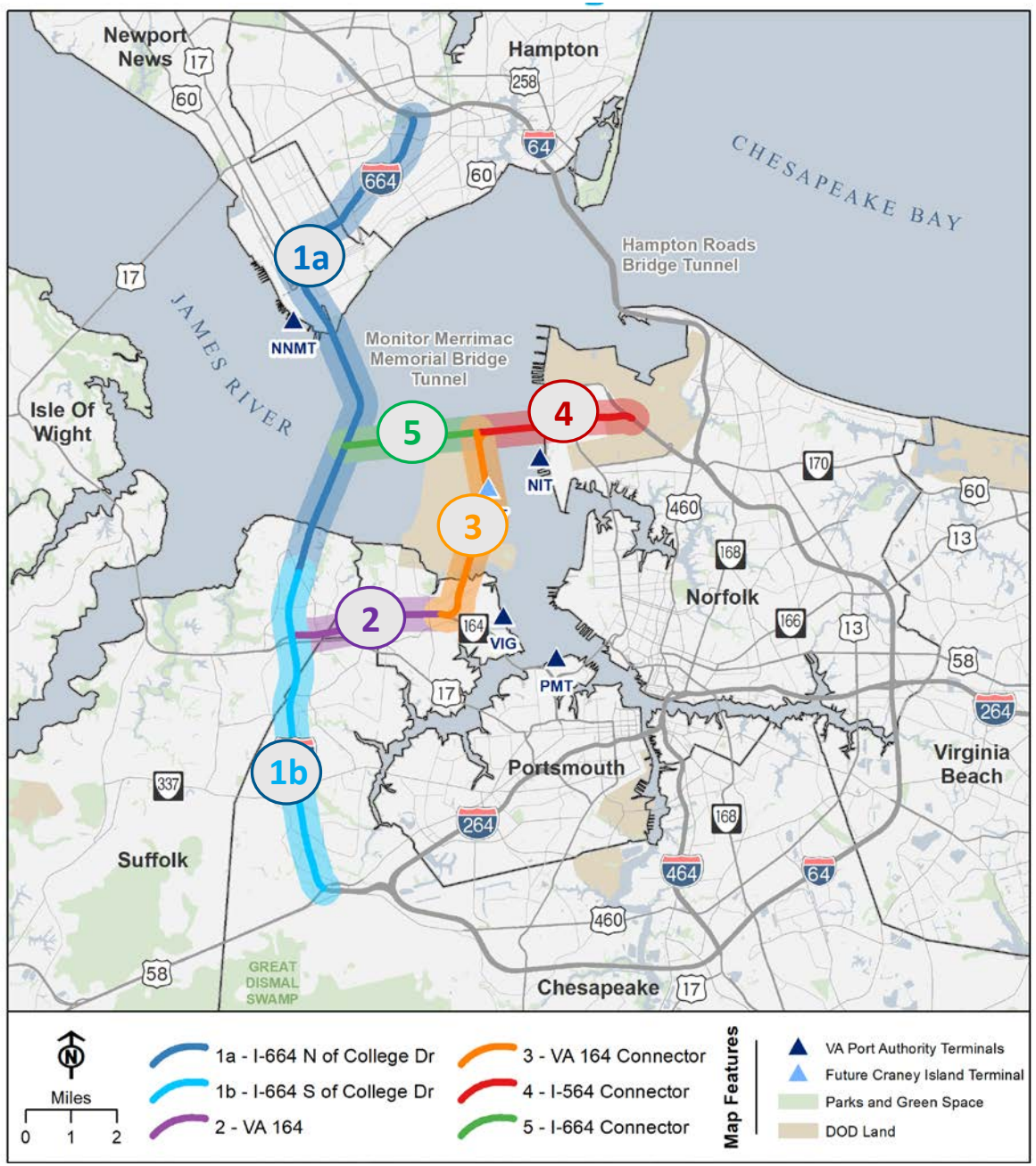
HAMPTON ROADS TPO

REGIONAL CONNECTORS STUDY

PUBLIC OPEN HOUSE MEETINGS
JULY 31-AUGUST 3, 2023

Michael Baker INTERNATIONAL

About the Study



HAMPTON ROADS TPO

Michael Baker INTERNATIONAL

Funded by:

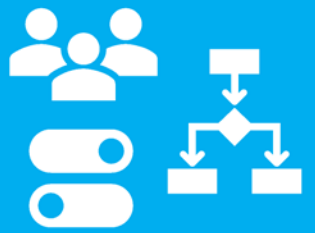
HRTAC
Hampton Roads Transportation Accountability Commission

Regional Connectors Study (RCS) – 2018 to today

PHASE 1
- Engaging the public
- Analyzing existing conditions
- Refining Travel Demand Model

PHASE 2
- Testing scenarios
- Updating segments
- Considering alternatives
- Engaging the public

PHASE 3
- Tiering recommendations
- Evaluating operations
- Refining segments
- Engaging the public



2018
2019
2020
2021
2022
2023

Tiering

- The RCS will propose roadway segments that are ready to move forward and appear the most cost effective as Tier I recommendations.
- Segments that require further refinement and have hurdles to advancing are Tier II recommendations.

Tier I — Segments recommended for HRTPO to evaluate for the 2050 Long Range Transportation Plan (LRTP).

Tier II — Segments recommended for HRTPO to include in the Regional Transportation Vision Plan.

HRTPO Long Range Transportation Planning Process

RCS End Products

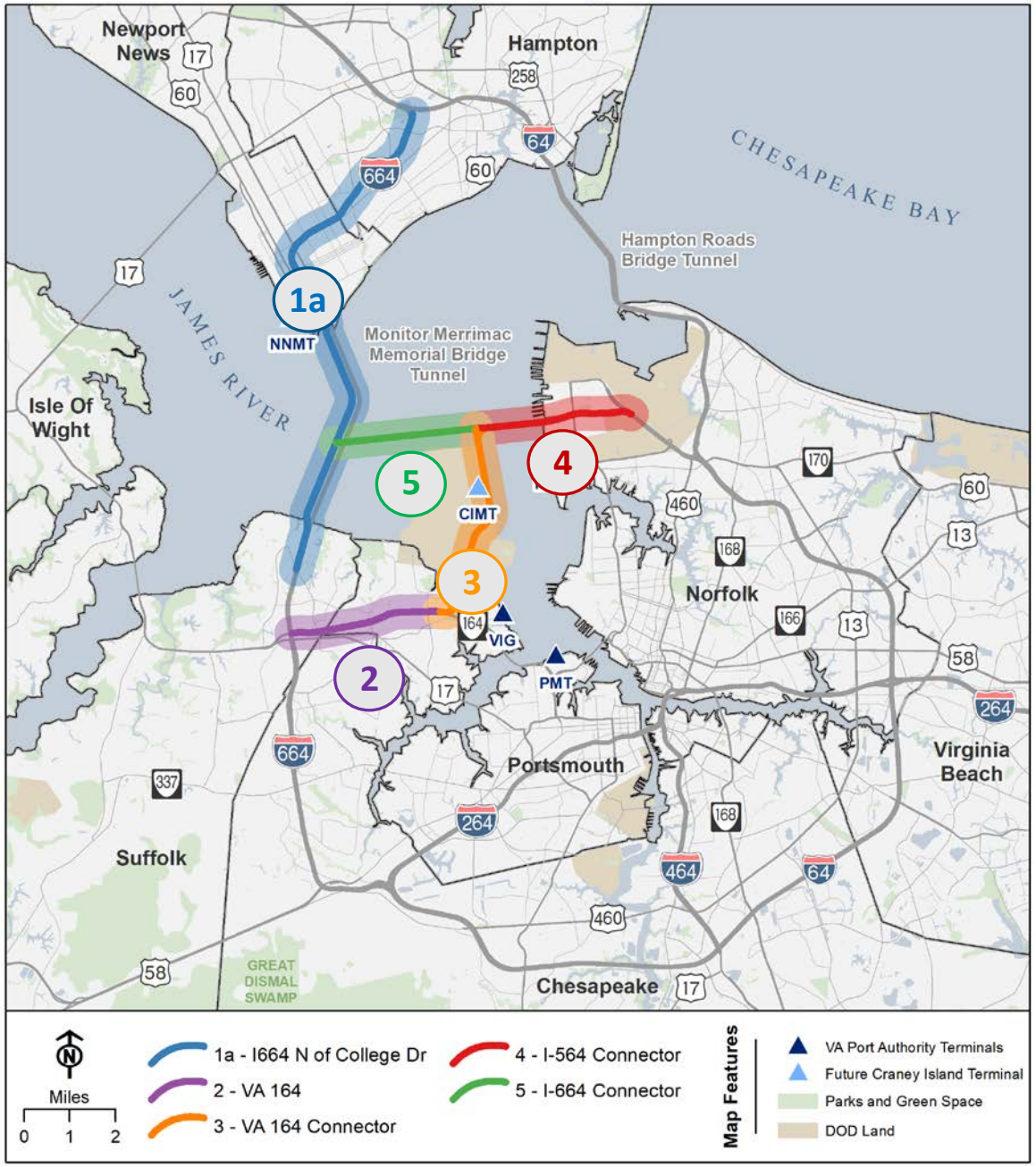
Tiering Recommendations

Hand-off to HRTPO:

- **Tier I** → Evaluate for 2050 fiscally constrained Long Range Transportation Plan
- **Tier II** → Include in 2050 Vision Plan

Study Documentation

- Process record (committee meetings, webinars, public engagement summaries)
- Technical documentation of each phase
- Refined segment concept drawings



Segment 1a (I-664 Widening north of College Drive)

Add four new southbound travel lanes through a new tunnel west of the existing tunnel and change the existing tunnel to four northbound lanes. Approximately 5 miles of roadway widened two-lanes in each direction for express lanes (high-occupancy/toll lanes).

Segment 2 (VA-164 Widening)

Widen VA-164 to six lanes, three lanes in each direction. Use existing right-of-way to the extent possible for widening VA-164.

Segment 3 (VA-164 Connector)

Construct a new four-lane highway, two lanes in each direction, from a new interchange at VA-164 west of Cedar Lane across Portsmouth Landfill and Craney Island. The new highway will connect to a new interchange with I-564 Connector and/or I-664 Connector over the water.

Segment 4 (I-564 Connector)

Construct a new four-lane highway, two lanes in each direction, from I-564 using a tunnel and bridge to a new mid-harbor island connection at the VA-164 Connector and/or I-664 Connector.

Segment 5 (I-664 Connector)

Construct a new four-lane highway, two lanes in each direction, from I-664 to a new mid-harbor island connection to I-564 Connector and/or VA-164 Connector.

Tiering Recommendations - Approach

Qualitative Evaluation

Readiness

Project Readiness considers the ability of the project to proceed independent of other segments, its status in plans and funding programs, and its integration with the region's managed lane network.

Permitting Issues

Permitting Issues consider the projected social and environmental impacts and the complexity of environmental permits and related factors that will add to the time, cost, and effort for project implementation.

+

Quantitative Evaluation

- Congestion Benefits
- Economic Benefits

- Segment Costs

Tiering Evaluation

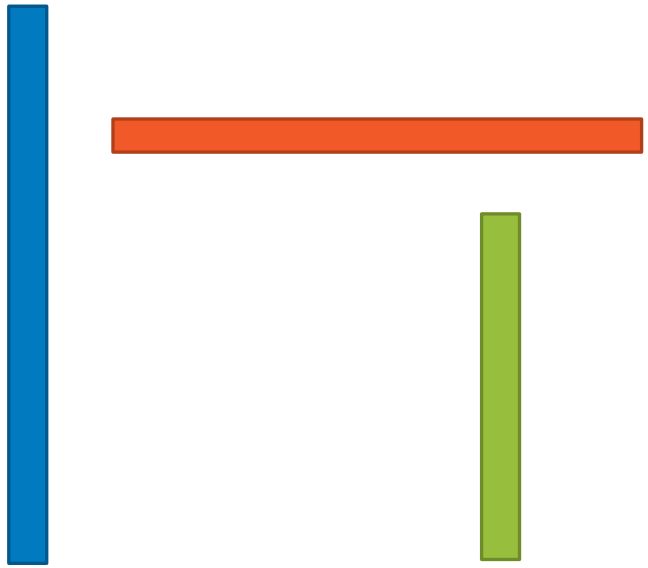
Segment	1a - I-664 Widening	2 – VA 164 Widening	3 – VA 164 Connector	4 - I-564 Connector	5 – I-664 Connector
Quantitative findings – benefits relative to cost	**High**	**High**	**Low**	**Low**	**Low**
Qualitative findings – Relative Segment Readiness	**High**	**Medium**	**Low**	**Low**	**Low**
Qualitative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

Tiering Recommendations and Stress Test

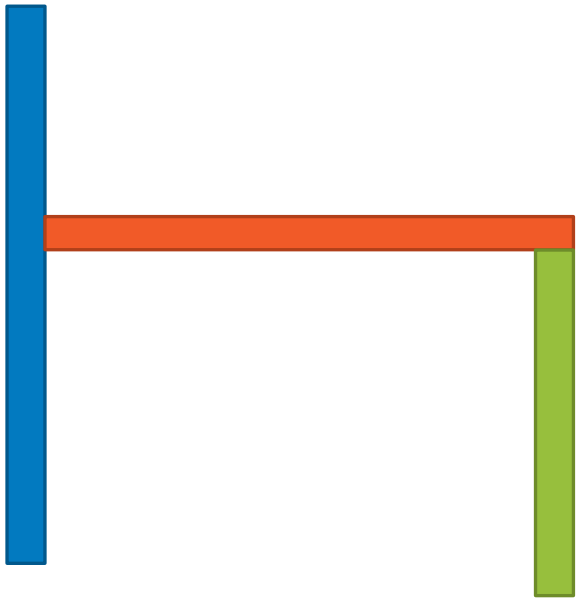
The final analysis was a stress test of the tiering recommendations:

- Scenario Testing
- Traffic Operations Analysis

Segments and Bundles

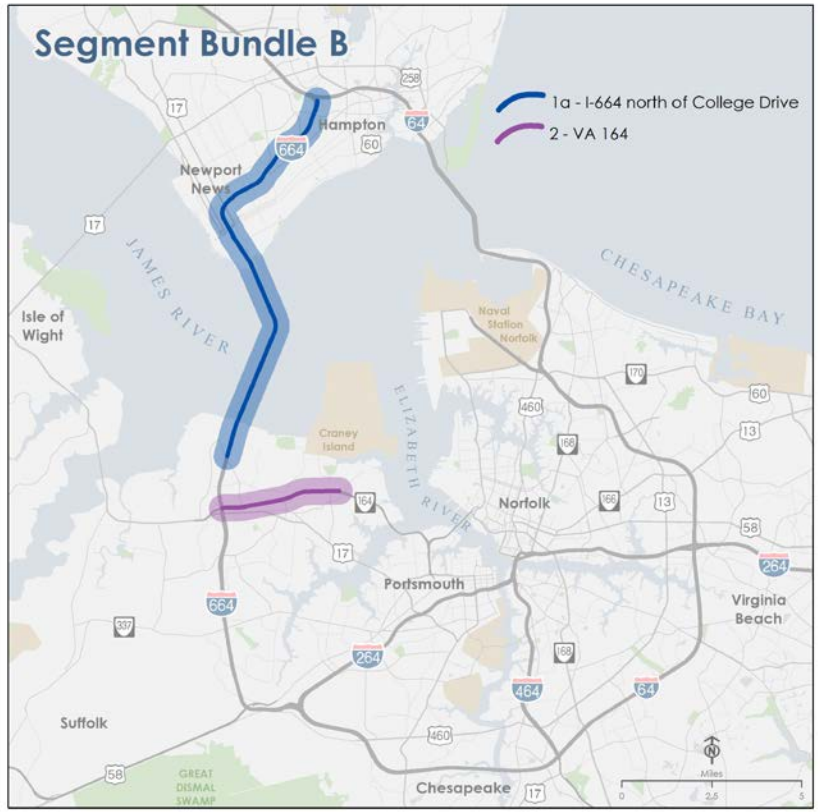


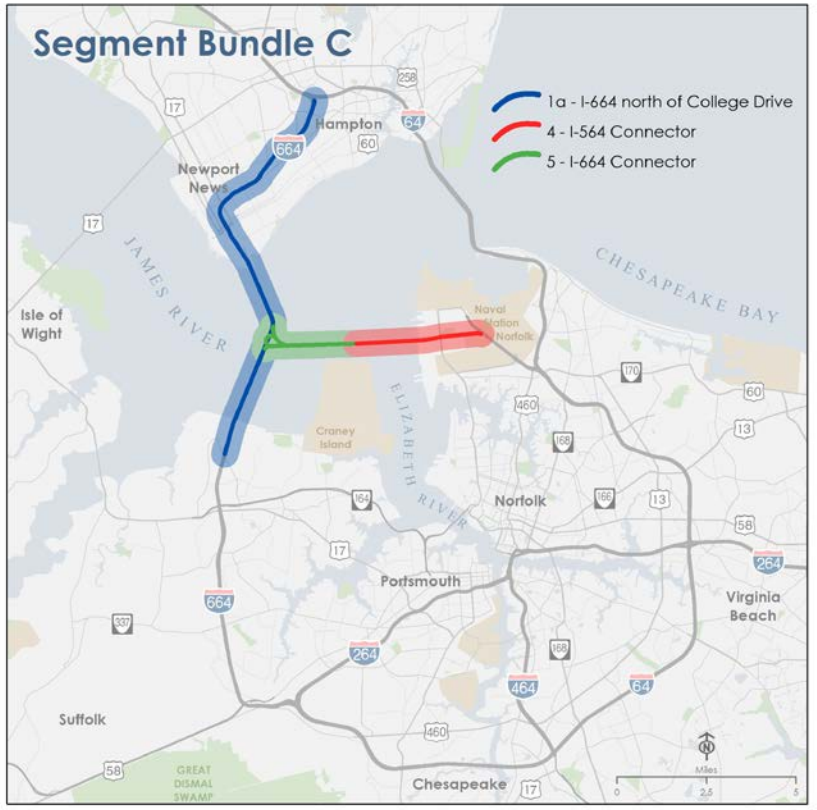
SEGMENTS

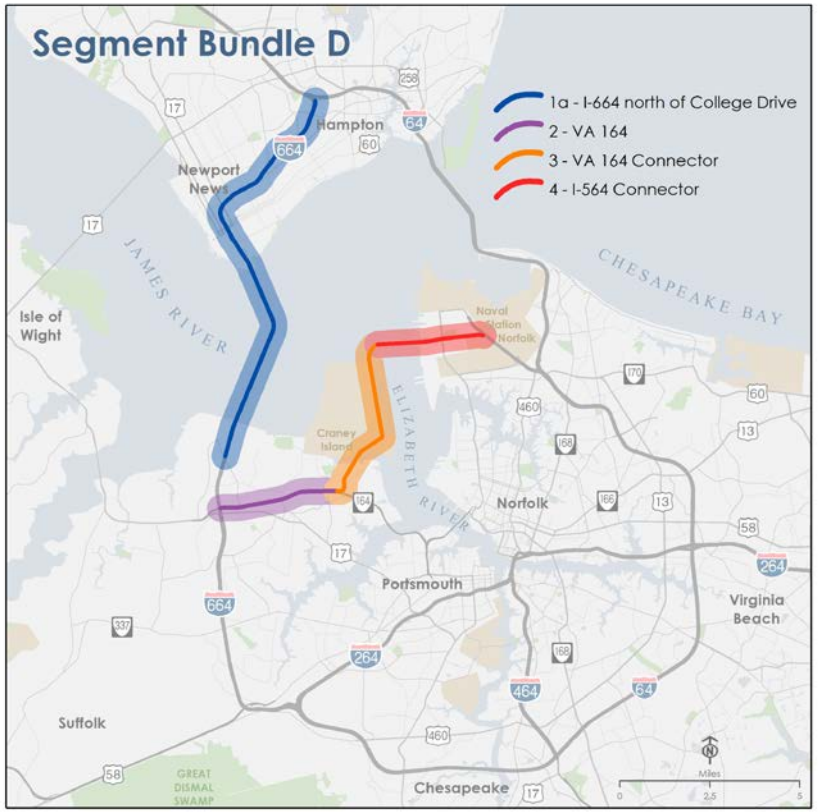


BUNDLE

Analysis: Bundles B, C and D







Scope of work allows testing of baseline and up to 3 bundles of segments in Tiers I and II

Greater Growth Scenarios

- Greater Growth Scenarios reflect 2x the employment growth from 2015-2045 and associated increase in population growth

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

GREATER GROWTH ON THE WATER

- Growth in water-oriented activity
- Port of Virginia becomes even more competitive with freight more multimodal
- More dispersed housing locations
- Moderate assumptions for CAV adoption & network adaptation

GREATER GROWTH IN URBAN CENTERS

- Significant economic diversification
- Low space requirements per job
- Large role for "digital port"
- New professionals prefer to live/work in urban settings
- High level of CV adoption & low auto ownership or high TNC mode

GREATER SUBURBAN / GREENFIELD GROWTH*

- Growth is suburban / exurban, but growth includes walkable mixed use centers
- Port of Virginia becomes even more competitive
- "Digital port" brings additional jobs
- Housing is more suburban
- High level of AV adoption & network adaptation

WHAT THESE WILL HELP US TEST

Water	Urban	Suburban
Test greater cross-harbor travel in particular	Test more urban & multimodal travel patterns	Test more overall regional travel

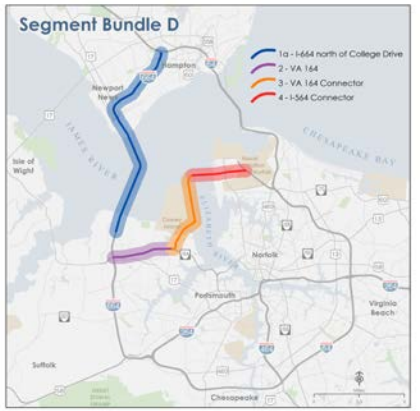
Scenario Planning Stress Test – Part 1

Transportation System Demand

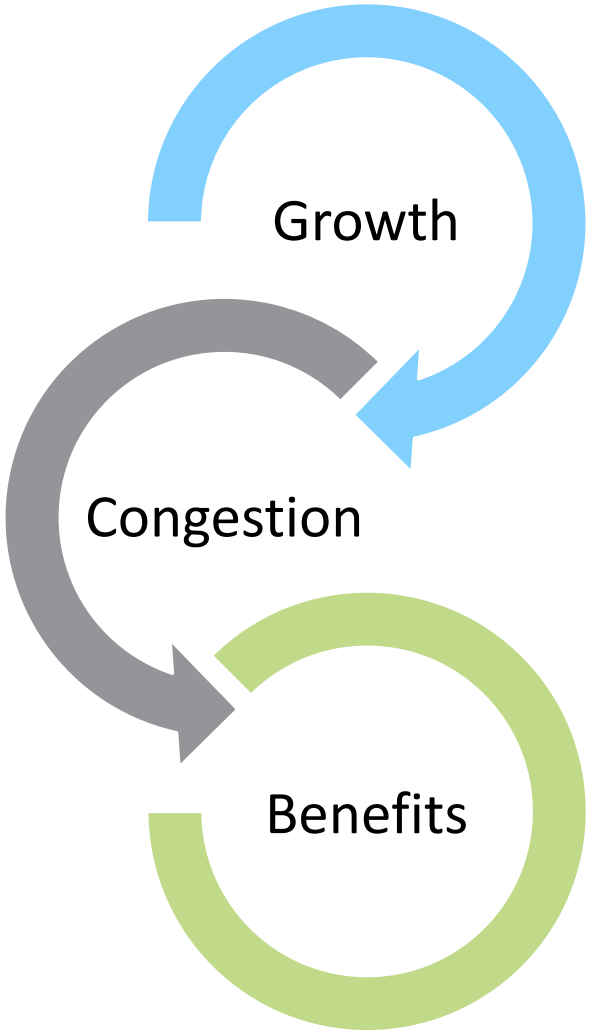
- Greater Suburban Growth
- Greater Growth on the Water
- Greater Urban Growth
- Baseline Land Use

- Bundle D
- Bundle C
- Bundle B
- Baseline Network

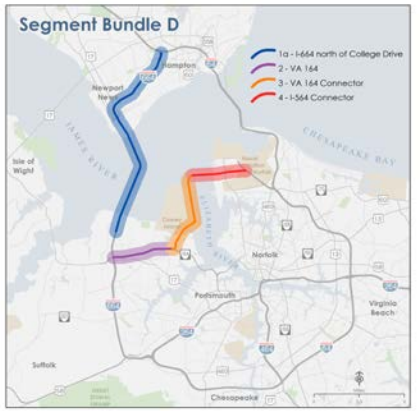
Cross Harbor Capacity



Congestion & Economic Analysis

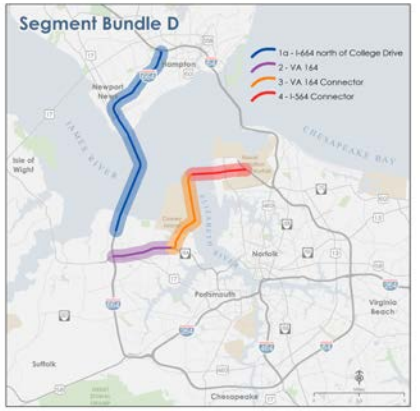


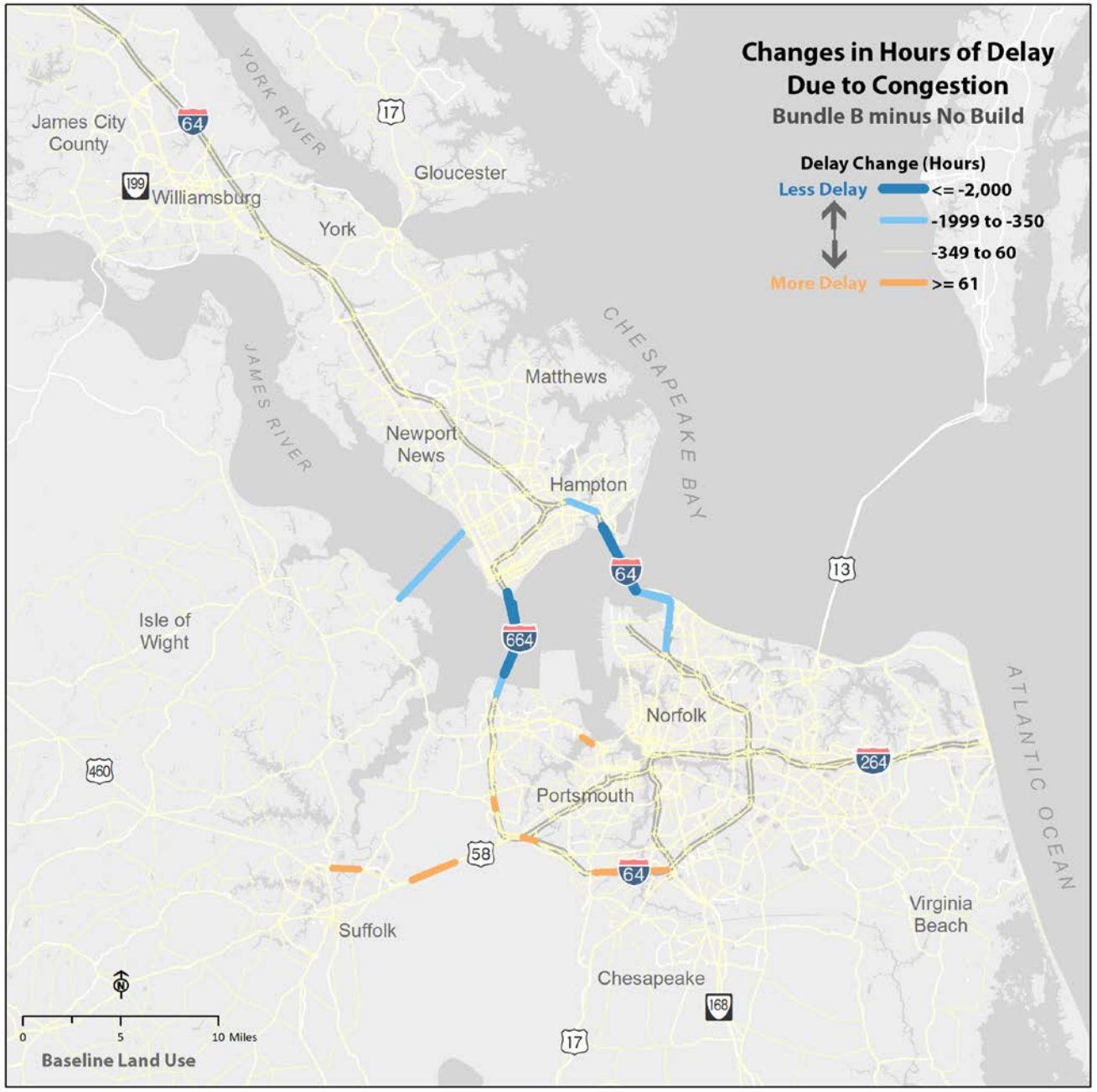
- With more growth, there is more congestion
- The more we build, the greater the congestion benefits
  - The bundle that delivers the most benefit varies by scenario (Bundle C vs Bundle D)
- Most of the congestion benefits are delivered with the Tier I projects (Bundle B)
  - These benefits are greater relative to cost
  - The amount of additional benefit from Tier 2 segments is greatest in the Greater Growth on the Water scenario



Congestion & Economic Results - Takeaways

- Comparing benefits and costs, Bundle B (Tier I segments) has the strongest results in any growth scenario
- With greater congestion, scenarios show additional benefits from the segments including Tier 2 segments
  - Bundle C and D may merit future consideration despite their high cost, depending on how the future evolves, particularly under the Greater Growth on the Water assumptions



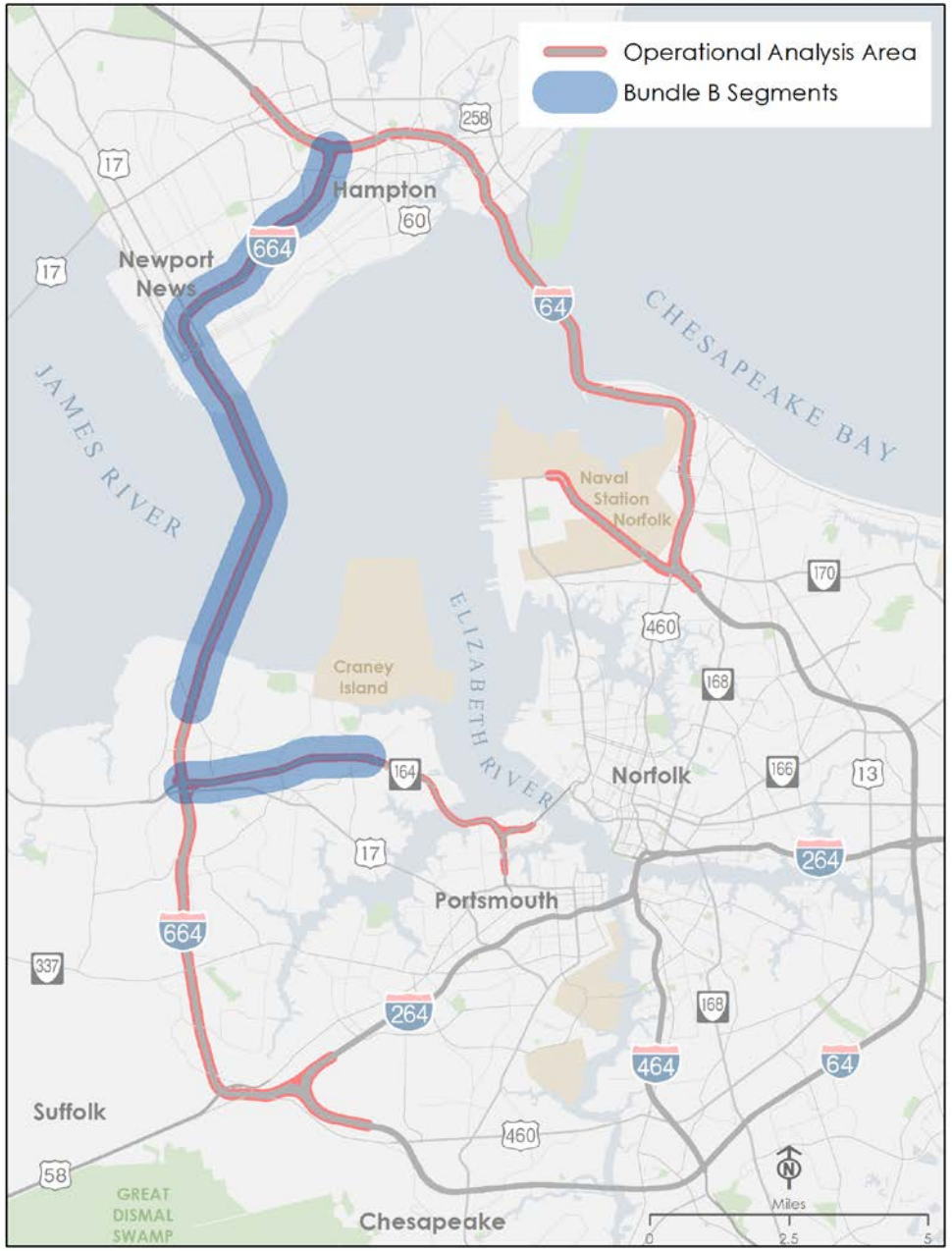


Congestion Results for Bundle B

Stress Test – Part 2

Conducted **traffic operational analyses** for study roadways and interchanges

- I-64
- I-664
- I-564
- VA 164



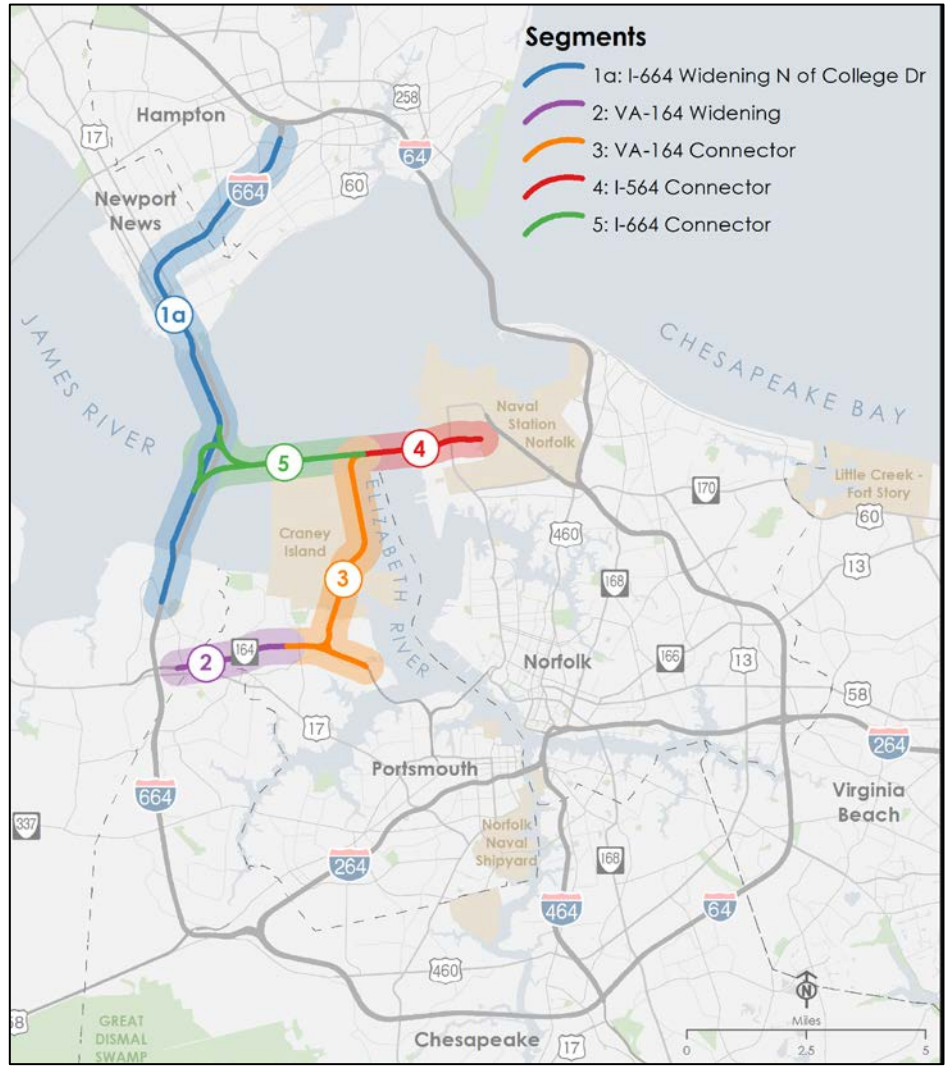
Operations Analysis – Key Take-Aways

- In their improved configuration, the two tunnel crossings (HRBT and MMMBT) were tested for future operational performance
- For both facilities in 2045, as General Purpose lanes approach capacity, travelers will either decide to divert to the other tunnel crossing or use express lanes
- For all growth scenarios, both the HRBT and improved MMMBT facilities will have sufficient capacity to handle 2045 demand

Summary of Stress Test Findings

Findings support Tier I and Tier II recommendations

- Tier I: Segments 1a and 2
  - Consistently most cost-effective segments and greatest increment of regional benefits
  - Positive results for operation of harbor crossings (HRBT and MMMBT) in 2045
  - Supports their recommendation for evaluation as part of the 2050 HRTPO constrained LRTP
- Tier II: Segments 3, 4 and 5
  - Analyses show that Greater Growth scenario assumptions increase the benefits of Tier II segments → supports their inclusion in the 2050 HRTPO Vision Plan



Public Engagement

- Pop-up and open house meetings in February, 2023
  - Presented draft tiering results, requested input on potential burdens, benefits and ways to balance impacts of the future segment projects
- Regional symposium in May, 2023
  - 18 participants attended from groups including NAACP, several universities, Civil rights and environmental justice specialists from state agencies, and agencies serving seniors, people with disabilities, people who are unhoused, people who have low income, and minority communities.
  - Worked in small groups throughout the workshop to address questions about the segments' potential benefits, potential impacts (burdens), and strategies to improve the outcomes from implementing the segment projects.

Summary of Input

Benefits

- Lower travel times
- Access to jobs
- Bus reliability (especially with express lanes)
- Access to tourism, services & education
- Shorter travel routes

Burdens

- Construction impacts
- Adjacent property impacts
- Environmental impacts
- Visual impacts
- Tolls/costs

Balancing

- Communication regarding construction
- Bike and pedestrian safety at ramps and crossings
- Add recreation access and features
- Manage various construction impacts

Wrapping Up the Study

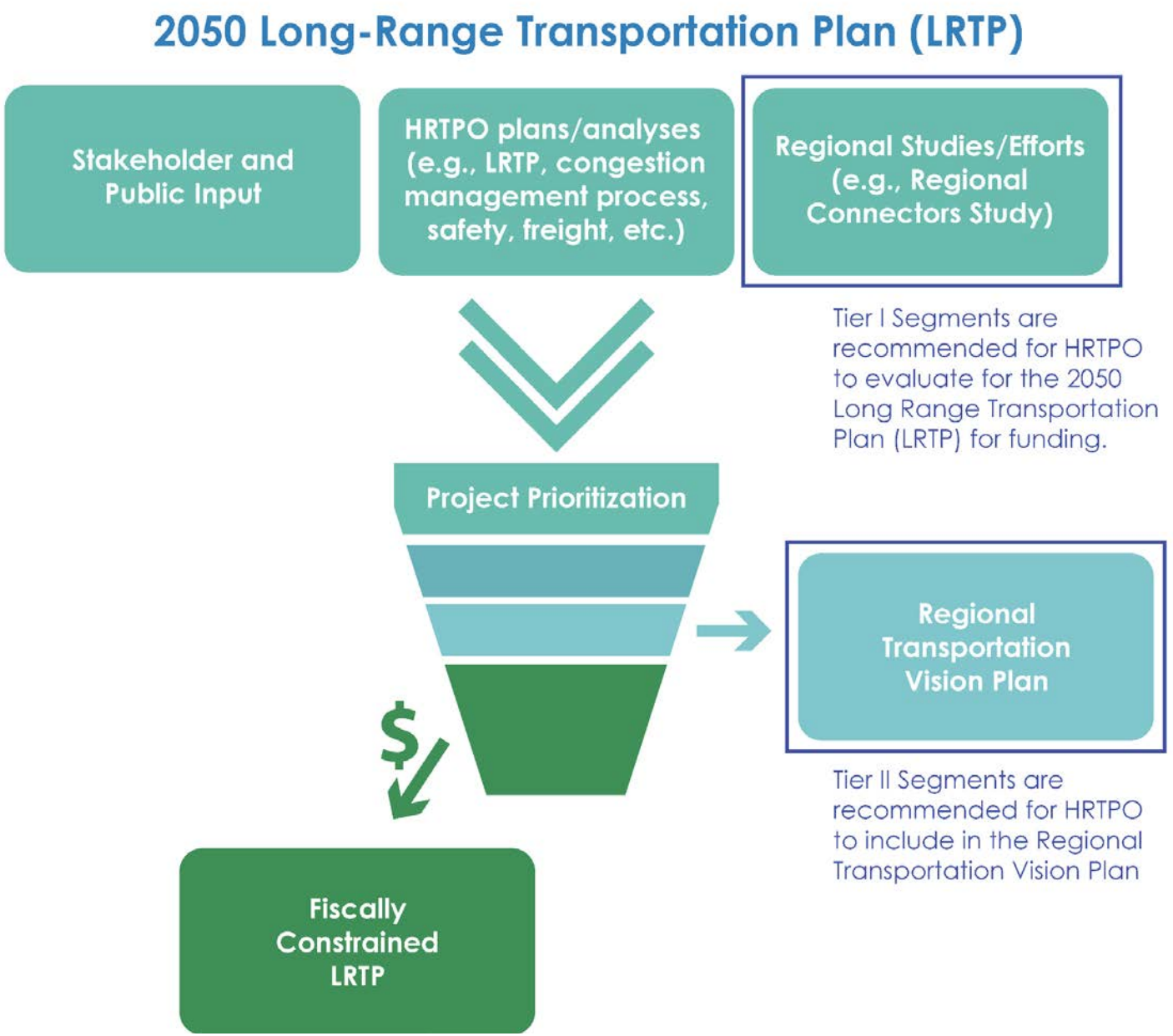
Upcoming:

Phase 3 Technical Report

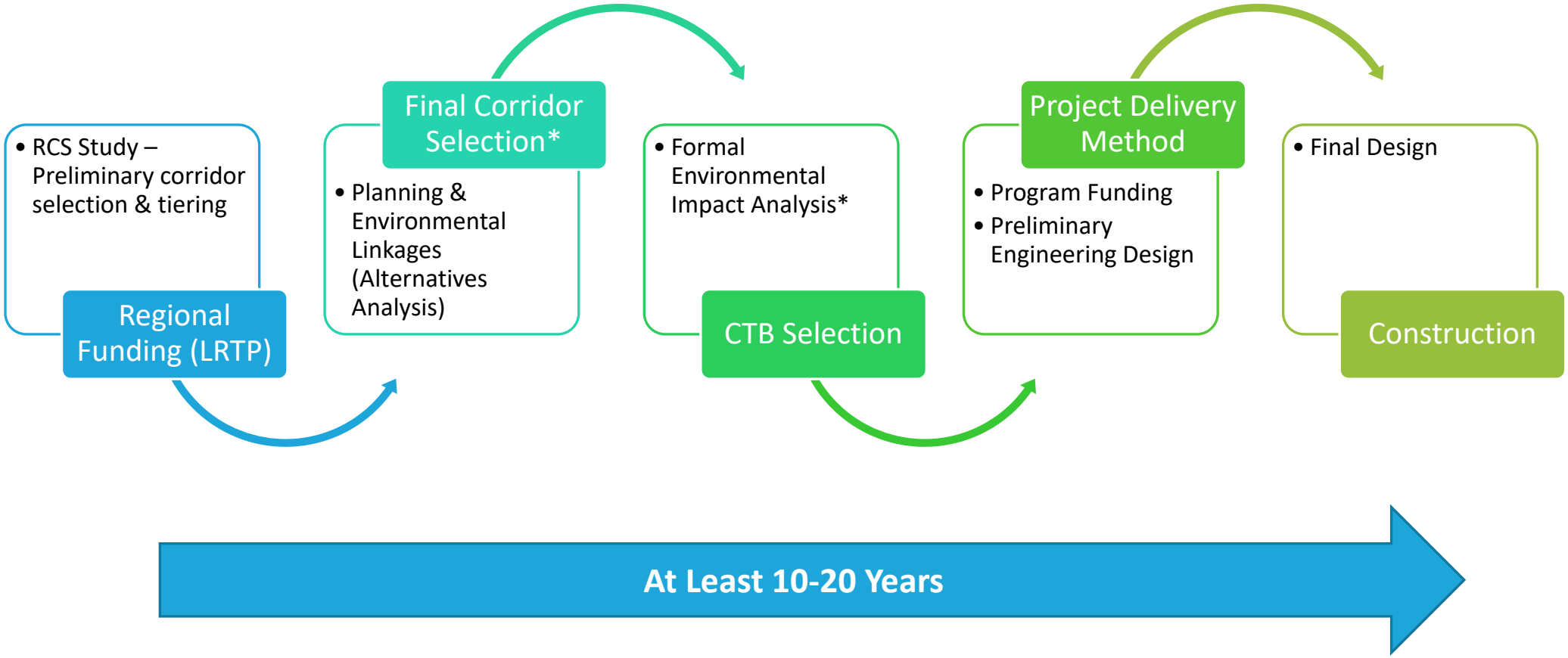
RCS Executive Summary

https://connectorstudy.org

Where Do We Go From Here?



Project Development Process



* Ongoing coordination with HRTPO, HRTAC, FHWA and other regional and resource agency stakeholders

Questions