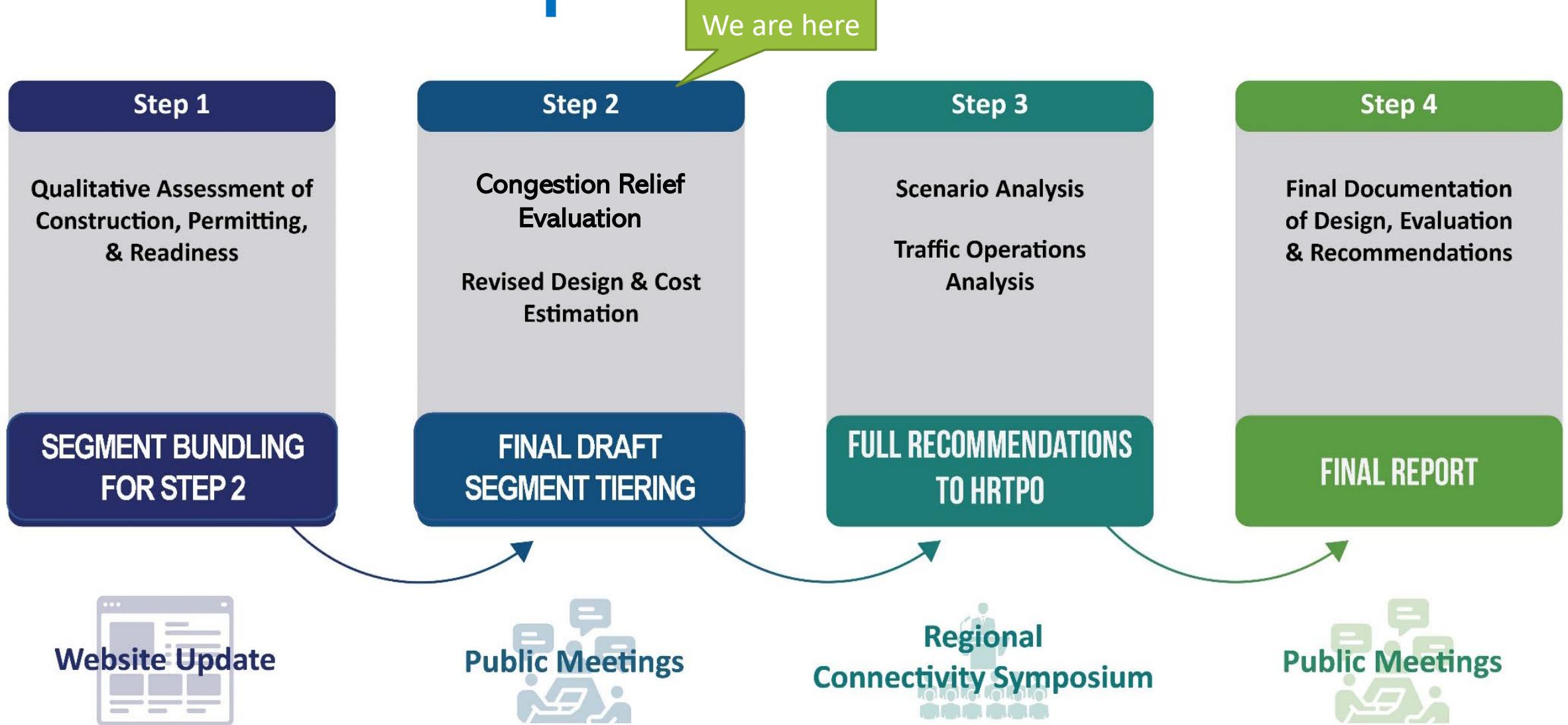


REGIONAL CONNECTORS STUDY

**STEERING (POLICY) COMMITTEE AND WORKING GROUP
NOVEMBER 17, 2022**

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INTERNATIONAL

Phase 3 Process Graphic



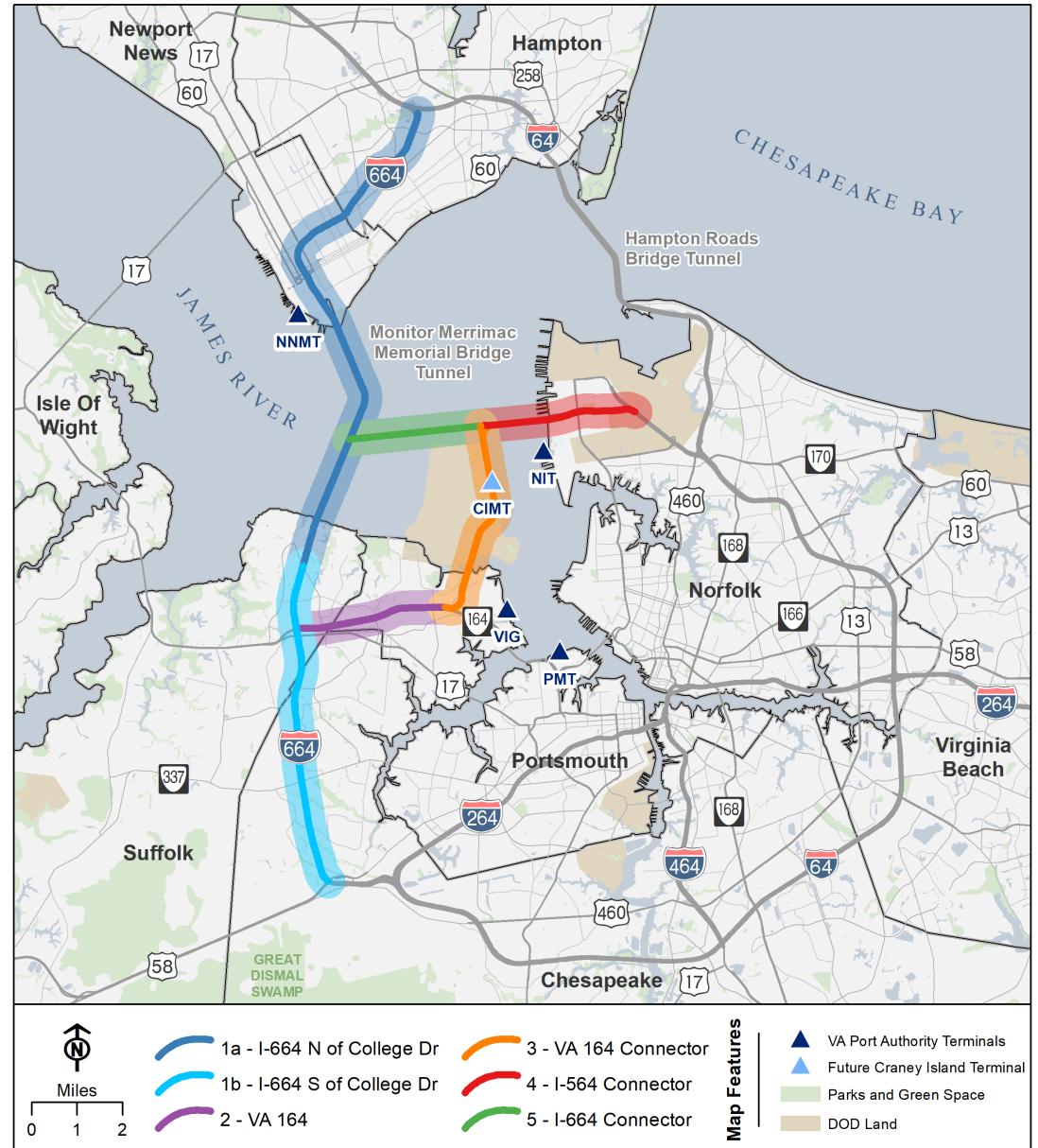
RCS Phase 3 – Draft Tiering

Agenda

- Step 2 Quantitative Analysis Recap
- Draft Segment Tiering Recommendations*
- Scenario Analysis Bundles*
- Public Engagement Update (handout)

* Action Item

Mandated Segments



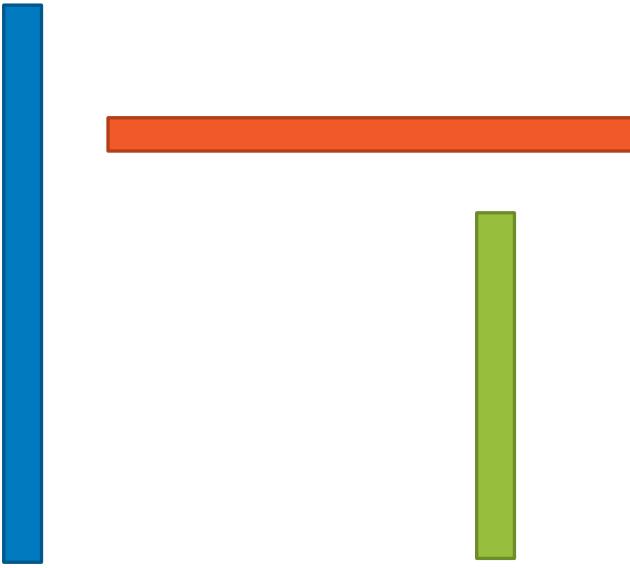


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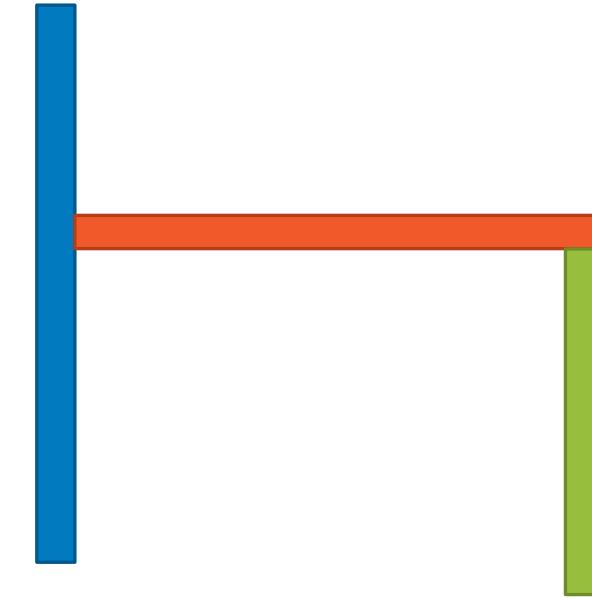
INTRODUCTORY SLIDES

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INTERNATIONAL

Segments vs Bundles



SEGMENTS



BUNDLE

Tiering

SEGMENT TIERING



Segments ready for advancement and recommended for consideration in the fiscally constrained portion of the 2050 HRTPO Long Range Transportation Plan.



Segments which require further refinement and maturation, and will be recommended for consideration in the 2050 Vision Plan, as developed by the HRTPO.



Segments that due to technical challenges and uncertainties, will be further developed at an appropriate time in the future.

REGIONAL CONNECTORS STUDY

QUANTITATIVE ANALYSIS RECAP

Quantitative Analysis

- Congestion Benefits – delay reduction
(introduced in August meeting)
- Economic Benefits – societal benefit, regional economic impact
(introduced in August meeting)
- Segment Cost Estimates

Cost Estimates of Mandated Segments

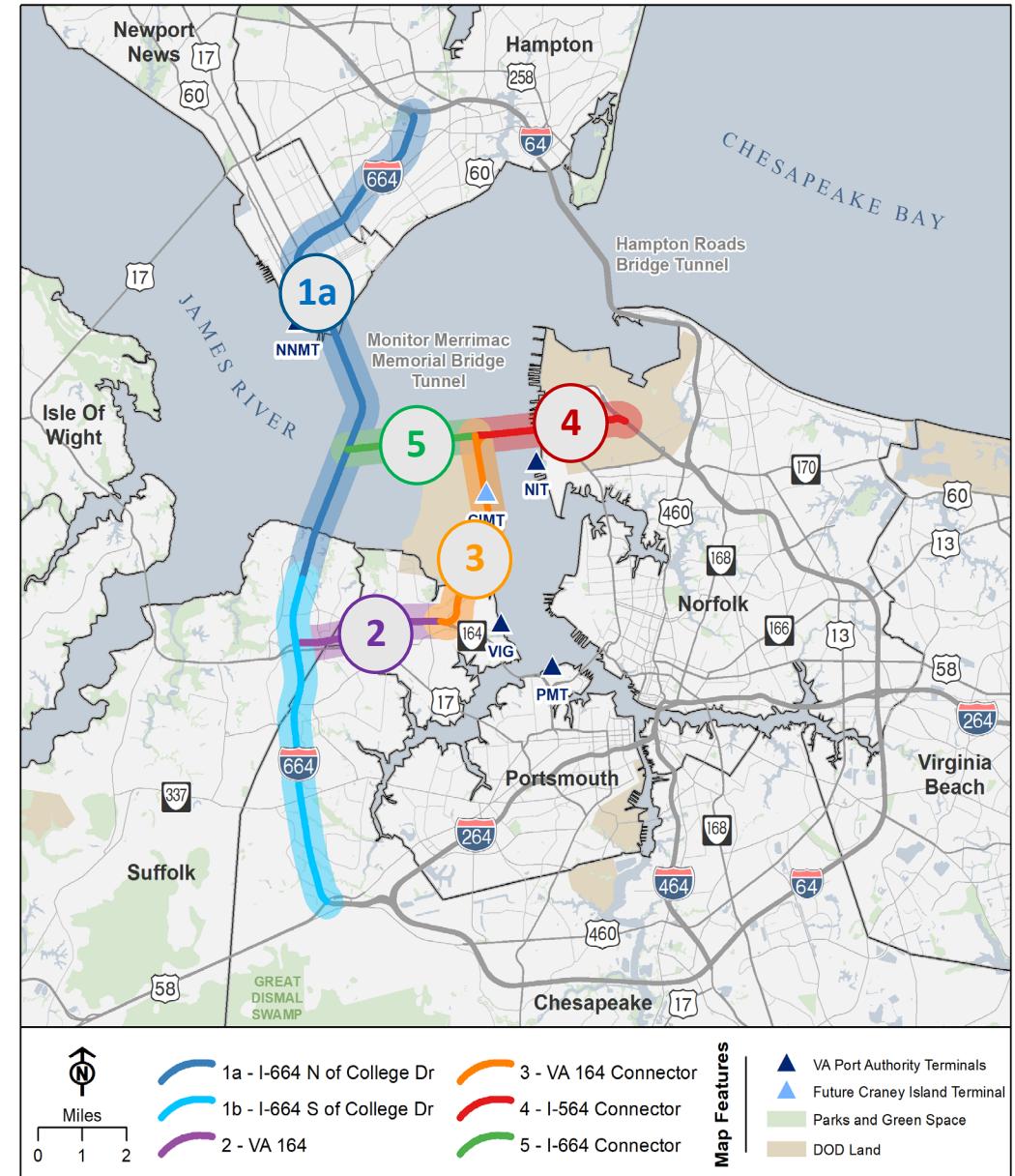
Segment	Costs (\$ M) 2022\$	Key factors related to cost
1a. I-664 Widening (North of College Drive)	\$3,918	New tunnel and islands, sheer length of new roadway over water, significant number of new/widened bridges
2. VA 164 Widening	\$174	Improvements to existing alignment, entirely over land which helps control cost; includes coordination with railroad, crash walls for railroad, and is partially widened to the outside
3. VA 164 Connector	\$800	Significant structures over Craney Island, Navy security requirements, landfill and Corp of Engineers coordination requirements. Includes interchange with I-564 Connector & VA 164
4. I-564 Connector	\$3,242	New tunnel and island, Navy security requirements
5. I-664 Connector	\$1,534	Entire segment on structure over water

- Planning level estimates using VDOT Cost Estimating System (PCES), supplemented with project-specific elements such as security needs and relying on recent examples of key project elements such as tunnels. These preliminary cost estimates are as of Sept 2022 and may change as RCS project development continues

Quantitative Evaluation

- Segment bundle **congestion benefits** and **economic benefits** data together with **costs** → *cost effectiveness*
- Findings:
 - Segment 1a has high cost and high benefits → cost-effective
 - Segment 2 also cost-effective due to low-cost relative to benefits
 - Segments 3, 4 and 5 have high cost and lower incremental benefits → lower cost-effectiveness

Mandated Segments



Tiering Recommendations - Approach

Qualitative Evaluation

+

Quantitative Evaluation



Summary of Segment Evaluations

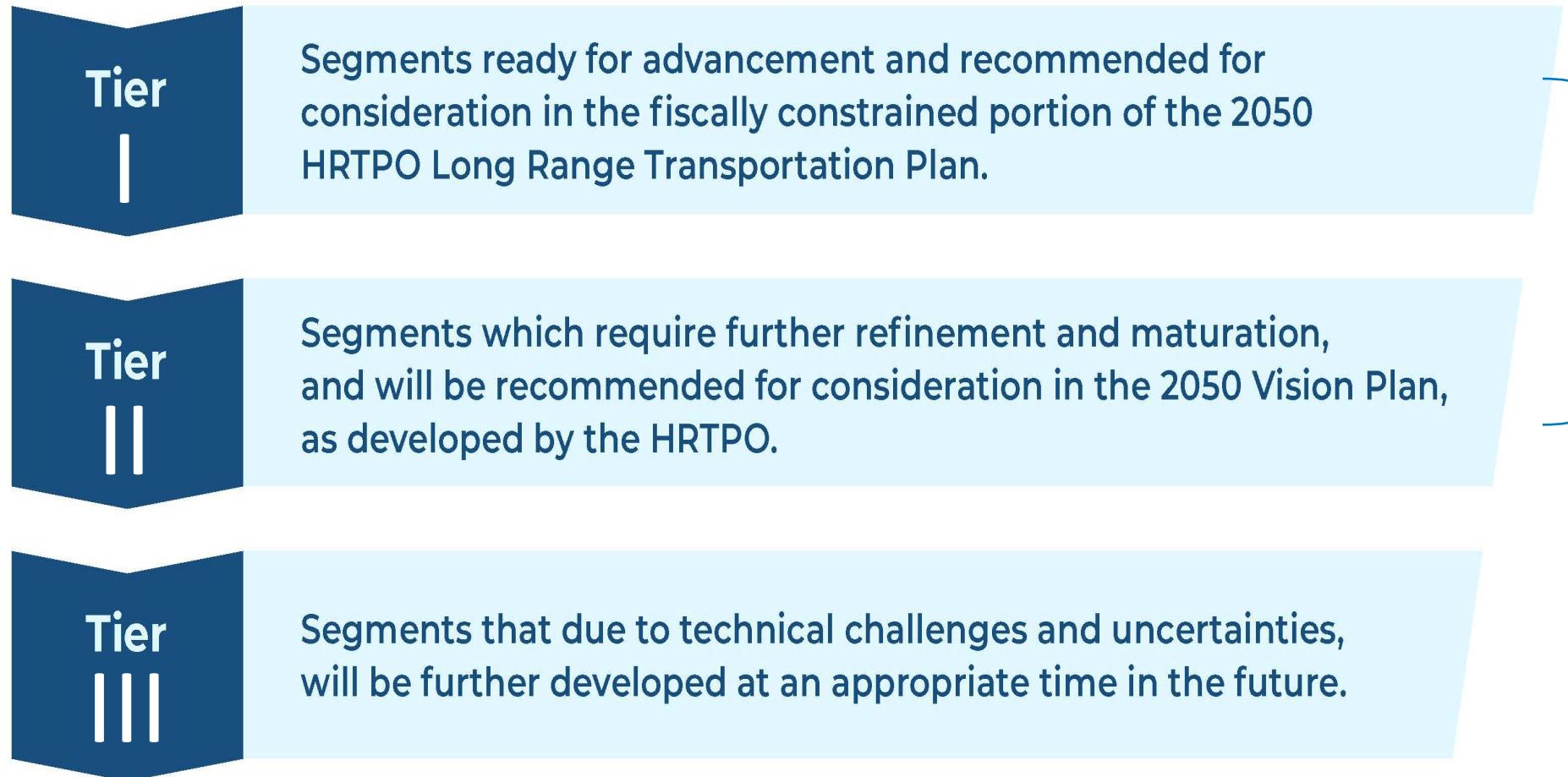
Segment	1a - I-664 Widening	2 – VA 164 Widening	3 – VA 164 Connector	4 - I-564 Connector	5 – I-664 Connector
Quantitative findings – benefits relative to cost	High	High	Low	Low	Low

Summary of Segment Evaluations

Segment	1a - I-664 Widening	2 – VA 164 Widening	3 – VA 164 Connector	4 - I-564 Connector	5 – I-664 Connector
Quantitative findings – benefits relative to cost	High	High	Low	Low	Low
Qualitative findings – Relative Segment Readiness	High	Medium	Low	Low	Low
Qualitative findings – Relative Segment Ease of Permitting	Medium	High	Low	Low	Low

Tiering Definitions

SEGMENT TIERING



HRTPO LRTP
Planning
Process

Basis for Tiering

- There are stronger qualitative benefits and cost-effectiveness for Segments 1a (I-664 north widening) and 2 (VA 164 widening)
 - The **high benefits** of Segment 1a overcome the segment's high cost
 - The relative benefits of Segment 2 are cost-effective because of the **low cost**
- The technical analysis does not provide a substantial distinction *between* Segments 1a and 2 that would differentiate them for tiering



Consultant Team Recommends Segment 1a (I-664 north of College Dr) and Segment 2 (VA 164) for **Tier I**

Basis for Tiering

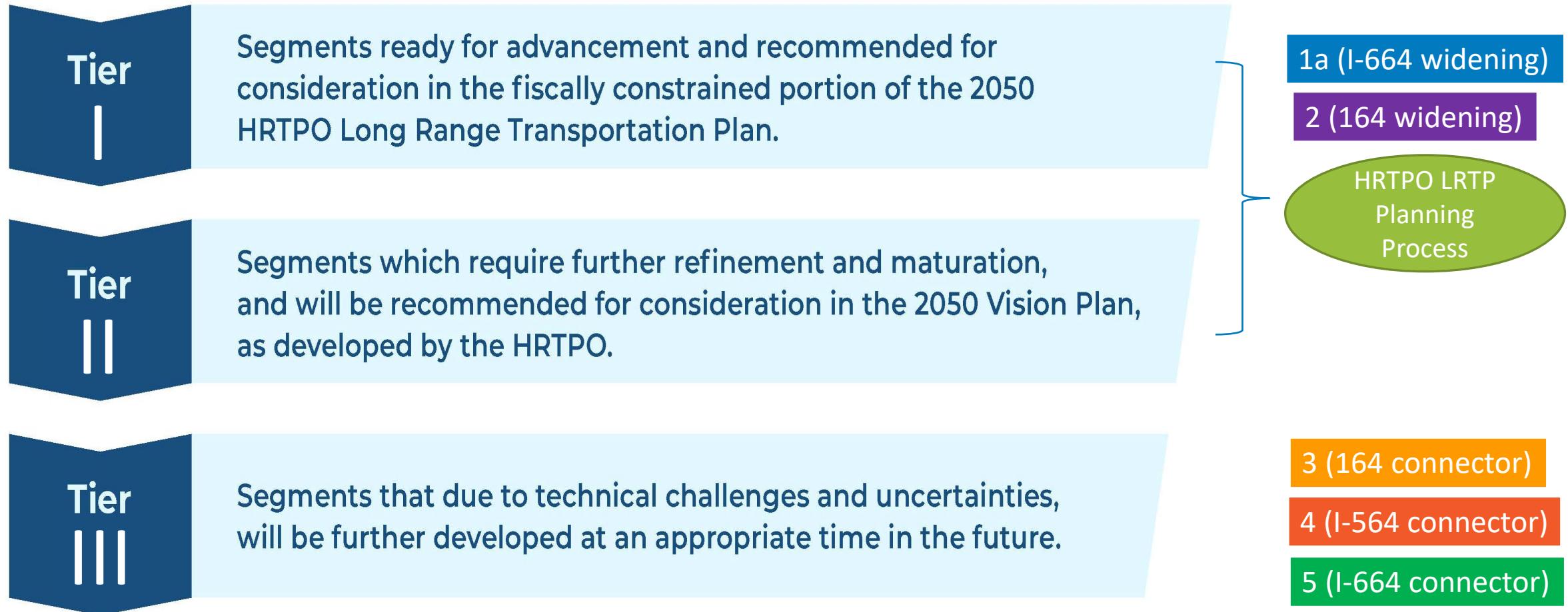
- Segments 3, 4 and 5 have similar qualitative evaluations
 - No “readiness” benefits, and technical & timing obstacles
- After Segment 1a benefits, the incremental benefits of Segments 3, 4, and 5 are *much lower* relative to costs.
- No substantial distinction between Segments 3, 4 and 5 evaluations that would differentiate them for tiering



Consultant Team Recommends Segment 3 (VA 164 Connector),
Segment 4 (I-564 Connector) and Segment 5 (I-664 Connector)
for **Tier III**

Draft Tiering

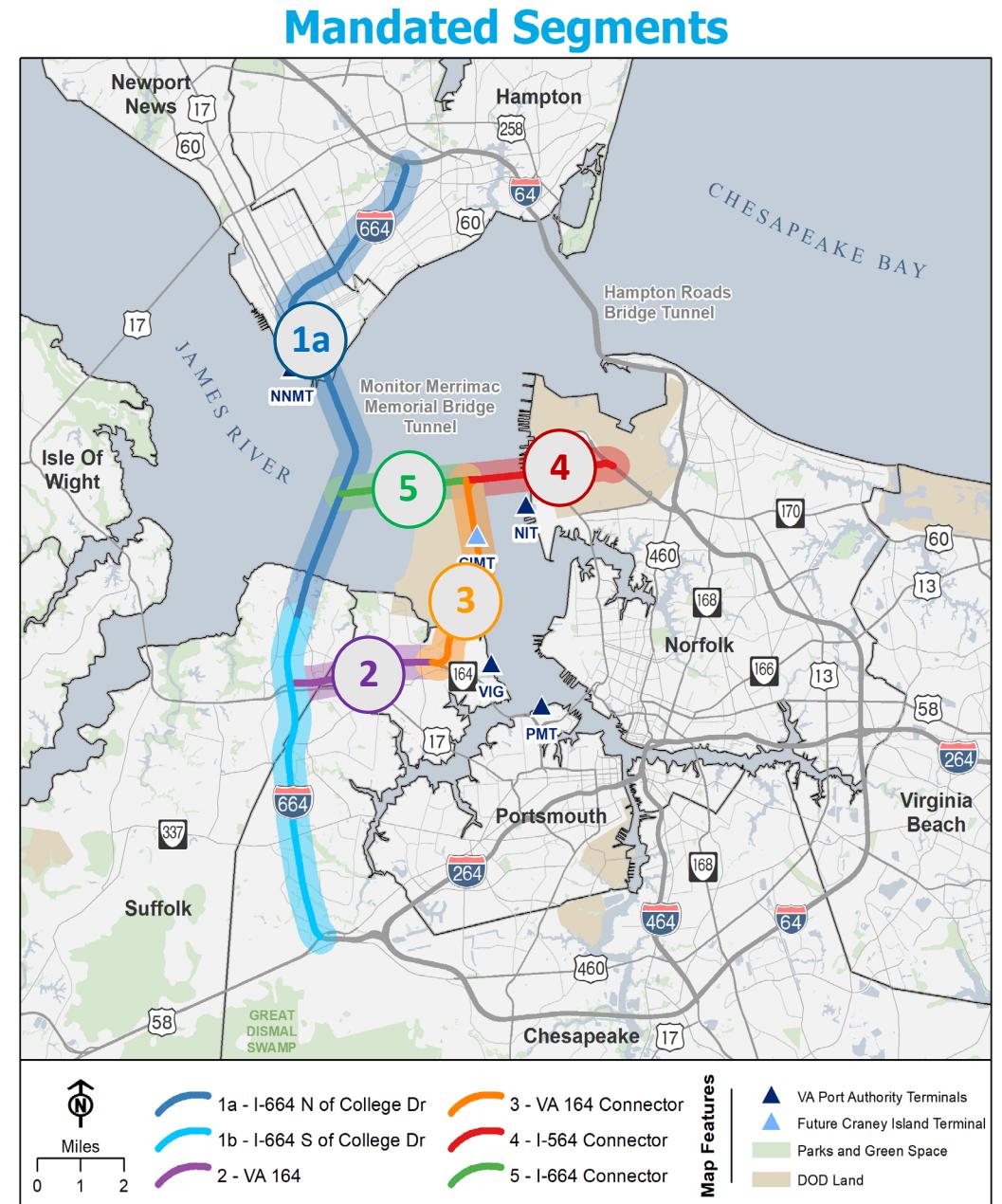
SEGMENT TIERING



Recommended Action Item #5

Approve draft tiering of mandated segments for public input:

- Tier I: Segments 1a & 2
- Tier III: Segments 3, 4 & 5





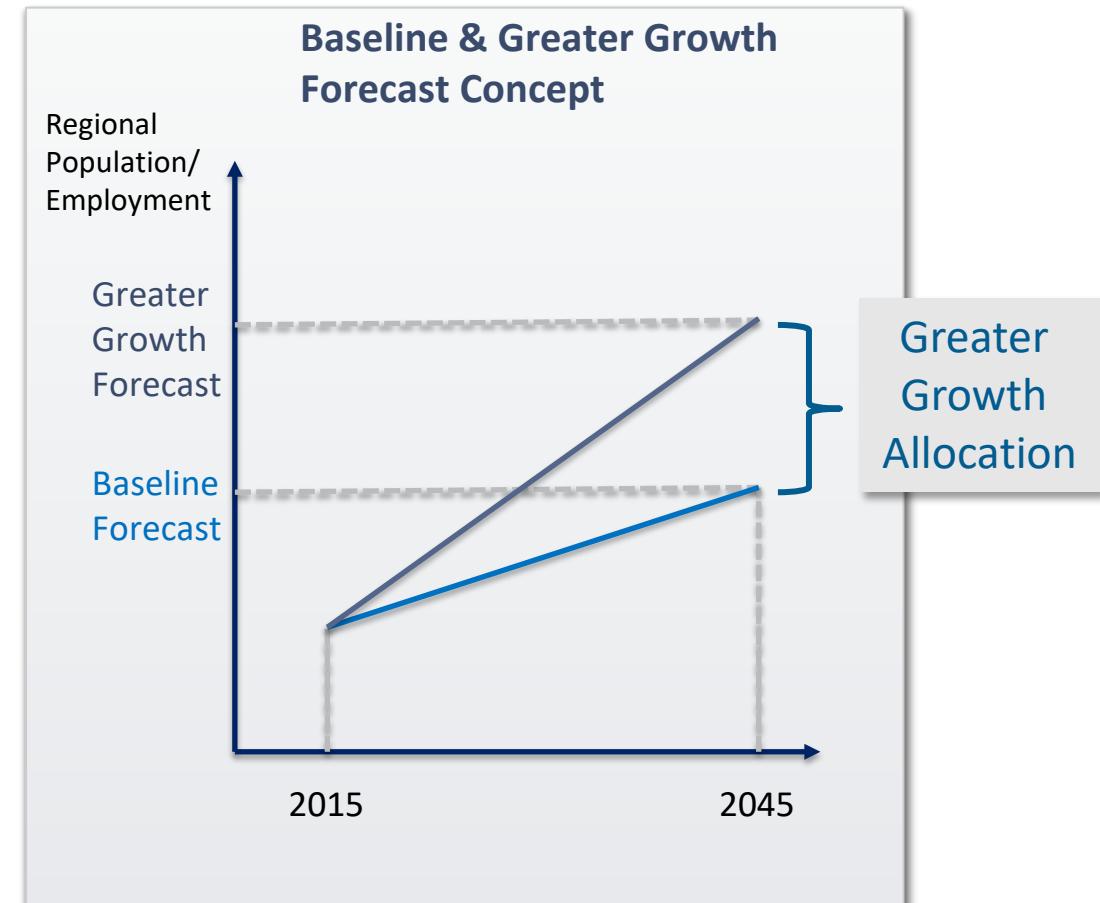
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SCENARIO ANALYSIS BUNDLES

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Scenario Analysis

- Compare 2045 Baseline and 3 Greater Growth Scenarios
 - Greater Growth Scenarios reflect 2x the employment growth from 2015-2045 and associated increase in population growth
 - “Stress test” of the transportation network and harbor crossings in particular
 - Scope of work allows testing of baseline and up to 3 bundles of segments in Tiers I and II



Greater Growth Scenarios

Greater Growth on the Water

What happens if jobs focus on the waterfront, housing choices are varied, and transportation technology adoption is moderate?

Greater Growth in Urban Centers

What happens if jobs and housing focus in urban areas, with greater multimodal availability and high adoption of connected vehicle technology?

Greater Suburban/ Greenfield Growth

What happens if jobs and housing are developed in dispersed activity centers, with a higher level of truck transportation and high adoption of autonomous vehicle technology?

Approved by Steering (Policy) Committee 7/09/2019

Consultant Team Recommendation – Scenario Bundles

Segment Bundle A



Segment Bundle B

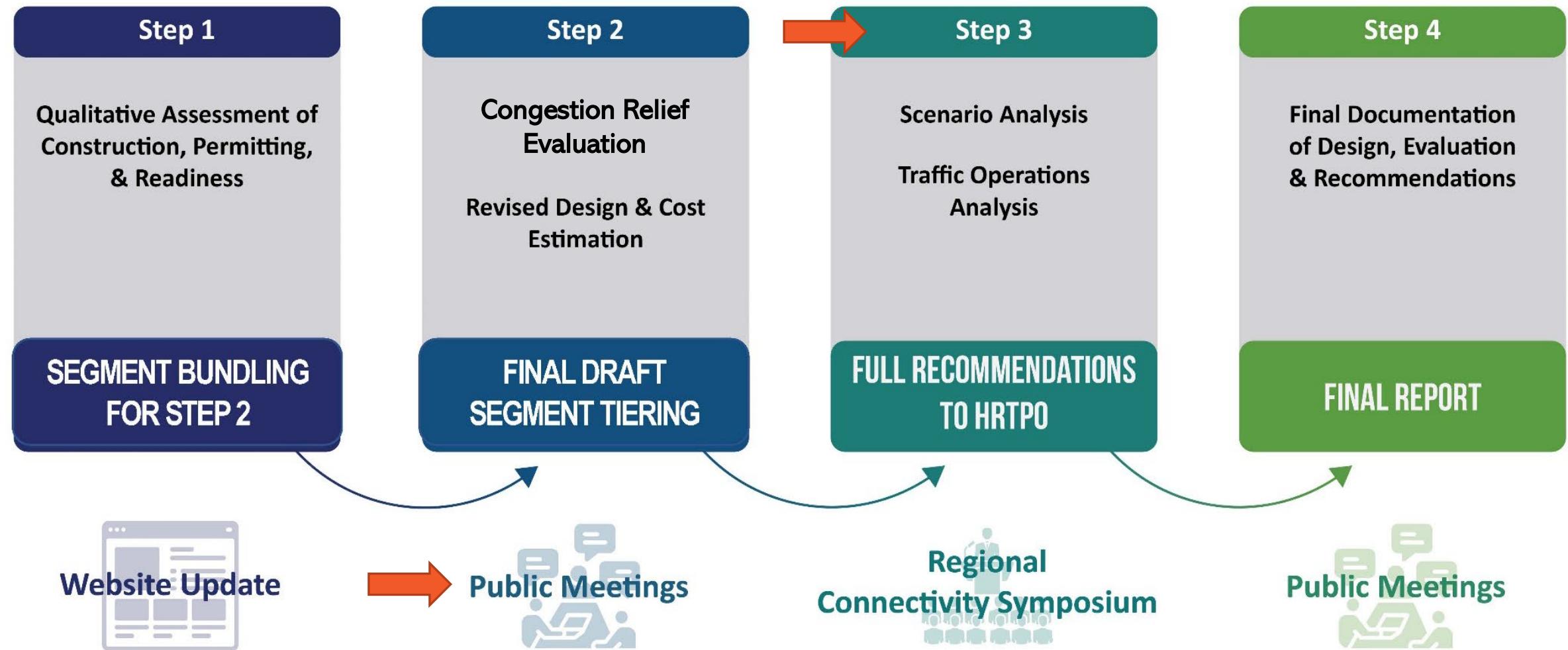


Recommended Action Item # 6

- Approve the recommended bundles of segments for scenario analysis



Next Steps →



REGIONAL CONNECTORS STUDY

PUBLIC ENGAGEMENT UPDATE

Upcoming Public Engagement

Purpose

- Provide an overall update on the study and findings to-date
- Present the draft tiering of segments
- Engage residents in discussion of future segment projects' benefits and burdens

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Activities

- In-Person Public Meetings
- On-Line Engagement
- Pop-Up Meetings
- Social Media engagement and advertising
- October Community Advisory Committee (CAC)

Public Meeting Schedule

Date	Venue	City
<i>Early February - TBD</i>	Churchland Branch Library	Portsmouth
<i>Early February - TBD</i>	VDOT Hampton Roads Office	Suffolk
<i>Early February - TBD</i>	Pearl Bailey Library	Newport News
<i>Early February - TBD</i>	Lambert's Point Community Center	Norfolk

- Meetings scheduled 5:30-7:30 PM
- Presentations given at 6:00 and 7:00 PM
- All locations are accessible by transit; VDOT location also accessible to VA 164 corridor residents

Anticipated Pop-Up Meetings

Provide information on the project and the winter public meetings:

- Virginia Beach Central Library (during after school programs)
- Hampton event TBD
- Chesapeake location or event TBD