July 2, 2019

Memorandum #2018-109

TO: Regional Connectors Study Steering (Policy) Committee

BY: Camelia Ravanbakht, RCS Project Coordinator

RE: Regional Connectors Study

Attached is the agenda for the **Regional Connectors Study Steering (Policy) Committee meeting** scheduled for **Tuesday, July 9, 2019 at 10:00 am** at the Regional Building Board Room, located at 723 Woodlake Drive, Chesapeake, VA 23320.

MK/nb

Voting Members:
Rick West (CH)
Donnie Tuck (HA)
McKinley Price (NN)
Martin Thomas (NO)
John Rowe (PO)
Linda Johnson (SU)
Robert Dyer (VB)

Nonvoting Members:
Tim Dolan (USCG)
Gene Leonard (USCG)
CAPT Michael Hayes (USN)
COL Patrick Kinsman (COE)
Keith Lockwood (COE)
Gregory Steele (COE)
Ivan Rucker (FHWA)
John Reinhart (VPA)
Christopher Hall (VDOT)
Craig Quigley (HRMFFA)
Kevin Page (HRTAC)

Staff:
Bob Crum (HRTPO)
Mike Kimbrel (HRTPO)
Rob Case (HRTPO)
Kendall Miller (HRTPO)
Keith Nichols (HRTPO)
Dale Stith (HRTPO)

Project Coordinator:
Camelia Ravanbakht

Agenda

Regional Connectors Study

Steering (Policy) Committee

July 9, 2019

10:00 AM

The Regional Building, Regional Board Room, 723 Woodlake Drive, Chesapeake, Virginia

1. Call to Order
2. Welcome and Introductions
3. Public Comment Period (Limit 3 minutes per individual)
4. Minutes

   Summary Minutes from April 30, 2019 Steering (Policy) Committee Meeting:

   Attachment 4

   Recommended Action: For Approval

5. Regional Connectors Study: Phase 2 Supplement Budget Omission: Craig Eddy, MBI

   The Consultant Team Project Manager inadvertently omitted subconsultant EDR Group's budget from the Phase 2 supplement budget that was approved by the HRTPO Board on May 16, 2019. The omitted amount is $106,421 as shown in the attached subsequent Phase 2 supplement. The supplement includes no scope change, the work associated with this cost was included in the supplement approved by the HRTPO Board in May and is well underway.

   The RCS Working Group reviewed this item at its June 13, 2019 Meeting and has recommended approval.

   The goal is to seek approval to increase the study budget to cover EDR Group's efforts from the Steering (Policy) Committee on July 9 and the HRTPO Board on July 18.

   Attachment 5 – Phase 2 Supplement Budget Omission

   - Recommended Action: For Discussion and Approval

6. Regional Connectors Study: Phase 2 Status Report: Craig Eddy, MBI

The RCS Phase 2 Scope of Work consists of two primary tasks:

- Execute Study Engagement Plan
- Conduct Scenario Planning

Mr. Craig Eddy, RCS Project Manager, will brief the Steering (Policy) Committee with an update of the RCS Phase 2 Tasks.

Attachment 6 – Phase 2 Tasks/Schedule

Recommended Action: For Information and Discussion

7. Regional Connectors Study: Scenario Planning: Lorna Parkins, MBI

Scenario planning is a non-traditional type of planning that, while gaining popularity in the industry, differs from traditional planning methods in that it is exploratory and not predictive in nature.

Traditional planning makes predictions about the patterns and quantities of future land use and then correlates that land use to different modes of travel. Scenario planning, on the other hand, takes the traditional planning method a step farther and looks at potential influences on the types and quantities of land use. Potential technological (e.g., the new trans-Atlantic fiberoptic network, connected/autonomous vehicles, ridesharing), environmental (e.g., sea level rise, resiliency), and economic (e.g., increased freight capacity and military presence) influences are explored in scenario planning to forecast what regional conditions might be like if a combination of these influences come to fruition in the future.

Ms. Lorna Parkins, MBI, will brief the Steering (Policy) Committee with a review of the scenario planning and its components:

- Scenario Narratives - (Attachment 7A)
- Options for Greater Growth Employment Level - (Attachment 7B)
- Goals, Objectives, and Performance Measures - (Attachments 7C.1 and 7C.2)

The RCS Working Group, at its June 13, 2019 Meeting, thoroughly reviewed and recommended approval of each of the above scenario planning components.

- Recommended Actions: For Discussions and Approvals

8. Next Meetings and Planned Activities: Camelia Ravanbakht, RCS Project Coordinator

- HRTPO Board Meeting – July 18, 2019, 10:30 AM
- RCS Working Group Workshop: August 15, 2019, 10 AM – 12 PM
- Tour of the Navy Fuel Depot: September 2019
- Tour and Presentation of the Craney Island Proposed 4th Marine Terminal: October 2019

9. Adjournment

Regional Connectors Study (RCS)
Steering Committee Meeting
Minutes
April 30, 2019, 9:00am
Chesapeake Public Safety Operations Center, Chesapeake

The following were in attendance (alphabetically by last name):

James Baker (Chesapeake)
Rob Case (HRTPO)
Bob Crum (HRTPO)
Rick Dwyer (HRMFFA)
Craig Eddy (Michael Baker Intl.)
Brian Fowler (Norfolk)
Amy Inman (Norfolk)
Carl Jackson (Portsmouth)
Mike Kimbrel (HRTPO)
Michael King (Navy)
Keith Lockwood (Army Corps)
Barbara Nelson (VPA)
Keith Nichols (HRTPO)
Dawn Odom (VDOT)
Kevin Page (HRTAC)
Lorna Parkins (Michael Baker Intl.)
McKinley Price (Newport News)
Craig Quigley (HRMFFA)
Camelia Ravanbakht (RCS Project Coordinator)
Dustin Rinehart (VPA)
John Rowe (Portsmouth)
Earl Sorey (Chesapeake)
Dale Stith (HRTPO)
Martin Thomas (Norfolk)
Donnie Tuck (Hampton)

1. Call to Order

Bob Crum (HRTPO) called the meeting to order at 9:09am.

2. Welcome and Introductions

Attendees introduced themselves around the table.

3. Committee Organizational Structure

Bob Crum presented the idea of the committee nominating a voting member as chair. Mayor Price (NN) was chosen as chair, and he appointed Mayor Rowe (Portsmouth) as vice chair.

4. Public Comment Period

There were no public comments.

5. Minutes

The minutes of the Feb. 13, 2019 meeting were approved.

6. Phase 2 (scaled down) Tasks Status Report

Craig Eddy (MBI) presented slides concerning his team's recent work.

7. Phase 2 Supplemental Scope of Work, Cost and Budget

Craig Eddy (MBI) presented slides concerning the Phase 2 Supplemental Scope (additional subtasks within Scenario Planning, Task 4). The committee approved the Phase 2 Supplemental Scope, forwarding it to the HRTPO Board for approval at its May 16, 2019 meeting.

8. Schedule and Next Meetings

- Working Group Scenario Planning Webinar #5: May 2, 2019; 10am.
- Craney Island Site Visit: 9am, May 3, 2019; 9am, Craney Island.
- HRTPO Board Meeting: May 16, 2019 (anticipate Phase 2 Supplement approval).
- Working Group Scenario Planning Workshop: May 21, 2019; 10am.
- Webinar #6: June 6, 2019; 10am.

Carl Jackson (Portsmouth) asked about involving economic development departments, and Bob Crum said that he plans to present the RCS to them at the next HREDA meeting.

7. Adjournment

The meeting was adjourned at 9:41am.

ATTACHMENT 5

Cost Proposal

HRTPO

REGIONAL CONNECTORS STUDY

PHASE 2 - Supplement 2

May 28, 2019

Attachment 5

TASK SUMMARY

Task No.	Task	Hours	Labor Costs	ODC's	TOTAL COST
1	**EXECUTE ENGAGEMENT PLAN**				
1.1	Task Management	0	$0	$0	$0
1.2	Engagement Plan Review	0	$0	$0	$0
1.3	Implementation of Engagement Plan	0	$0	$0	$0
1.3a	Study Mailing List and Comment Database	0	$0	$0	$0
1.3b	Stakeholder Briefings and Presentations	0	$0	$0	$0
1.3c	Brochures, Factsheets, Handouts	0	$0	$0	$0
1.3d	Community Events and Outreach	0	$0	$0	$0
1.4	Website Upgrades and Maintenance	0	$0	$0	$0
	Total Task 1	**0**	**$0**	**$0**	**$0**
2	**DEVELOPMENT OF PRELIMINARY ALTERNATIVES**				
2.1	Develop Geometry of Preliminary Alternatives	0	$0	$0	$0
2.2	Hydraulics and Hydrology	0	$0	$0	$0
2.3	Structures	0	$0	$0	$0
2.4	Utilities and Railroad Crossings	0	$0	$0	$0
2.5	Planning Cost Estimates	0	$0	$0	$0
	Total Task 2	**0**	**$0**	**$0**	**$0**
3	**DETERMINATION OF CANDIDATE ALTERNATIVES (Screen 1)**				
3.1	Conduct Congestion Relief Assessments	0	$0	$0	$0
3.2	Conduct Permitability Assessments	0	$0	$0	$0
3.3	Conduct Constructability Assessments	0	$0	$0	$0
	Total Task 3	**0**	**$0**	**$0**	**$0**
4	**CONDUCT SCENARIO PLANNING**				
4.1	Building the Base Data, Models, and Scenarios	0	$0	$0	$0
4.2	Defining Alternative Future Scenarios	0	$0	$0	$0
4.3	Defining Measures of Success	68	$11,895	$0	$11,895
4.4	Evaluate 2015 Current Regional Conditions	0	$0	$0	$0
4.5	Modeling the 2045 Baseline Alternative	128	$20,012	$764	$20,776
4.6	Building the Alternative Scenarios	52	$8,908	$0	$8,908
4.7	Evaluating the Scenarios	244	$38,715	$764	$39,479
	Total Task 4	**492**	**$79,530**	**$1,528**	**$81,058**
5	**PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE**				
5.1	Working Group Meetings	23	$4,071	$603	$4,674
5.2	Steering Committee Meetings	2	$315	$0	$315
	Total Task 5	**25**	**$4,386**	**$603**	**$4,989**
6	**MANAGE THE PROJECT**				
6.1	Weekly Coordination with Study Leadership	44	$7,864	$0	$7,864
6.2	Schedule and Budget Oversight	18	$2,835	$0	$2,835
6.3	Quality Assurance of Deliverables	0	$0	$0	$0
6.4	Craney Island site visit	0	$0	$0	$0
	Total Task 6	**62**	**$10,699**	**$0**	**$10,699**
	TOTALS	**579**	**$94,615**	**$2,131**	**$96,746**
	10% Contingency				**$9,675**
	TOTAL				**$106,421**

TEAM SUMMARY

Task	HOURS							LABOR COSTS						
	Baker	PRR	EPR	EDR Group	McPherson	Solstice	**TOTAL**	Baker	PRR	EPR	EDR Group	McPherson	Solstice	**TOTAL**
EXECUTE ENGAGEMENT PLAN														
Task Management	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Engagement Plan Review	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Implementation of Engagement Plan	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Study Mailing List and Comment Database	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Stakeholder Briefings and Presentations	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Brochures, Factsheets, Handouts	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Community Events and Outreach	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Website Upgrades and Maintenance	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Total Task 1	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
DEVELOPMENT OF PRELIMINARY ALTERNATIVES														
Develop Geometry of Preliminary Alternatives	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Hydraulics and Hydrology	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Structures	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Utilities and Railroad Crossings	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Planning Cost Estimates	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Total Task 2	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
DETERMINATION OF CANDIDATE ALTERNATIVES (Screen 1)														
Conduct Congestion Relief Assessments	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Conduct Permitability Assessments	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Conduct Constructability Assessments	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Total Task 3	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
CONDUCT SCENARIO PLANNING														
Building the Base Data, Models, and Scenarios	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Defining Alternative Future Scenarios	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Defining Measures of Success	0	0	0	68	0	0	68	$0	$0	$0	$11,895	$0	$0	$11,895
Evaluate 2015 Current Regional Conditions	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Modeling the 2045 Baseline Alternative	0	0	0	128	0	0	128	$0	$0	$0	$20,012	$0	$0	$20,012
Building the Alternative Scenarios	0	0	0	52	0	0	52	$0	$0	$0	$8,908	$0	$0	$8,908
Evaluating the Scenarios	0	0	0	244	0	0	244	$0	$0	$0	$38,715	$0	$0	$38,715
Total Task 4	0	0	0	492	0	0	492	$0	$0	$0	$79,530	$0	$0	$79,530
PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE														
Working Group Meetings	0	0	0	23	0	0	23	$0	$0	$0	$4,071	$0	$0	$4,071
Steering Committee Meetings	0	0	0	2	0	0	2	$0	$0	$0	$315	$0	$0	$315
Total Task 5	0	0	0	25	0	0	25	$0	$0	$0	$4,386	$0	$0	$4,386
MANAGE THE PROJECT														
Weekly Coordination with Study Leadership	0	0	0	44	0	0	44	$0	$0	$0	$7,864	$0	$0	$7,864
Schedule and Budget Oversight	0	0	0	18	0	0	18	$0	$0	$0	$2,835	$0	$0	$2,835
Quality Assurance of Deliverables	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Craney Island site visit	0	0	0	0	0	0	0	$0	$0	$0	$0	$0	$0	$0
Total Task 6	0	0	0	62	0	0	62	$0	$0	$0	$10,699	$0	$0	$10,699
TOTALS	0	0	0	579	0	0	579	$0	$0	$0	$94,615	$0	$0	$94,615
ODC								$0	$0	$0	$2,131	$0	$0	$2,131
TOTALS								$0	$0	$0	$96,746	$0	$0	$96,746
Work Split								0%	0%	0%	100%	0%	0%	100%

Attachment 5

TEAM SUMMARY

Task No.	Task	Other Direct Costs: Reproduction	Travel	Lodging	Per Diem	Communication/Postage	Survey - layout, printing, mailing, scanning		Phase I Budget Shortage	Phase 3 Contingency	TOTAL
1	**EXECUTE ENGAGEMENT PLAN**										
1.1	Task Management	$0	$0	$0	$0	$0					$0
1.2	Engagement Plan Review	$0	$0	$0	$0	$0					$0
1.3	Implementation of Engagement Plan	$0	$0	$0	$0	$0					$0
1.3a	Study Mailing List and Comment Database	$0	$0	$0	$0	$0					$0
1.3b	Stakeholder Briefings and Presentations	$0	$0	$0	$0	$0					$0
1.3c	Brochures, Factsheets, Handouts	$0	$0	$0	$0	$0					$0
1.3d	Community Events and Outreach	$0	$0	$0	$0	$0					$0
1.4	Website Upgrades and Maintenance	$0	$0	$0	$0	$0					$0
	Total Task 1 Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	**DEVELOPMENT OF PRELIMINARY ALTERNATIVES**										
2.1	Develop Geometry of Preliminary Alternatives	$0	$0	$0	$0	$0					$0
2.2	Hydraulics and Hydrology	$0	$0	$0	$0	$0					$0
2.3	Structures	$0	$0	$0	$0	$0					$0
2.4	Utilities and Railroad Crossings	$0	$0	$0	$0	$0					$0
2.5	Planning Cost Estimates	$0	$0	$0	$0	$0					$0
	Total Task 2 Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	**DETERMINATION OF CANDIDATE ALTERNATIVES (Screen 1)**										
3.1	Conduct Congestion Relief Assessments	$0	$0	$0	$0	$0					$0
3.2	Conduct Permitability Assessments	$0	$0	$0	$0	$0					$0
3.3	Conduct Constructability Assessments	$0	$0	$0	$0	$0					$0
	Total Task 3 Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	**CONDUCT SCENARIO PLANNING**										
4.1	Building the Base Data, Models, and Scenarios	$0	$0	$0	$0	$0	$0	$0			$0
4.2	Defining Alternative Future Scenarios	$0	$0	$0	$0	$0					$0
4.3	Defining Measures of Success	$0	$0	$0	$0	$0					$0
4.4	Evaluate 2015 Current Regional Conditions	$0	$0	$0	$0	$0					$0
4.5	Modeling the 2045 Baseline Alternative	$0	$400	$210	$154	$0					$764
4.6	Building the Alternative Scenarios	$0	$0	$0	$0	$0					$0
4.7	Evaluating the Scenarios	$0	$400	$210	$154	$0					$764
	Total Task 4 Costs	$0	$800	$420	$308	$0	$0	$0	$0	$0	$1,528
5	**PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE**										
5.1	Working Group Meetings	$0	$400	$105	$98	$0					$603
5.2	Steering Committee Meetings	$0	$0	$0	$0	$0					$0
	Total Task 5 Costs	$0	$400	$105	$98	$0	$0	$0	$0	$0	$603
6	**MANAGE THE PROJECT**										
6.1	Weekly Coordination with Study Leadership	$0	$0	$0	$0	$0			$0	$0	$0
6.2	Schedule and Budget Oversight	$0	$0	$0	$0	$0					$0
6.3	Quality Assurance of Deliverables	$0	$0	$0	$0	$0					$0
6.4	Craney Island site visit	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Task 6 Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	TOTAL COSTS	$0	$1,200	$525	$406	$0	$0	$0	$0	$0	$2,131

Attachment 5

ATTACHMENT 6

Regional Connectors Study - Phase 2 Schedule

Task No	Task	2019 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	2020 JAN
TASK 1	EXECUTE ENGAGEMENT PLAN													
1.1	Task Management													
1.2	Engagement Plan Review													
1.3	Implementation of Engagement Plan													
1.3a	Study Mailing List and Comment Database													
1.4	Website Upgrades and Maintenance													
TASK 4	CONDUCT SCENARIO PLANNING													
4.1	Building the Base Data, Models, and Scenarios													
4.2	Defining Alternative Future Scenarios													
4.3	Defining Measures of Success													
4.4	Evaluate 2015 Regional Conditions													
4.5	Modeling the 2045 Baseline Scenario													
4.6	Building the Alternative Scenarios													
4.7	Evaluating the Scenarios													
TASK 5	PREPARE FOR AND ATTEND MEETINGS (WORKING GROUP AND STEERING COMMITTEE)													
5.1	Working Group Meetings													
5.2	Steering Committee Meetings													
TASK 6	MANAGE THE PROJECT													
6.1	Weekly Coordination with Study Leadership													
6.2	Schedule and Budget Oversight													
6.3	Quality Assurance of Deliverables													
6.4	Craney Island site visit													

- Draft Deliverables
- Final Deliverables
- Steering Committee Meetings and Presentations
- Working Group Coordination Meeting
- Scenario Planning Webinar
- Continuous Task
- Draft Task Schedule
- HRTPO to approve updated Prioritization Tool
- 2015 Regional Travel Demand Model available
- 2045 Regional Travel Demand Model available

Attachment 6

ATTACHMENT 7A

Scenario Narratives & Working Group Guidance

- Through the series of webinars and workshops since February, the working group completed the following activities:

  - Reviewed the basics of exploratory scenarios and scenario drivers
  - Completed a questionnaire on potential scenario drivers
  - Reviewed potential economic narratives for the scenarios
  - Suggested that the scenario narratives be organized by spatial themes
  - Refined draft scenario narratives and drivers in a workshop
  - Approved the draft scenario narratives that follow

Attachment 7A

Scenarios Organized around Spatial Themes

DRAFT

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?

Attachment 7A

Scenario Narratives

DRAFT

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 and 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 and low auto ownership/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 and network adaptation.

WHAT THESE WILL HELP US TEST

Test greater cross-harbor travel in particular.

Test more urban and multimodal travel patterns.

Test more overall regional travel.

NOTE: Sea Level Rise assumed as 3 ft. in all Scenarios

Attachment 7A

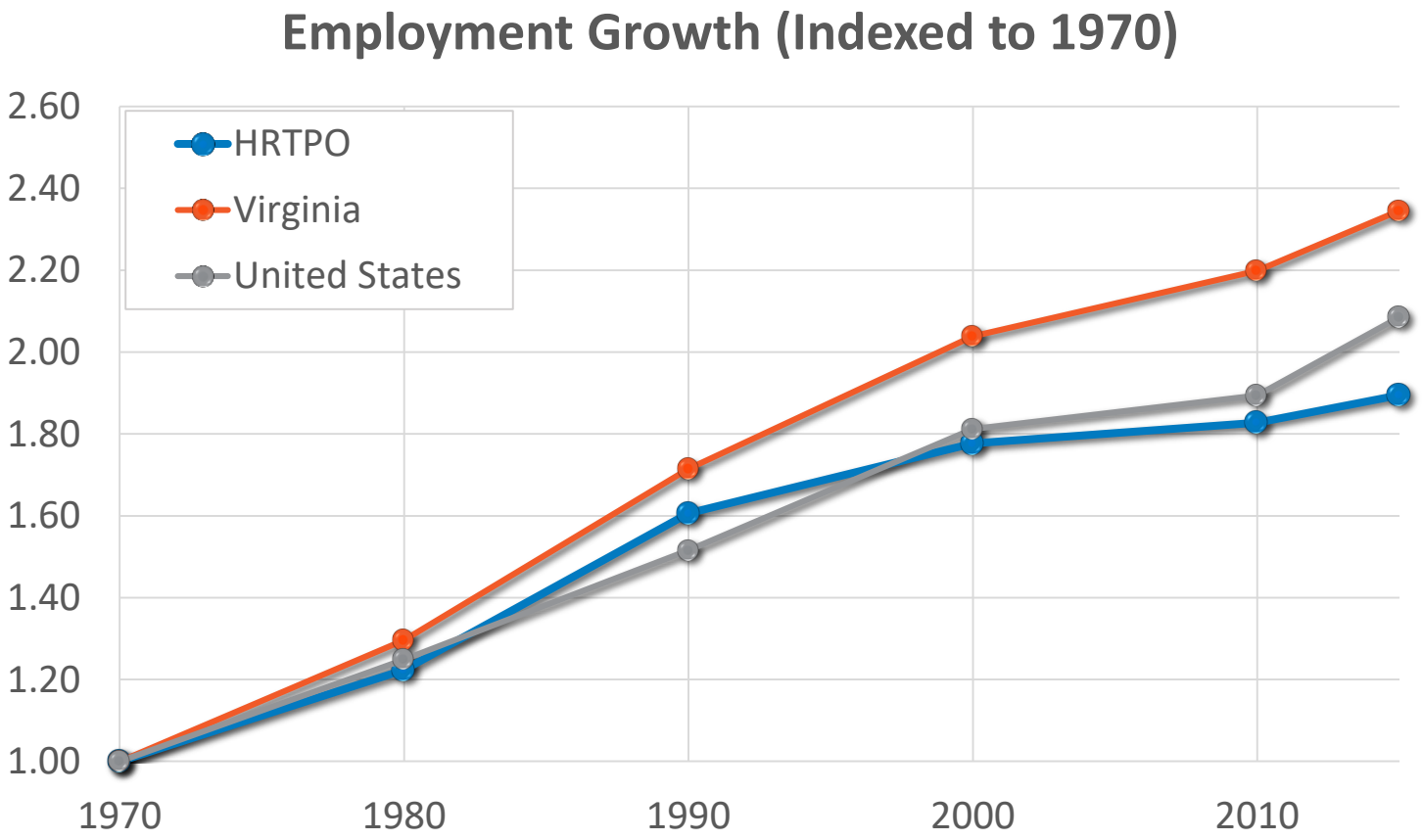
ATTACHMENT 7B

Greater Growth Scenarios

- All scenarios will include the same level of additional growth over the 2045 Baseline forecast for employment and populations
- The land use allocation model will allocate the *increment* of additional growth differently for each scenario
- The land use model will deliver the combined greater growth allocation (2045 baseline + greater growth) by TAZ to the travel demand model
- The travel demand model will be run for each scenario with the Existing plus Committed (E+C) Network in task 4.7, and then with the each RCS alternative under each scenario (Phase 3)
- The discussion that follows considers what is a workable control total for greater growth in employment. The population control total will be derived based on the employment total using the region's REMI economic model.
  - For reference, the baseline 2045 forecast has 8% employment growth and 17% population growth

Attachment 7B

Employment growth over time (retrospective)



Relative to HRTPO:

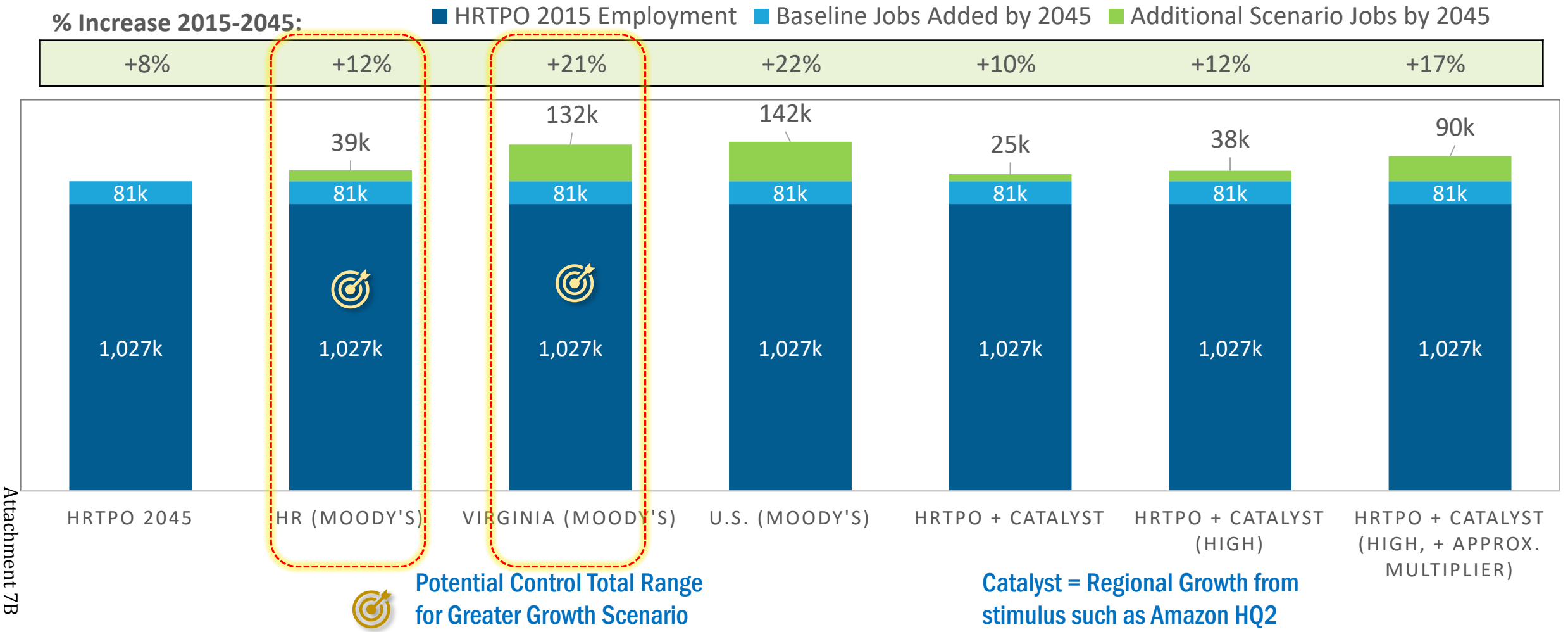
- VA grew significantly faster
- US grew slightly faster on aggregate

Nationally and in HR:
The next 30 years of employment growth are forecast to be significantly slower

Source: Bureau of Economic Analysis (HRTPO data as reported in 2045 Socioeconomic Forecast Report)

Attachment 7B

Regional Employment Added by 2045

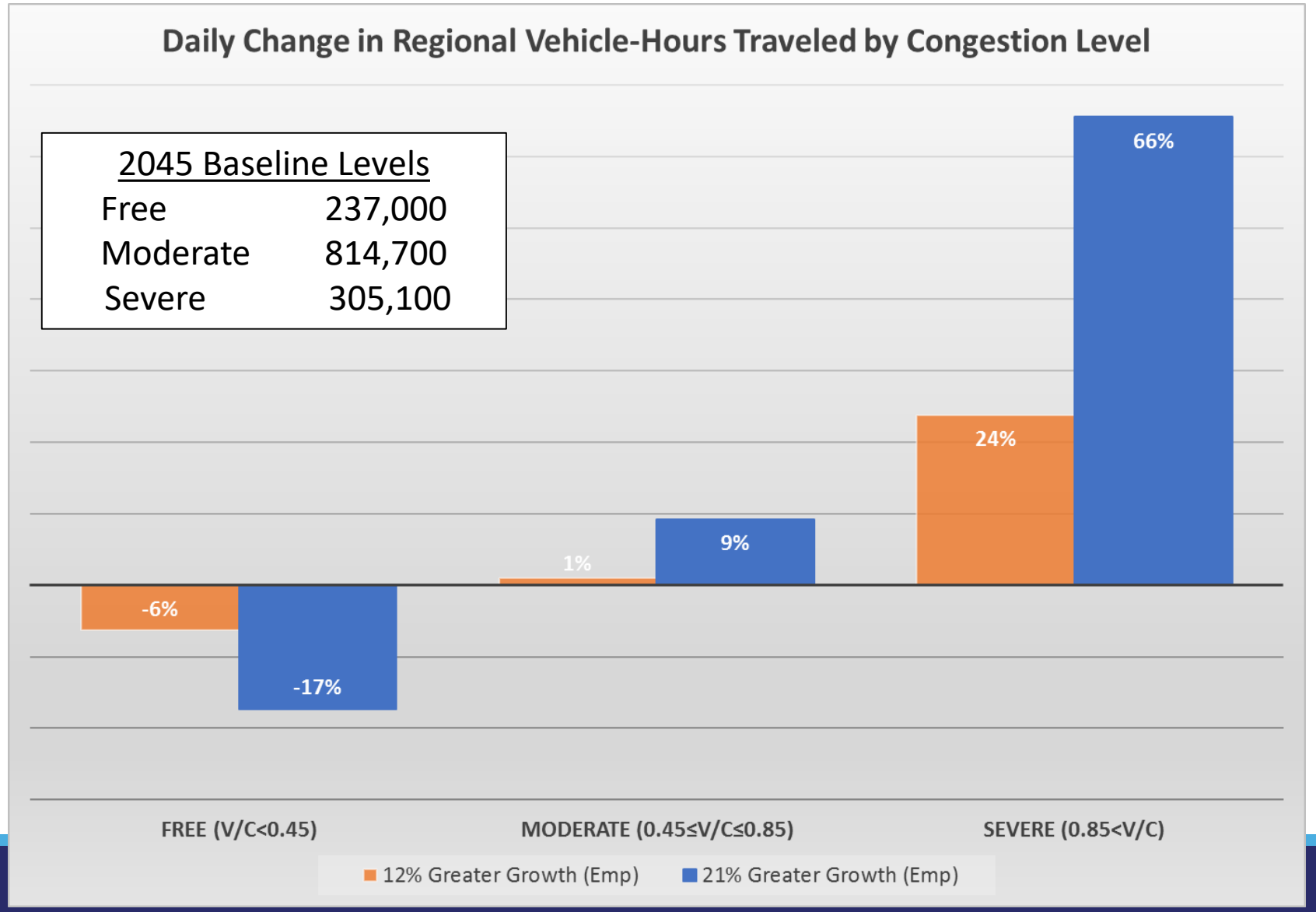


Potential Control Total Range for Greater Growth Scenario

Catalyst = Regional Growth from stimulus such as Amazon HQ2

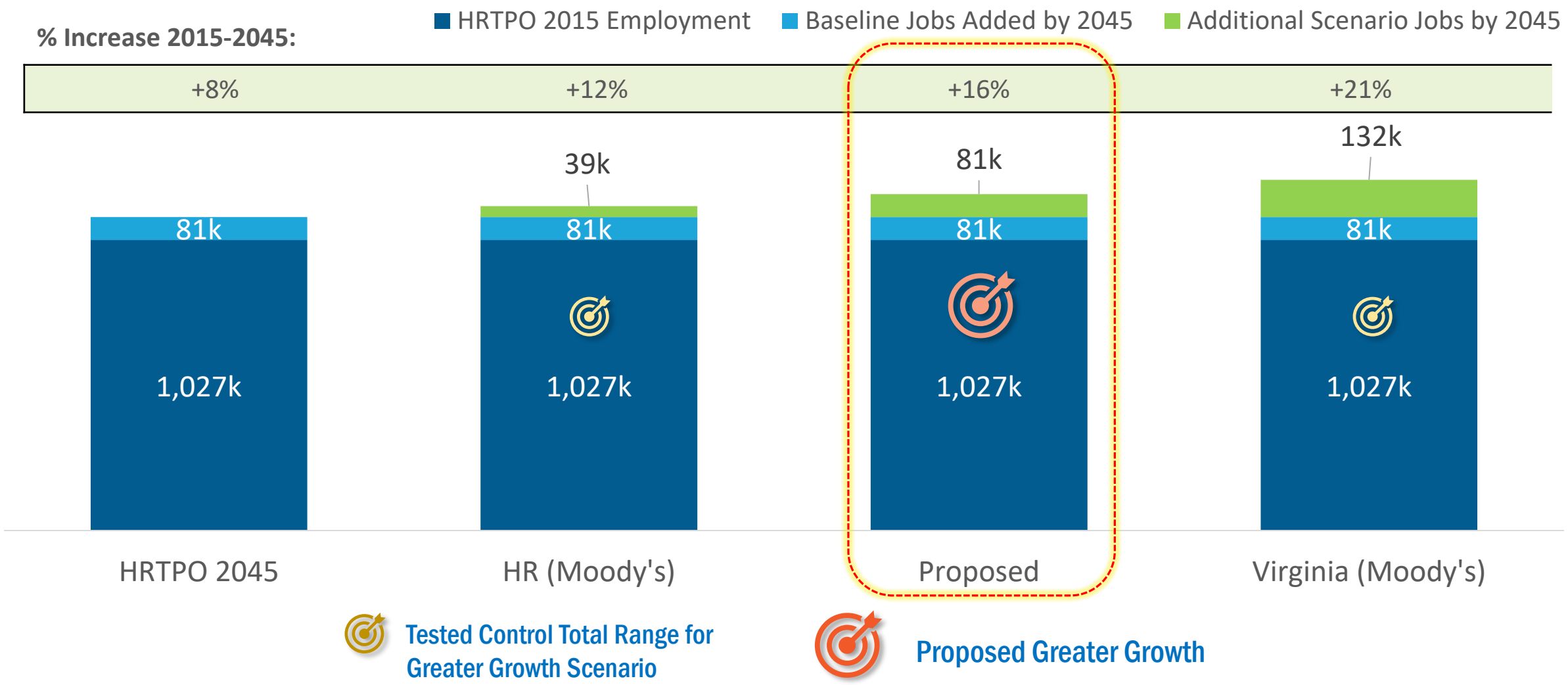
Attachment 7B

Travel Demand Model Sensitivity Analysis
- Alternative control totals for greater employment growth



Attachment 7B

Regional Employment Added by 2045



Attachment 7B

Summary & Discussion

- The overall goal is to provide *differentiation* between the scenarios
  - Too little growth could dilute differences between scenarios
  - Too much growth with widespread, severe congestion could mask differences between scenarios (i.e. anything added to the network will also become congested)
- There is substantial congestion region-wide under the 2045 Baseline with the Existing plus Committed (E+C) Network
- Sensitivity testing in the travel model shows that:
  - 12% growth above 2015 has an effect relative to the baseline, but it is mild
  - 21% growth above 2015 shows a more significant increase in severe congestion
- 21% employment growth would imply that the region keeps pace with Virginia (and Northern Virginia) over the next 30 years – stretches the plausibility factor for 2045
- **Therefore, propose a middle ground of 16% growth above 2015**
  - Appears to be enough to move the needle without overloading the network
  - Believable story line
  - **Doubles** the 2045 baseline employment growth forecast (+ another 81k jobs)

Attachment 7B

ATTACHMENT 7C.1

Vision

"This study should establish a regional long-term vision that investigates 21st century transportation options that connect the Peninsula and the Southside across the Hampton Roads Harbor that enhance economic vitality and improve the quality of life in the region." (Regional Connectors Study RFP)

Goals

Economic Vitality

Sustainability: Equity, Community & Environmental

Connectivity & Accessibility

Safety, Resiliency, & Innovation

Attachment 7C.1

Draft Objectives and Performance Measures

ECONOMIC VITALITY		
Support regional growth and productivity	Support efficient freight movement	Support accessibility for tourism

CONNECTIVITY & ACCESSIBILITY		
Improve connectivity and reliability between the Peninsula and Southside	Improve connectivity and access for all	Reduce delay and improve travel efficiency

SUSTAINBILITY: EQUITY, COMMUNITY & ENVIRONMENTAL		
Improve the sustainbility of communities through increased housing choice and reduced auto-dependency	Ensure that mobility benefits positively affect low income residents	Minimize the environmental impact of future growth and transportation

SAFETY, RESILIENCY & INNOVATION		
Improve safety through a more adaptive transportation network	Make investments that improve flood resiliency	Consider the impacts of technology on system demand and performance

Performance Measures – See Handout

Attachment 7C.1

ATTACHMENT 7C.2

June 21, 2019

Performance Measures ↓	Scenario Measure	Candidate Project Measure	ECONOMIC VITALITY: Support regional growth and productivity	ECONOMIC VITALITY: Support efficient freight movement	ECONOMIC VITALITY: Support accessibility for tourism	SUSTAINBILITY -- EQUITY, COMMUNITY & ENVIRONMENTAL: Improve the sustainbility of communities through increased housing choice and reduced auto-dependency	SUSTAINBILITY -- EQUITY, COMMUNITY & ENVIRONMENTAL: Ensure that mobility benefits positively affect low income residents	SUSTAINBILITY -- EQUITY, COMMUNITY & ENVIRONMENTAL: Minimize the environmental impact of future growth and transportation	CONNECTIVITY & ACCESSIBILITY: Improve connectivity and reliability between the Peninsula and Southside	CONNECTIVITY & ACCESSIBILITY: Improve connectivity and access for all	CONNECTIVITY & ACCESSIBILITY: Reduce delay and improve travel efficiency	SAFETY, RESILIENCY & INNOVATION: Improve safety through a more adaptive transportation network	SAFETY, RESILIENCY & INNOVATION: Make investments that improve flood resiliency	SAFETY, RESILIENCY & INNOVATION: Consider the impacts of technology on system demand and performance
GOALS →			ECONOMIC VITALITY			SUSTAINBILITY -- EQUITY, COMMUNITY & ENVIRONMENTAL			CONNECTIVITY & ACCESSIBILITY			SAFETY, RESILIENCY & INNOVATION		
OBJECTIVES →			Support regional growth and productivity	Support efficient freight movement	Support accessibility for tourism	Improve the sustainbility of communities through increased housing choice and reduced auto-dependency	Ensure that mobility benefits positively affect low income residents	Minimize the environmental impact of future growth and transportation	Improve connectivity and reliability between the Peninsula and Southside	Improve connectivity and access for all	Reduce delay and improve travel efficiency	Improve safety through a more adaptive transportation network	Make investments that improve flood resiliency	Consider the impacts of technology on system demand and performance
(Change in) Lost productivity from delay	■	■	✓							✓	✓			
(Economic impact of change in) Labor market accessibility	■	■	✓						✓	✓	✓			
Performance on the freight network - total delay + spatial results	■			✓					✓		✓			
Change in hours of delay on freight network		■		✓					✓		✓			
Economic impact of change in delay and reliability on the freight network		■		✓										
(Change in) Percent of freight traffic on secondary streets - total + spatial	■	■		✓				✓				✓		
Traffic volumes at at-grade rail crossings		■						✓			✓	✓		
(Change in) Accessibility to major tourist attractions	■	■			✓									
Percent of population in multi-family housing	■					✓								
(Change in) Mode share index	■	■				✓								
(Change in) Transit ridership	■	■				✓								
Percent of growth near key destinations	■					✓								
Average trip length by purpose		■				✓				✓	✓			
Percent of jobs/pop within (15 min) drive time to airport or Amtrak station	■	■			✓					✓				
Ratio of user costs for low income travelers to all user costs (ratio of savings)	■	■					✓							
Low income household access to employment	■	■					✓							
Percent of growth near transit stops	■					✓	✓	✓						
Percent of growth in urban place types	■							✓						
(Change in) cost of emissions	■	■						✓						
Percent of growth on formerly undeveloped land (per 2016 Land Cover Data)	■							✓						
(Change in) Delay on cross-harbor trips [time and dollar value]	■	■							✓		✓			
(Change in) Circuity of cross-harbor trips	■	■							✓		✓			

ATTACHMENT 7C.2

June 21, 2019

	GOALS →		ECONOMIC VITALITY			SUSTAINBILITY -- EQUITY, COMMUNITY & ENVIRONMENTAL			CONNECTIVITY & ACCESSIBILITY			SAFETY, RESILIENCY & INNOVATION		
	OBJECTIVES →		Support regional growth and productivity	Support efficient freight movement	Support accessibility for tourism	Improve the sustainbility of communities through increased housing choice and reduced auto-dependency	Ensure that mobility benefits positively affect low income residents	Minimize the environmental impact of future growth and transportation	Improve connectivity and reliability between the Peninsula and Southside	Improve connectivity and access for all	Reduce delay and improve travel efficiency	Improve safety through a more adaptive transportation network	Make investments that improve flood resiliency	Consider the impacts of technology on system demand and performance
Performance Measures ↓	**Scenario Measure**	**Candidate Project Measure**												
(Change in) Reliability for cross-harbor trips [time and dollar value]	■	■							✓					
(Change in) Cross-harbor accessibility									✓	✓				
(Change in) Multimodal accessibility to jobs	■	■								✓				
(Change in) Accessibility index by mode	■	■								✓				
Performance of the transit-serving roadway network [i.e., average speed]	■	■								✓				
(Change in) Regional delay [total + spatial]	■	■									✓			
System reliability	■										✓			
Reliability cost savings		■									✓			
(Change in) User cost	■	■					✓				✓			
Bottlenecks on identified priority military routes		■	✓								✓			
Bottlenecks on identified evacuation routes (daily peak conditions)		■									✓			
Cost of forecasted crashes	■	■										✓		
Percent of trips by automated vehicles	■											✓		
(Change in) Percent of travel using facilities wth adaptive technologies [e.g., V2I, ITS]	■	■										✓		
Percent of growth near flood-prone areas	■							✓					✓	
(Change in) Transportation network impact from flood-prone conditions [e.g., delay, trip length, and/or circuity]	■	■						✓					✓	
Reliability enhancement from technology	■													✓
Induced trip demand from technology	■													✓