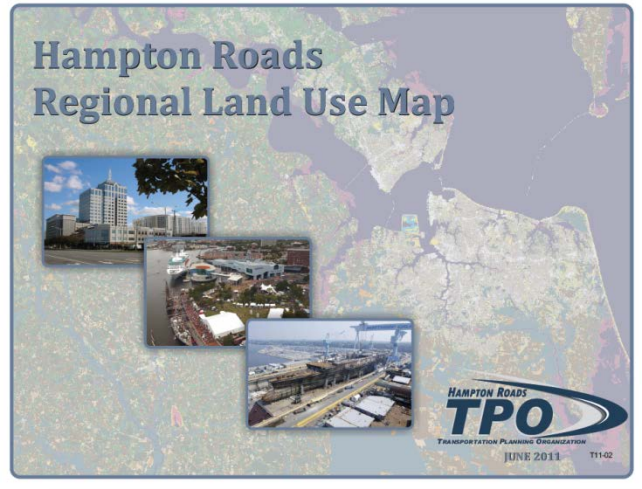
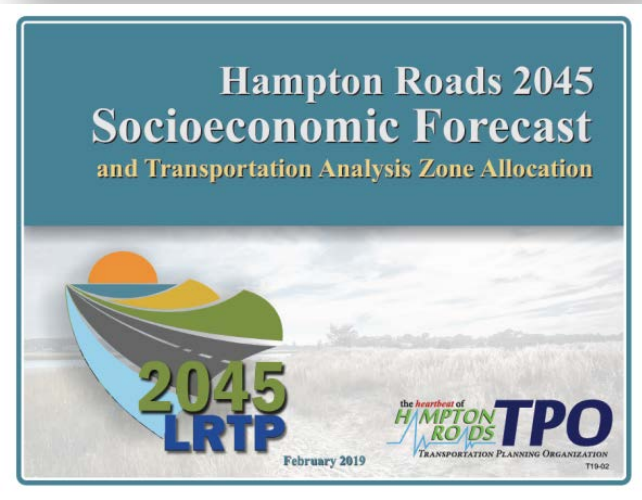
REGIONAL CONNECTORS STUDY

REGIONAL SCENARIO PLANNING FRAMEWORK

BUILDING REGIONAL PLACE TYPES

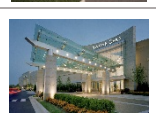
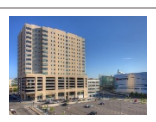
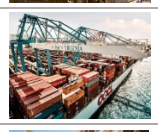
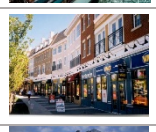
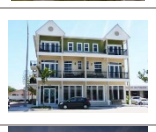
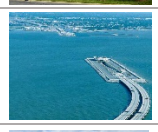
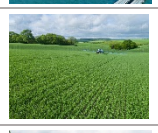
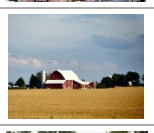
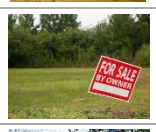
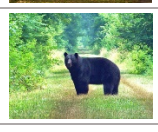
- Develop a unified set of Place Types that describe regional development patterns
  - Existing and Future Land Use (based on Locality Comprehensive Plans)
  - Quantitative, summarizing land use, developed areas, and environmental data
- Control Totals for reconciling Place Types densities
  - Approved 2015 and 2045 Transportation Analysis Zone (TAZ) Data





Regional Place Types

Part 1. Place Types for 2015 Virtual Present and 2045 Virtual Future[1]. Based on HRTPO Board approved Regional Minor Land Use codes.

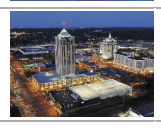
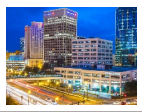
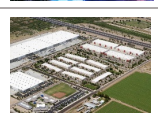
Code and Name[2]		Examples		DU/Acre Range	FAR Range	People / Acre[3]	Jobs / Acre	Description
RR	Rural Residential			0.1-.9	-	0.4-3	0	Very large lot single family homes in a rural context interspersed with some agricultural uses
RLD	Low Density Residential			1-3	-	4-10	0	Large lot single family homes in a low-density suburban context
RMD	Medium Density Residential			4-12	-	10-36	0	Attached homes and small lot single family homes in a moderate density suburban or urban context
RHD	High Density Residential			13+	-	37+	0	Multifamily apartments and condominiums in a high density urban or suburban context
CN	Neighborhood Commercial			-	.1-.3	-	5-10	Limited scale shopping, business, or trade activity
CL	Local Commercial			-	.1-.3	-	11-20	Inter-neighborhood shopping, business, or trade activity
CR	Regional Commercial			-	.4+	-	21+	Regional shopping, business, or trade activity
IL	Light Industrial			-	.05-.3	-	7-15	Light industrial uses (Research & Development, warehousing, service, etc.)
IH	Heavy Industrial			-	.05-.8	-	15+	Heavy industrial uses with possible adverse environmental impacts (manufacturing, etc.)
IPA	Port/Aviation Industrial			N/A	N/A	N/A	N/A	Port, General and Commercial Aviation related industrial operations
MCR	Mixed Use Comm/Res			4+	0.6+	10+	20+	Commercial/ residential mixed use activity
MCI	Mixed Use Comm/Ind			5+	0.6+	12+	30+	Commercial/ industrial mixed use activity
MM	Military			N/A	N/A	N/A	N/A	Military related facilities
IU	Utilities			-	-	-	1-3	Utility facilities
IP	Public/Semi-Public			-	-	5-10	30-60	Government/Educational/Religious/Social or healthcare facilities
IT	Transportation Network			-	-	-	-	Transportation facilities
AA	Agriculture			.01-.1	-	.03-.3	.03-.3	Agricultural operations
V	Vacant			-	-	-	-	Vacant developable lands
NP	Parks and Recreation			-	-	-	-	Open space and recreational uses
NC	Resource Conservation			-	-	-	-	Conservation lands
NH	Historic/ Cultural			-	0.1+	3-5	6-12	Historic Preservation / Cultural uses

[1] These are based on the existing and future land uses defined in the Hampton Roads Regional Land Use Map document from HRPDC/HRTPO. Updated 2016-2019.

[2] Note that all Place Types for the 2015 Virtual Present and 2045 Future are assumed to be single land uses (except for the Mixed-Use ones) and 1-acre in size.

[3] Population and employment density/intensities were developed by sampling place types in localities throughout the region and averaging the results but are expressed in a range of densities and intensities.

Part 2. New Place Types for the Greater Growth Alternative Scenarios [4,5]

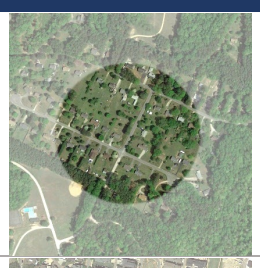
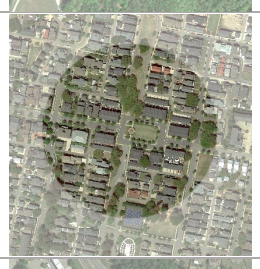
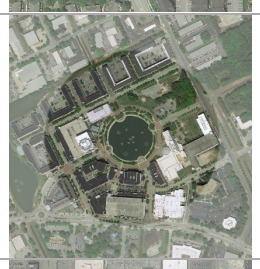
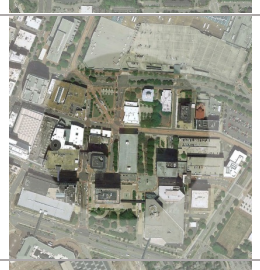
Code and Name		Examples	Size[6]	DU/Acre	FAR	People / Acre	Jobs / Acre	Description
RC	Rural Cluster	 	25 ac.	.1-.5	-	.3-1.3	0-.1	Small cluster housing development surrounded by undeveloped rural lands
CN	Compact Neighborhood	 	16 ac.	3-5	.1-.3	8-13	0-.3	Mixed housing neighborhood with small lot singles and attached housing around community amenities
BR	Boulevard Residential	 	9 ac.	15-30	.3-1.0	40-80	5-20	High density multifamily developments along major arterials designed to front on walkable streetscapes
BC	Boulevard Commercial	 	9 ac.	-	.3-2.0	-	14-90	Mixed retail, office and mixed use along major arterials designed to front on walkable streetscapes
STC	Suburban Town Center	 	49 ac.	15-30	.3-2.0	40-80	14-90	High density walkable mixed-use center in a suburban context
UTC	Urban Town Center	 	49 ac.	20+	.4+	30+	50+	Very high density walkable mixed-use center in an urban context
TOC	Transit Oriented Center	 	25 ac.	40+	1.0+	100+	100+	High density mixed use urban center with walkable access to premium transit station
RIC	Regional Industrial Center	 	100 ac.	-	.1-.4	-	5+	Large site industrial center with regional market
PI	Port Industrial	 	100 ac.	-	.1-.3	-	5+	Port related industrial development

[4] Place Types for the Greater Growth Scenarios will be used to allocate growth in addition to the 2045 Baseline scenario. Note that the same Place Types for 2015 and 2045 can be used to allocate growth beyond 2045. However, the Greater Growth Place Types were developed as additional ones to reflect potential new community types in the Greater Growth Scenarios.

[5] The Greater Growth Place Types will need to relate to the Greater Growth Alternative Scenarios, and they may be modified or adjusted to ensure that they fit the economic narratives and drivers for each of these alternative scenarios.

[6] Note that Place Types for the Greater Growth Scenarios are larger than the 1-acre land use types used for the Virtual Present and Future. They are composite community types or small neighborhoods often with a mixture of uses that describe potential future communities.

Part 3. Potential Examples of the New Place Types for the Greater Growth Alternative Scenarios[7]

Code and Name		Location	Aerial
RC	Rural Cluster	Belmont Drive, Toano	
CN	Compact Neighborhood	East Beach, Norfolk	
BR	Boulevard Residential	Jefferson Estates, Jefferson Ave. Newport News	
BC	Boulevard Commercial	Columbus St.& Constitution Dr. Virginia Beach	
STC	Suburban Town Center	Oyster Point City Center, Newport News	
UTC	Urban Town Center	Virginia Beach Town Center	
TOC	Transit Oriented Center	Downtown Norfolk	
RIC	Regional Industrial Center	Newport News Shipbuilding	
PI	Port Industrial	Port of Virginia, Norfolk	

[7] These represent existing places throughout the region that are potential examples that are similar to these new Place Types. They are not meant to be exact depictions of the new Place Types but general representations of density/intensity and land use mix. Detailed visualizations and quantitative summaries will be prepared for these new Place Types once they are affirmed.

SCENARIOS: SPATIAL THEMES

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?

SCENARIO NARRATIVES

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.

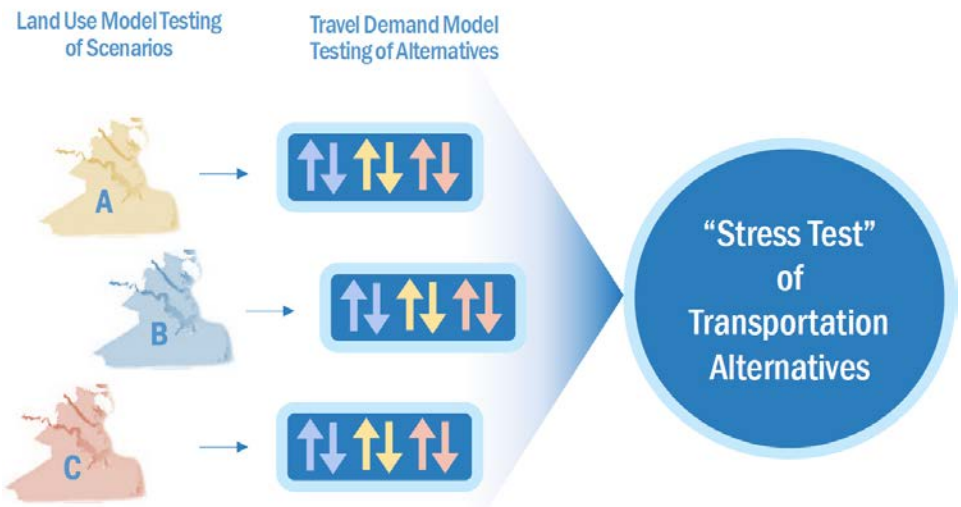
Test more urban and multimodal travel patterns.

Test more overall regional travel.

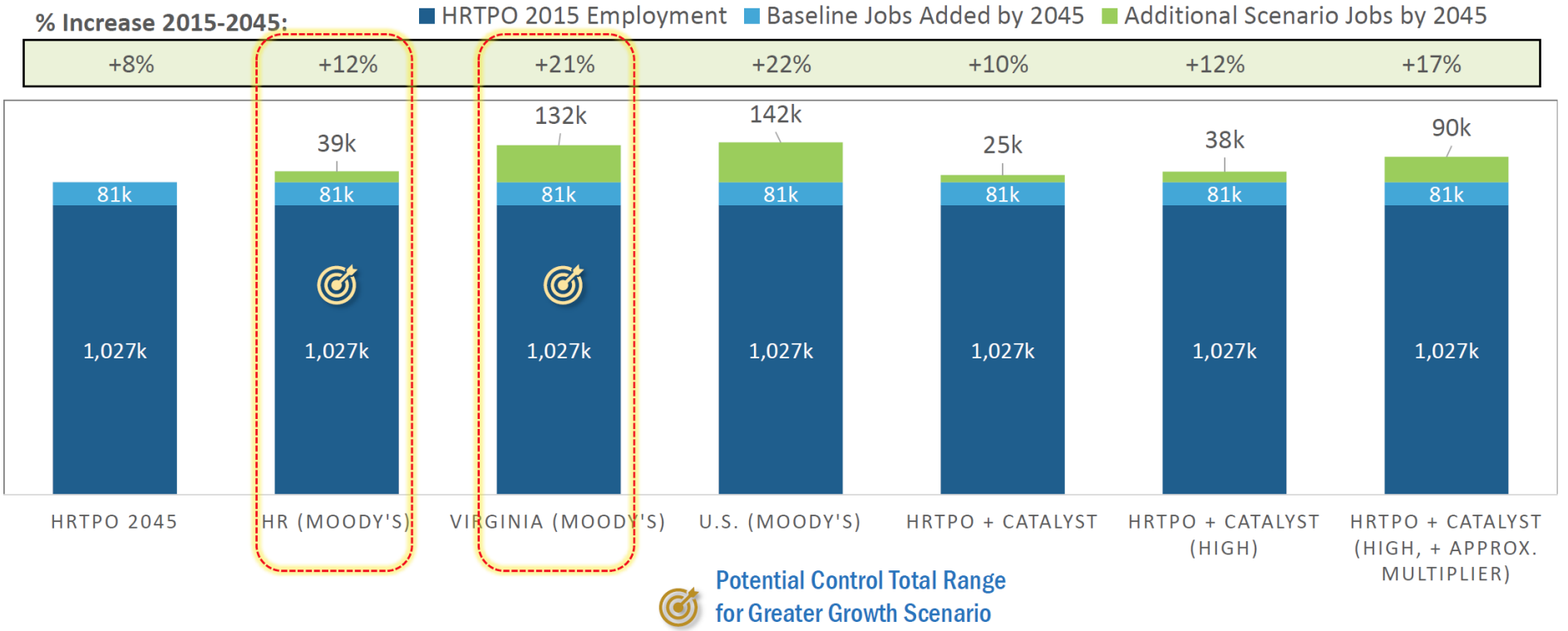
NOTE: Sea Level Rise assumed as 3 ft. in all Scenarios

GREATER GROWTH CONTROL TOTALS

- Establish a Control Total for the "Greater Growth" Alternate Scenarios
- These will look at employment growth in addition to the 2045 Baseline of growth
- The purpose is not to try to predict what may happen in the future
- The purpose is to establish a threshold of additional growth against which to stress test the transportation alternatives

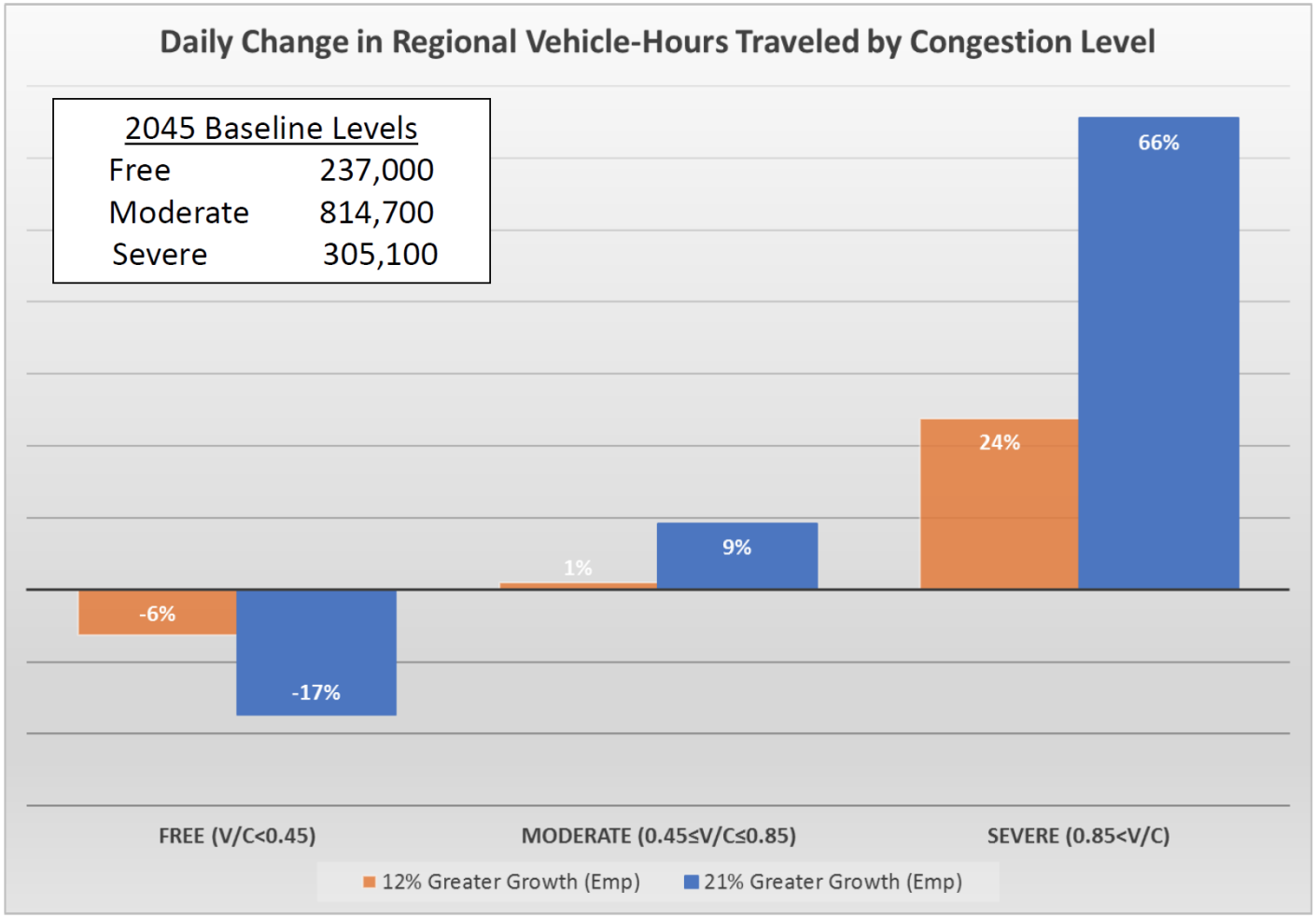


REGIONAL EMPLOYMENT ADDED BY 2045

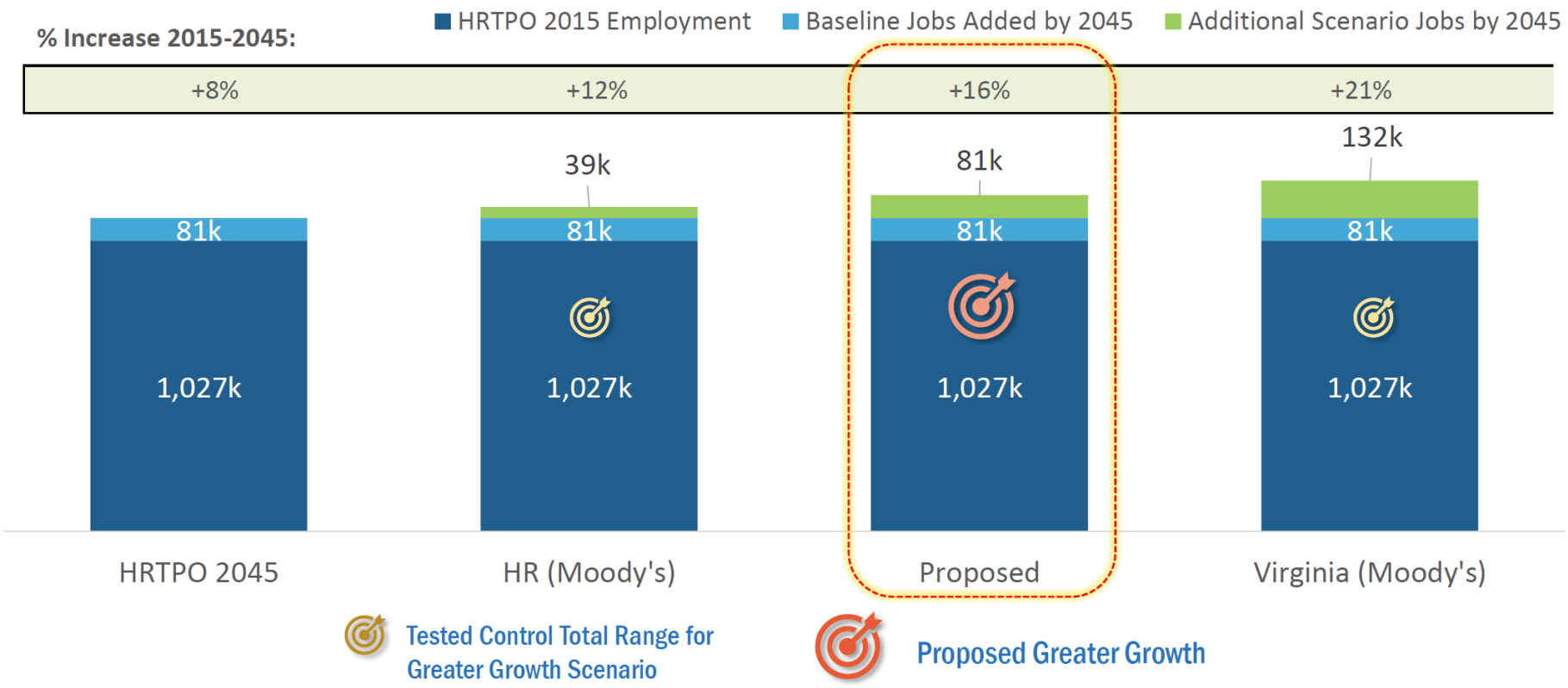


Travel Model Sensitivity Testing –

Alternative control totals for greater employment growth



REGIONAL EMPLOYMENT ADDED BY 2045



GREATER GROWTH CONTROL TOTAL SUMMARY

- 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 + Committed 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

GREATER GROWTH CONTROL TOTAL SUMMARY

- 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)
- Also, there is potential for further adjustment if this level of growth does not move the needle as expected on the Greater Growth scenario runs