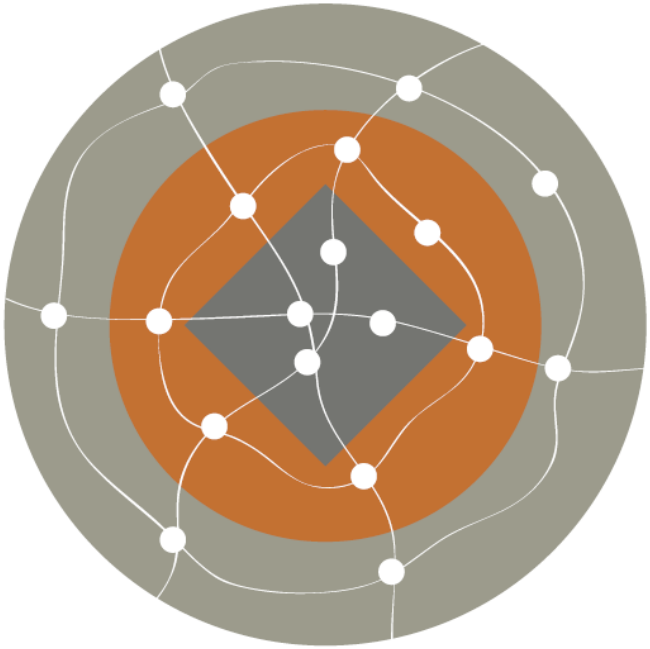
Item 10

TPB CLRP Aspirations Scenario

2012 CLRP and Version 2.3
Travel Forecasting Model
Update

Initial Results



Ron Kirby
Department of Transportation Planning

Presentation to the Transportation Planning Board
April 17, 2013

Scenario Planning

- Updated planning assumptions and new modeling tools, most notably the Version 2.3 Travel Forecasting Model, are now available for scenario analysis
- The CLRP Aspirations Scenario, last presented to the TPB in October 2011, has been updated
- The updated work allows for the testing of variations on the CLRP Aspirations Scenario

What's New?

	October 2011	April 2013
Constrained Long-Range Plan	2008	2012
Cooperative Forecast	7.2	8.1
Horizon Year	2030	2040
Travel Forecasting Model	Version 2.2	Version 2.3
TAZ System	2191	3722
Emissions Model	Mobile 6.2	MOVES2010a

Version 2.3 Model

- Developed with the latest travel survey data available
- Developed using a more detailed zone system
- Several technical refinements have also been made…
  - Greater specificity of travel markets by trip purpose and by time of day
  - More detailed treatment of travel with regard to individual transit modes and non-motorized (walking and bicycle) modes

What is the CLRP Aspirations Scenario?

- Developed under the TPB Scenario Study Task Force based on financially constrained long range plan (CLRP) adopted by the TPB in 2008
- Included strategies explored in previous scenario studies such as the Regional Mobility and Accessibility Study and the Value Pricing Study
- Scenario should be “within reach” both financially and administratively, while pushing the envelope in terms of improving conditions in relation to a CLRP baseline

CLRP Aspirations Scenario Timeline

- September 2010: First results presented to the TPB
- October 2011: “Streamlined” Variably Priced Lane Network Sensitivity Test Presented to the TPB
- April 2013: Presentation of updated analysis using the latest planning assumptions and modeling tools, and reflecting MAP-21 legislation

Section 1512 “Tolling” of MAP-21

- Allows for “initial construction of 1 or more lanes…that increase the capacity of a highway…if the number of toll-free non-HOV lanes, excluding auxiliary lanes, is not less than the number of toll-free non-HOV lanes, excluding auxiliary lanes, before such construction”

Growth between 2015 and 2040

Round 8.1 Cooperative Forecasts; 2012 CLRP

Households	26%
Population	23%
Employment	32%
Vehicle Miles Traveled (VMT)	24%
VMT per Capita	0.8%
Average Trip Length	1.2%
Auto Person Trips	23%
Transit Trips	26%
Non-Motorized Trips	35%
Vehicle-hours of Delay	98%

CLRP Aspirations Scenario

Land Use Shifts

- Concentrating projected growth in activity centers and existing/planned transit stations
- Consistent review and refinement by planning directors

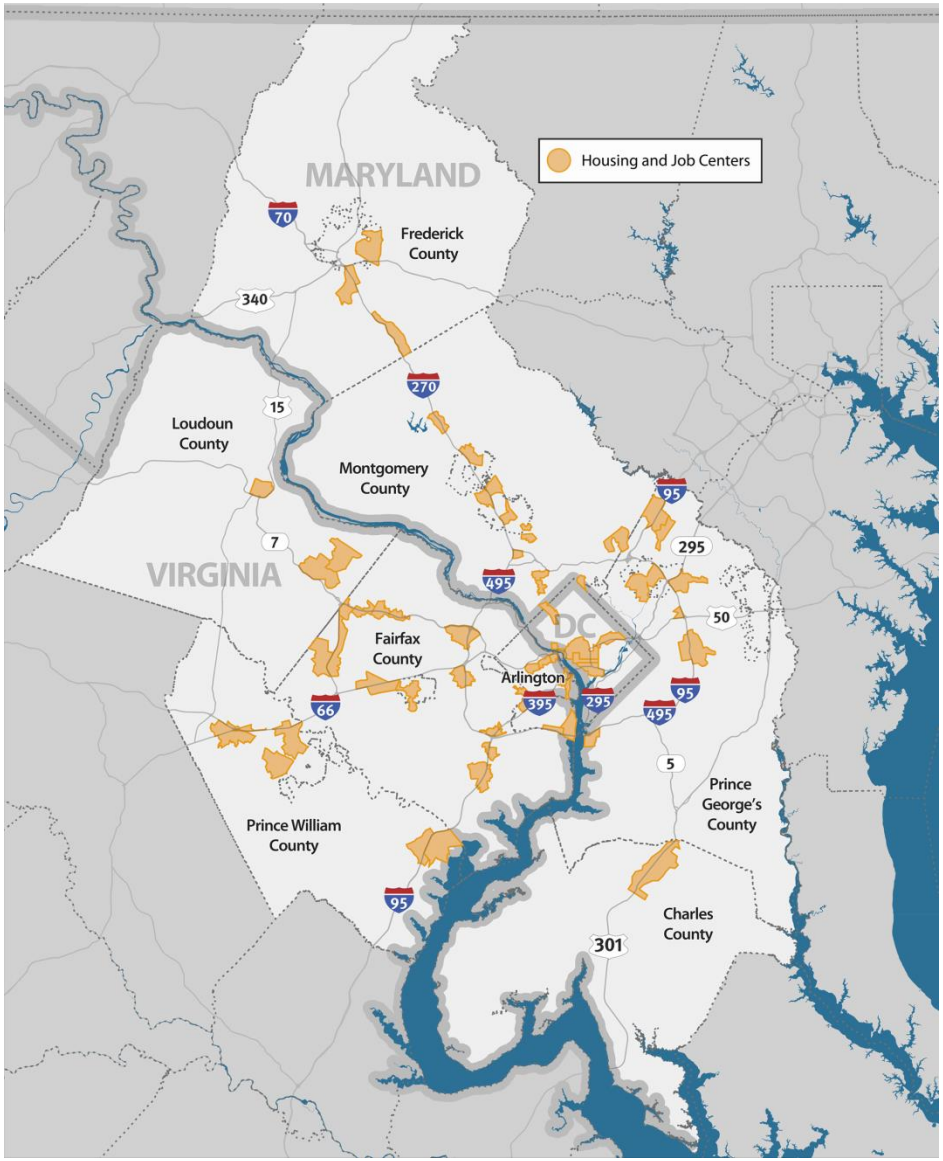
Regional VPL Network

- Address congestion through pricing of 740 new lane miles and 186 existing lane miles
- Provide alternatives through enhanced transit

Supportive Transit

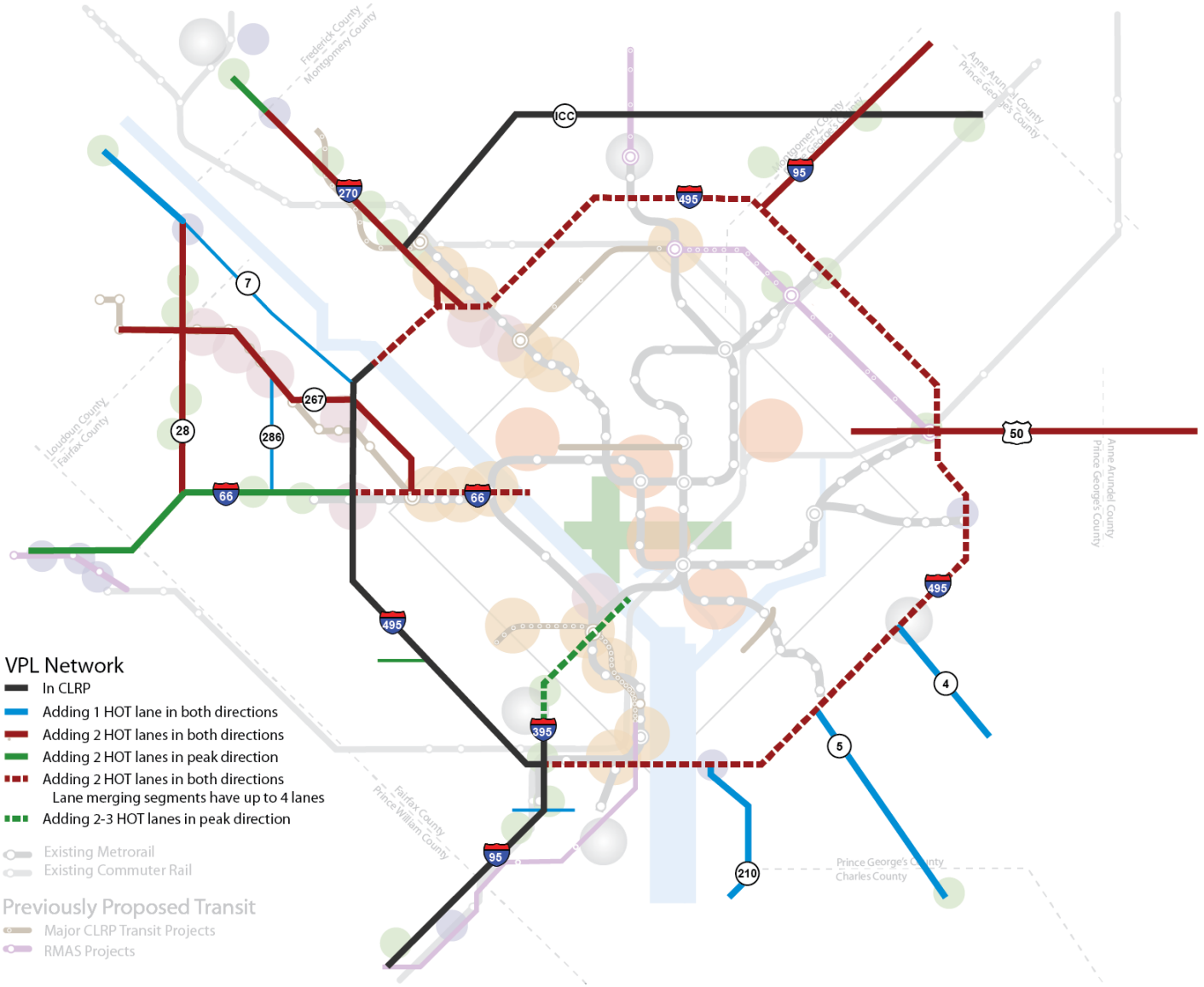
- Use menu of transit options from past scenarios
- Connect activity centers
- Bus Rapid Transit (BRT) and circulator service with 274 new buses and approximately a 20% increase in service hours

Land Use Shifts

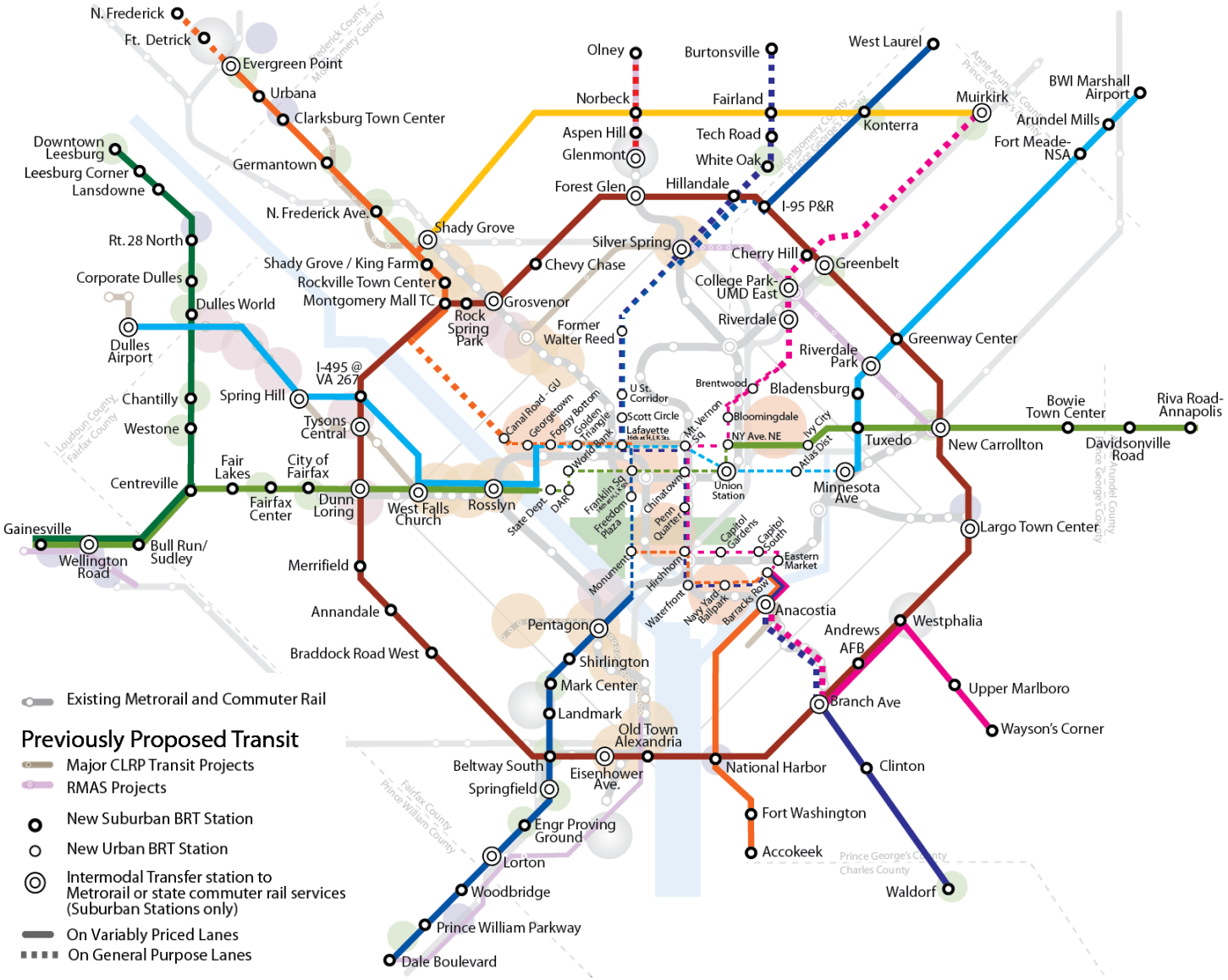


- Jobs and households are shifted within the region into targeted growth areas (TGA)
- Additional jobs (0.6%) and households (2.6%) are brought into the region
- Round 8.1 Cooperative Forecast: from 2015 – 2040, 25% of new households and 35% of new jobs are located in TGAs
- CLRP Aspirations: from 2015 – 2040, 57% of new households and 58% of new jobs are located in TGAs

Variably Priced Lane Network



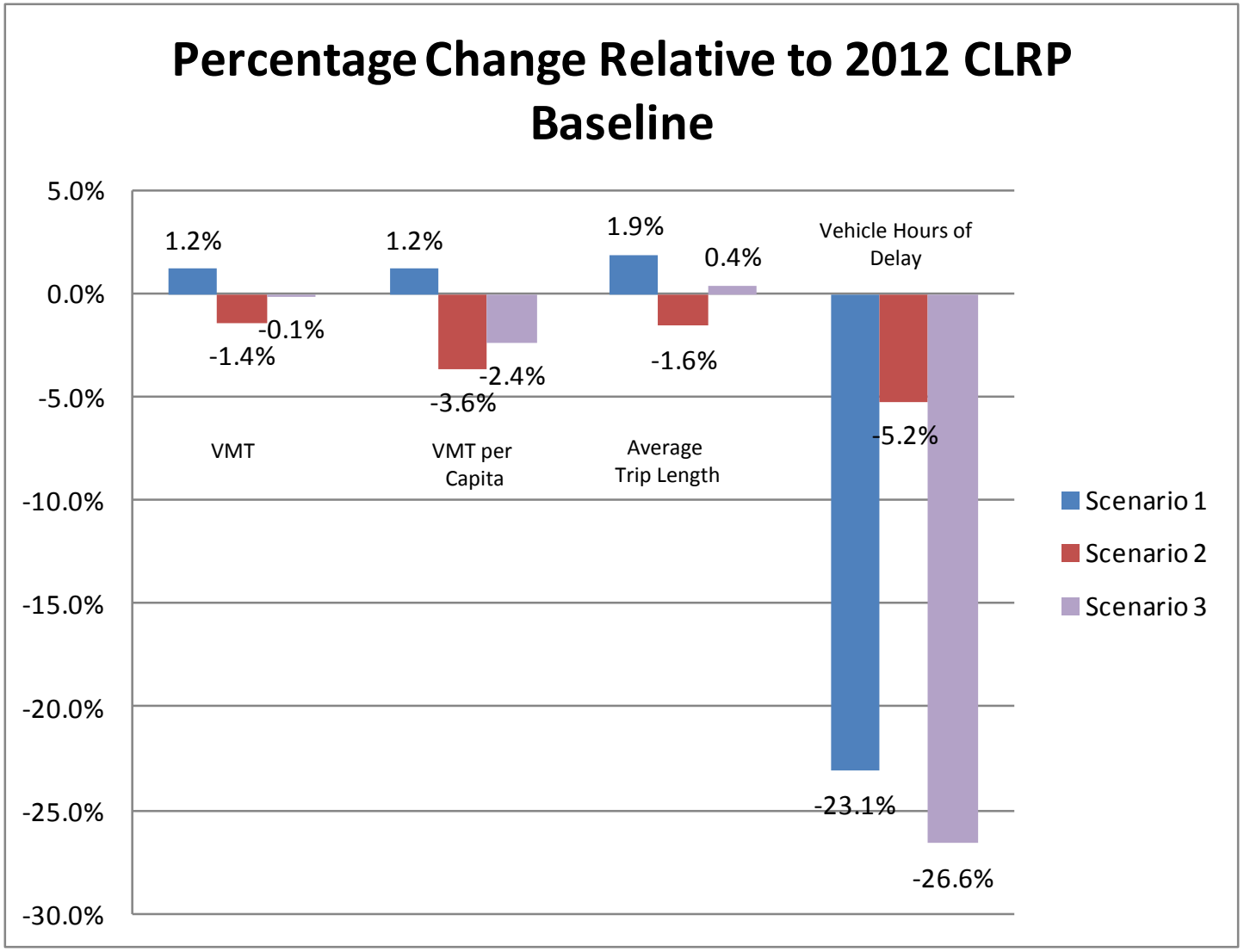
Bus Rapid Transit Network



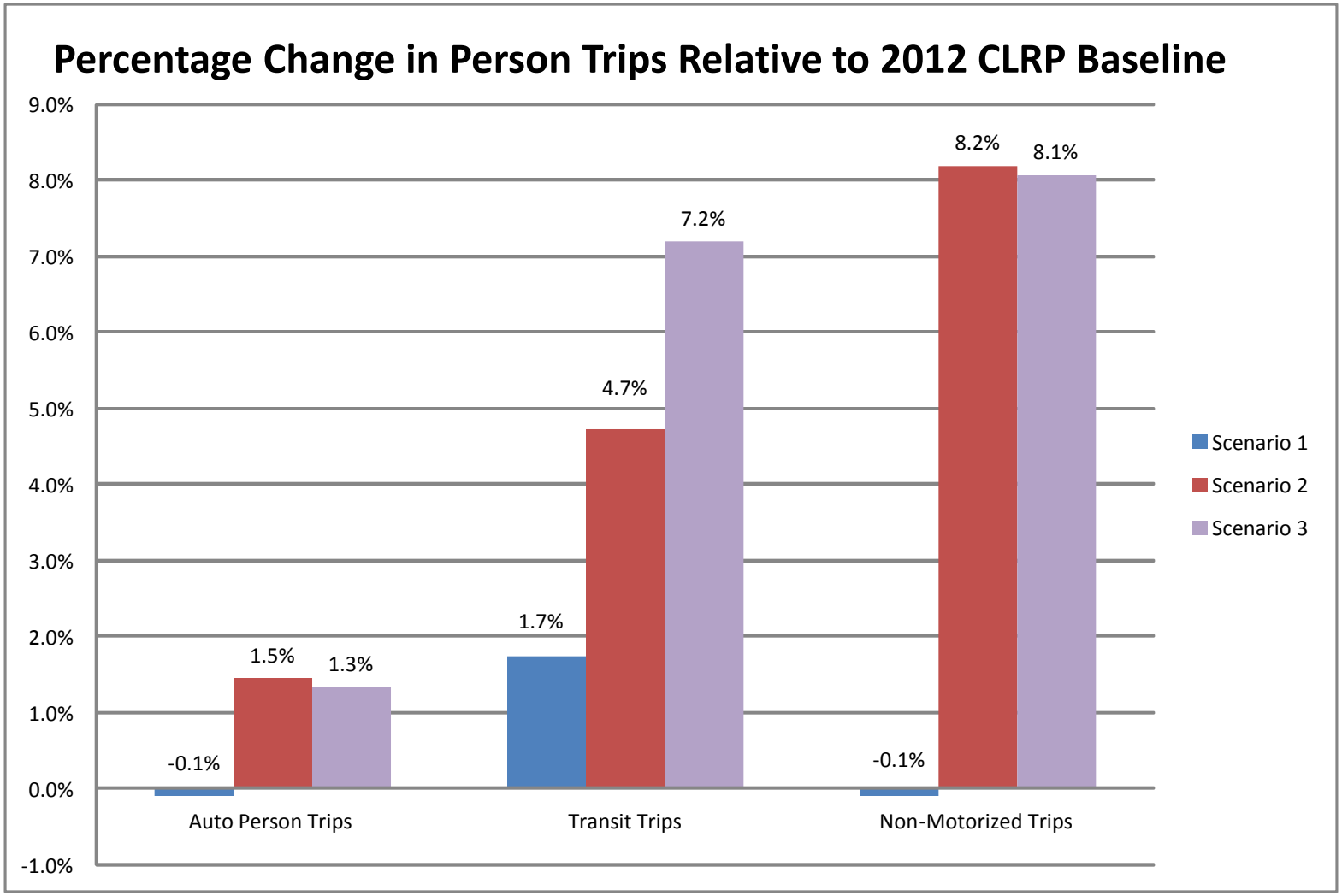
Three Scenarios

	Land Use	Transportation
2040 Baseline	Round 8.1 Cooperative Forecast	2012 CLRP
Scenario 1: Transportation Component-only	Round 8.1 Cooperative Forecast	CLRP Aspirations
Scenario 2: Land use Component-only	CLRP Aspirations	2012 CLRP
Scenario 3: CLRP Aspirations Scenario	CLRP Aspirations	CLRP Aspirations

Regional Travel



Regional Mode Choice



Regional Transit Mode Share

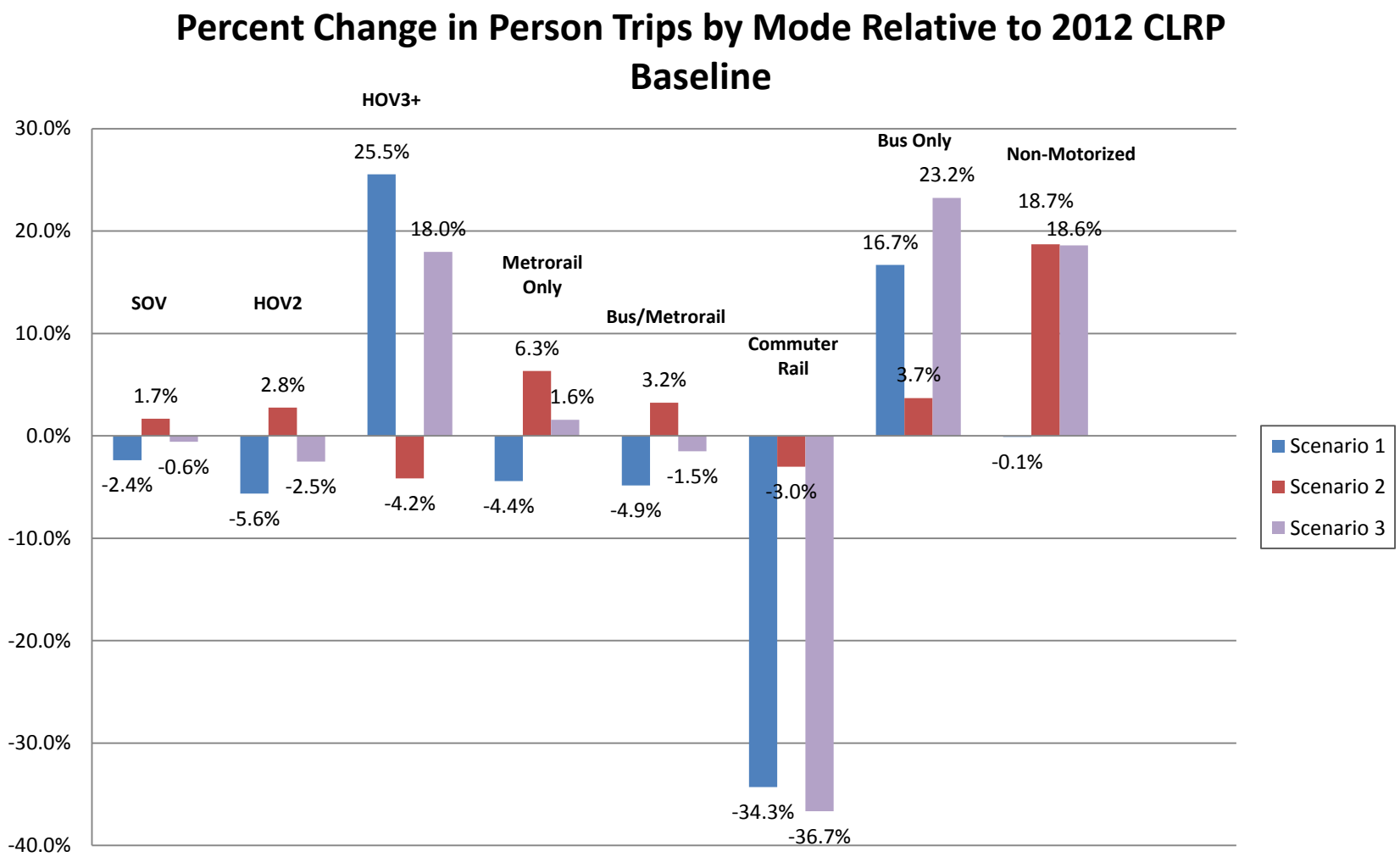
To address the lack of identified funding for WMATA's future rehabilitation and maintenance needs beyond 2020, transit ridership to or through the core area was constrained to 2020 levels for both the CLRP and the three scenarios.

Percent Transit Mode Share

		Baseline	Scenario 1	Scenario 2	Scenario 3
Home-based Work	Constrained	20.4%	20.4%	20.8%	21.0%
	Unconstrained	21.0%	20.6%	21.6%	21.3%
All Trip Purposes	Constrained	6.0%	6.1%	6.1%	6.3%
	Unconstrained	6.1%	6.1%	6.3%	6.4%

The increases from the constrained to the unconstrained transit mode shares would be more pronounced in the core and inner suburbs served by Metrorail.

Commuter Mode Choice



Air Quality

Change in Emissions Relative to 2015 Forecasted with MOVES2010a

		2040			
	2015	Baseline	Scenario 1	Scenario 2	Scenario 3
Precursor NOx*	49330 tons/year	-46.2%	-45.6%	-46.0%	-45.3%
PM2.5*	2002 tons/year	-33.1%	-33.7%	-33.2%	-33.7%
VOC**	60.1 tons/day	-22.2%	-22.5%	-22.2%	-22.5%
NOx**	138.2 tons/day	-47.7%	-47.4%	-47.6%	-47.1%

* Forecasted for the PM2.5 Non-Attainment Area

** Forecasted for the 8-Hour Ozone Non-Attainment Area

Financial Analysis

- Sketch-level analysis of Scenarios 1 and 3 show revenue to cost ratios of 0.40 and 0.38, respectively
- Results presented in October 2011 showed much higher revenue to cost ratios. Removing tolls on existing general purpose lanes, most notably the parkways, significantly reduced the revenue from the VPL network.

What's Next?

- Update of CLRP Aspirations Scenario Study will allow for future analysis of
  - Variations on land use and VPL network
  - Analysis of smaller geographies, such as subareas or corridors