

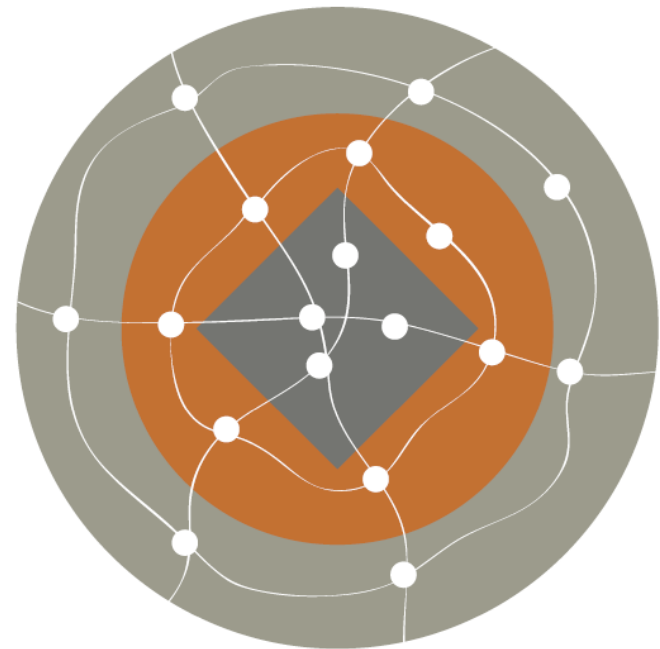
TPB CLRP Aspirations Scenario

Streamlined Variably Priced Lane Network Sensitivity Test

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Department of Transportation Planning

Presentation to the MWAQC TAC
November 8, 2011



CLRP Aspirations Scenario



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

- 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 fiscally and administratively, while pushing the envelope in terms of improving conditions in relation to a 2030 baseline

CLRP Aspirations Scenario



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

- Results presented to the TPB in September 2010
- Performance compared to a 2030 Baseline (2008 CLRP + Round 7.2 Land Use) for TPB modeled area
- Land Use Only Sensitivity Test
 - Tested CLRP Aspirations land use shifts with adopted CLRP highway and transit projects

CLRP Aspirations Scenario



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

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 959 new lane miles and 781 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) service with 382 new buses and approximately a 20% increase in service hours

Land Use Shifts – Targeted Growth Areas



Background

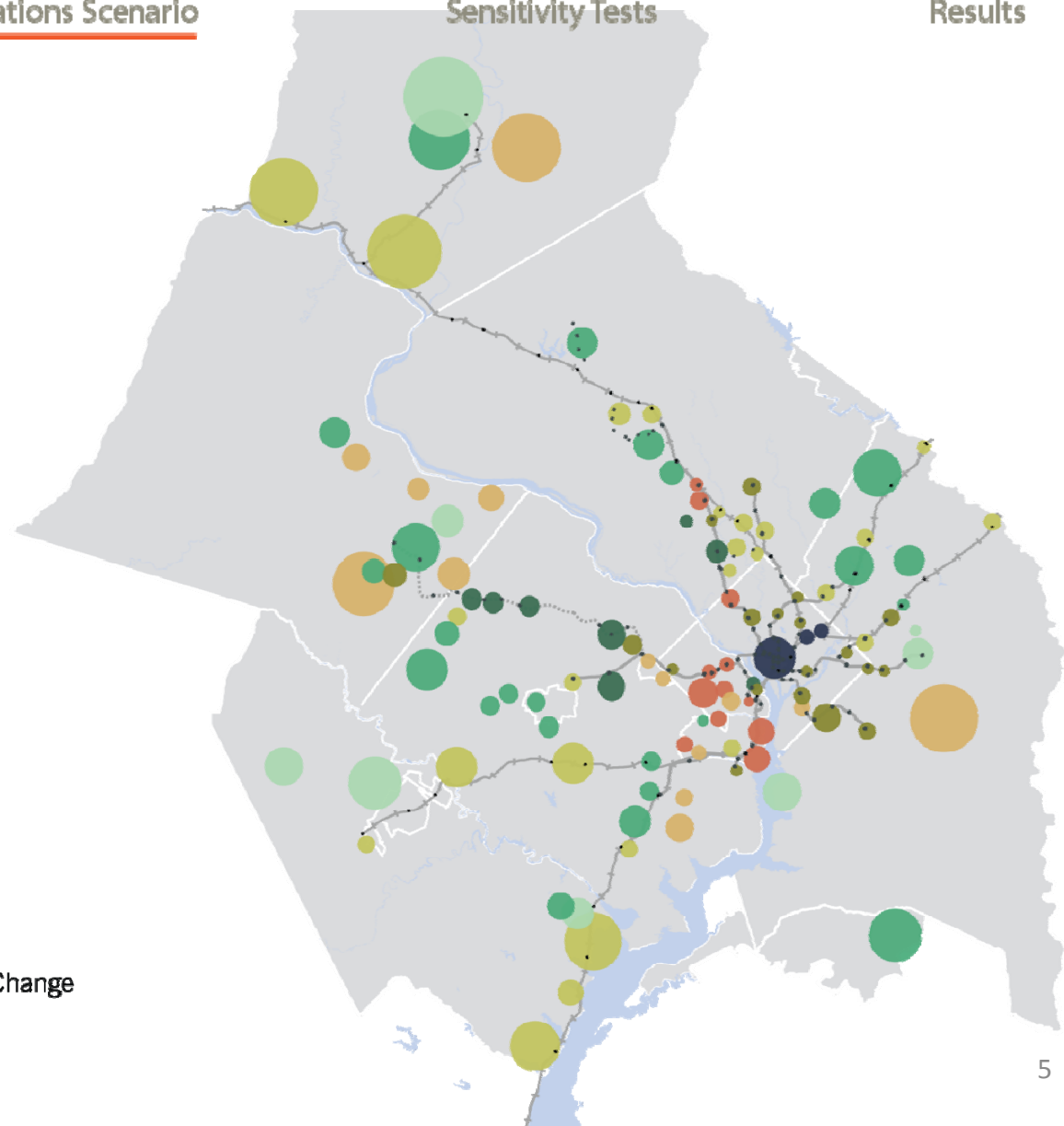
CLRP Aspirations Scenario

Sensitivity Tests

Results

Types of Growth Areas, Density Goals, and Jobs/Housing Balance Goals

- DC Core**
32 jobs and 20 du/acre
3 jobs/household
- Mixed Use Center**
20-32 jobs and 10-20 du/acre
2 jobs/household
- Employment Center**
14 jobs and 7 du/acre
2 jobs/household
- Suburban Employment Center**
10 jobs and 5 du/acre
2 jobs/household
- Emerging Employment Center**
5 jobs and 3 du/acre
1.6 jobs/household
- MetroRail or Transitway Station Area**
10 jobs and 5 du/acre
2 jobs/household
- Commuter Rail Station Area**
3 jobs and 2 du/acre
1.5 jobs/household
- Locally Requested Center or Area of No Change**
Goals vary according to specific local staff input.



Land Use Shifts – Summary



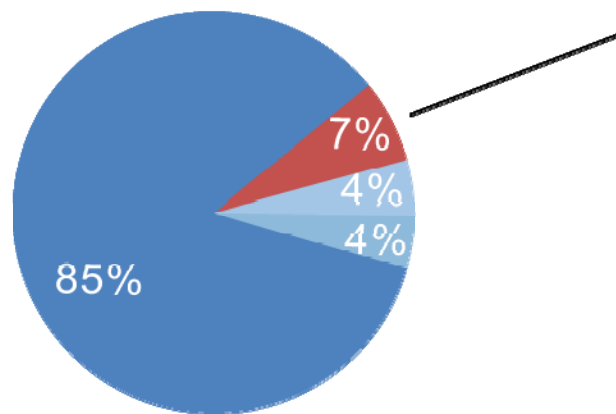
Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

How much did we shift?



7%
of the 2030 jobs
and households
was shifted

15% of 2030 jobs & households is 2015-2030 growth
4% of forecast growth already in “Targeted Growth Areas”
4% of “movable” growth not shifted

Also added growth from outside the region

3.5%
increase in
households

and

1%
increase in
jobs

Network of Variably Priced Lanes

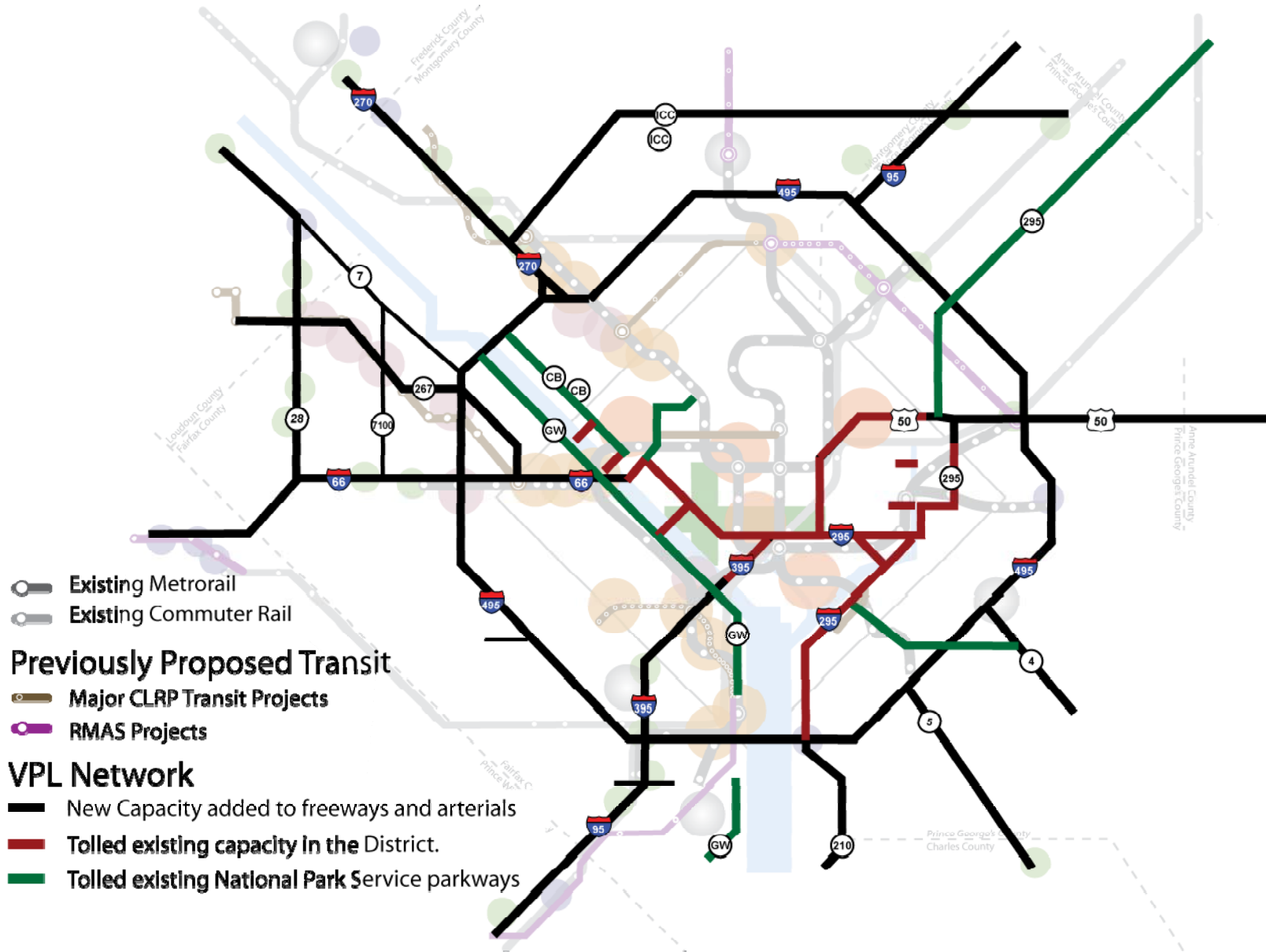


Background

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Regional Bus Rapid Transit Network

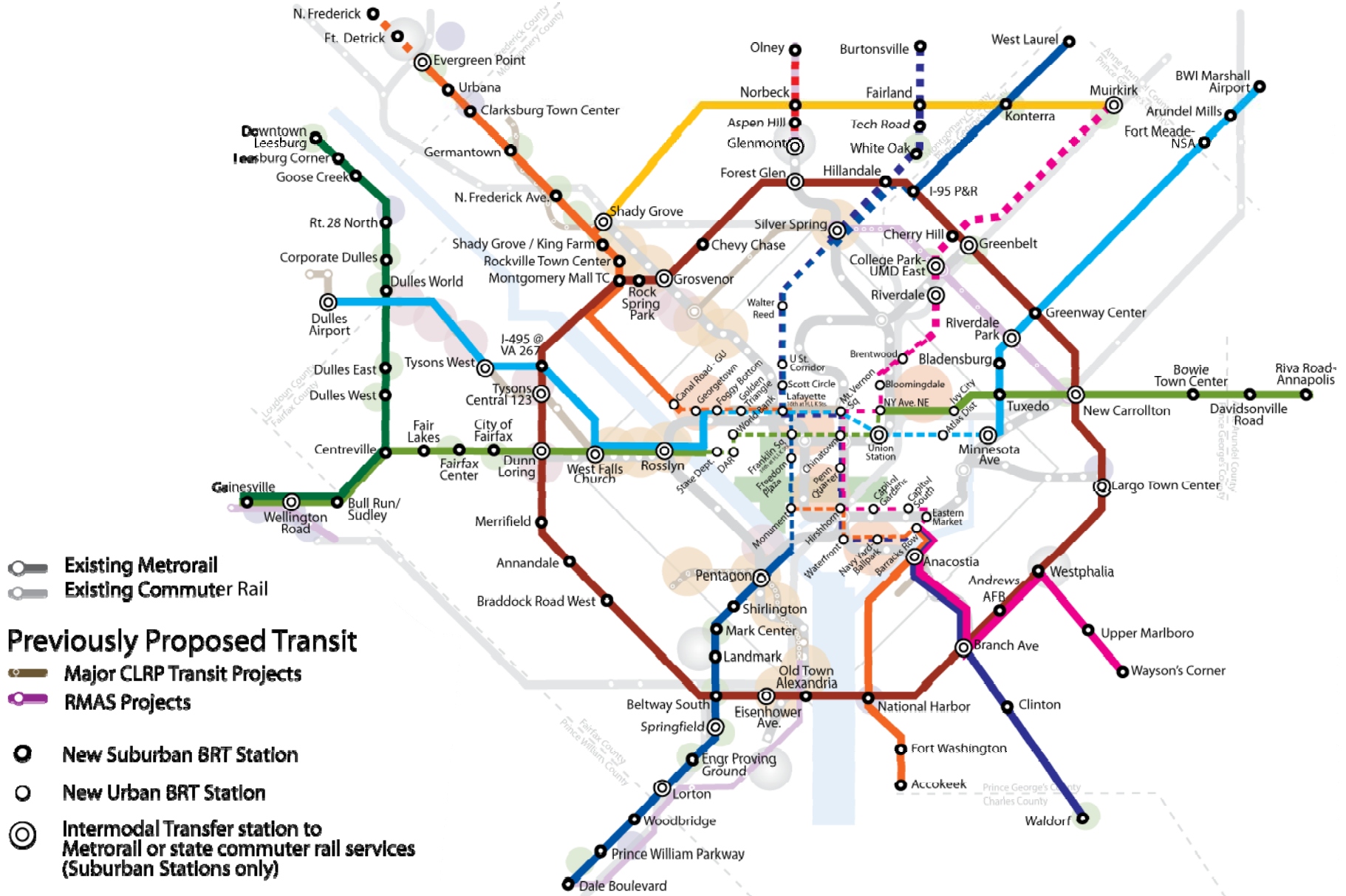


Background

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Sensitivity Tests

Results



Full CLRP Aspirations Scenario



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

Relative to the 2008 CLRP Baseline for 2030:

- Regional vehicle hours of delay (VHD) decrease by 11.9 percent while vehicle miles of travel (VMT) increase by 3.1 percent
- Non-motorized trips increase by 16.3 percent, transit trips increase by 13.9 percent, and HOV trips more than double
- Revenues cover about 80 percent of the costs

Land Use Only Sensitivity Test



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

Relative to the 2008 CLRP Baseline for 2030:

- Regional vehicle hours of delay (VHD) increase by one percent, while regional vehicle miles traveled (VMT) decrease by 0.5 percent
 - VHD and VMT increase in the inner jurisdictions by 6.2 percent and 1.4 percent, respectively
- Non-motorized trips increase by 16.5 percent, transit trips increase by 10.5 percent, and HOV trips decrease by 2.4 percent
 - Over 60 percent of new transit trips are intra-jurisdictional

Why a New Sensitivity Test?



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

Respond to TPB concerns about the cost and extent of the variably priced lane network by “streamlining” the network to:

- (1) reduce the number of new lane miles and interchanges, and
- (2) make the scenario financially “within reach.”

Streamlined VPL Network Sensitivity Test



Background

CLRP Aspirations Scenario

Sensitivity Tests

Results

- Used CLRP Aspirations land use and transit
- Reduced new lane construction by 30% using volume-to-capacity ratios from full scenario model results, and studies such as the I-270 Multi-modal Corridor Study, the West Side Mobility Study, and the Capital Beltway Study
- Reduced interchange construction by 33% by focusing on connections to Activity Centers

Comparison to 2030 Baseline

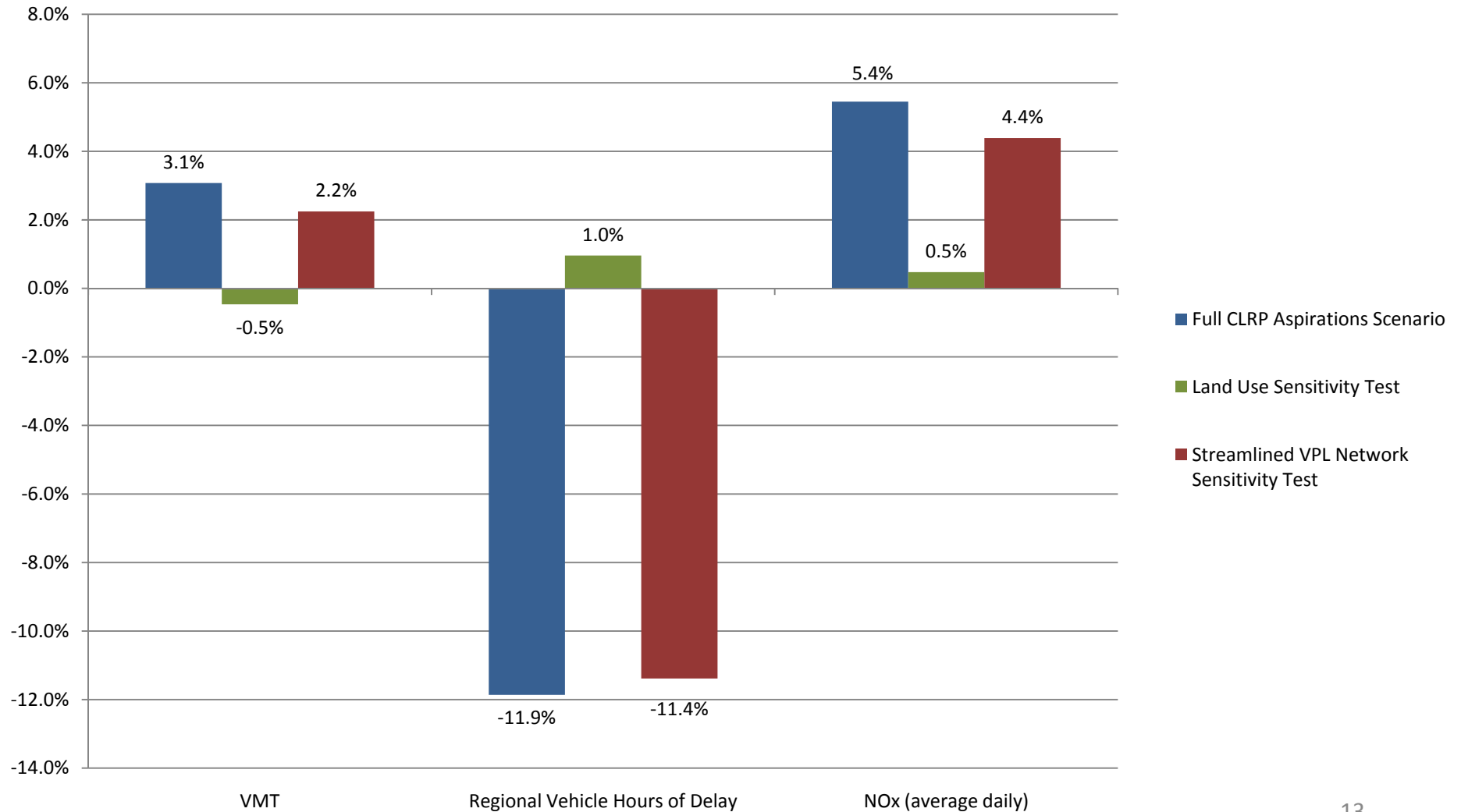


Background

CLRP Aspirations Scenario

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Comparison to 2030 Baseline

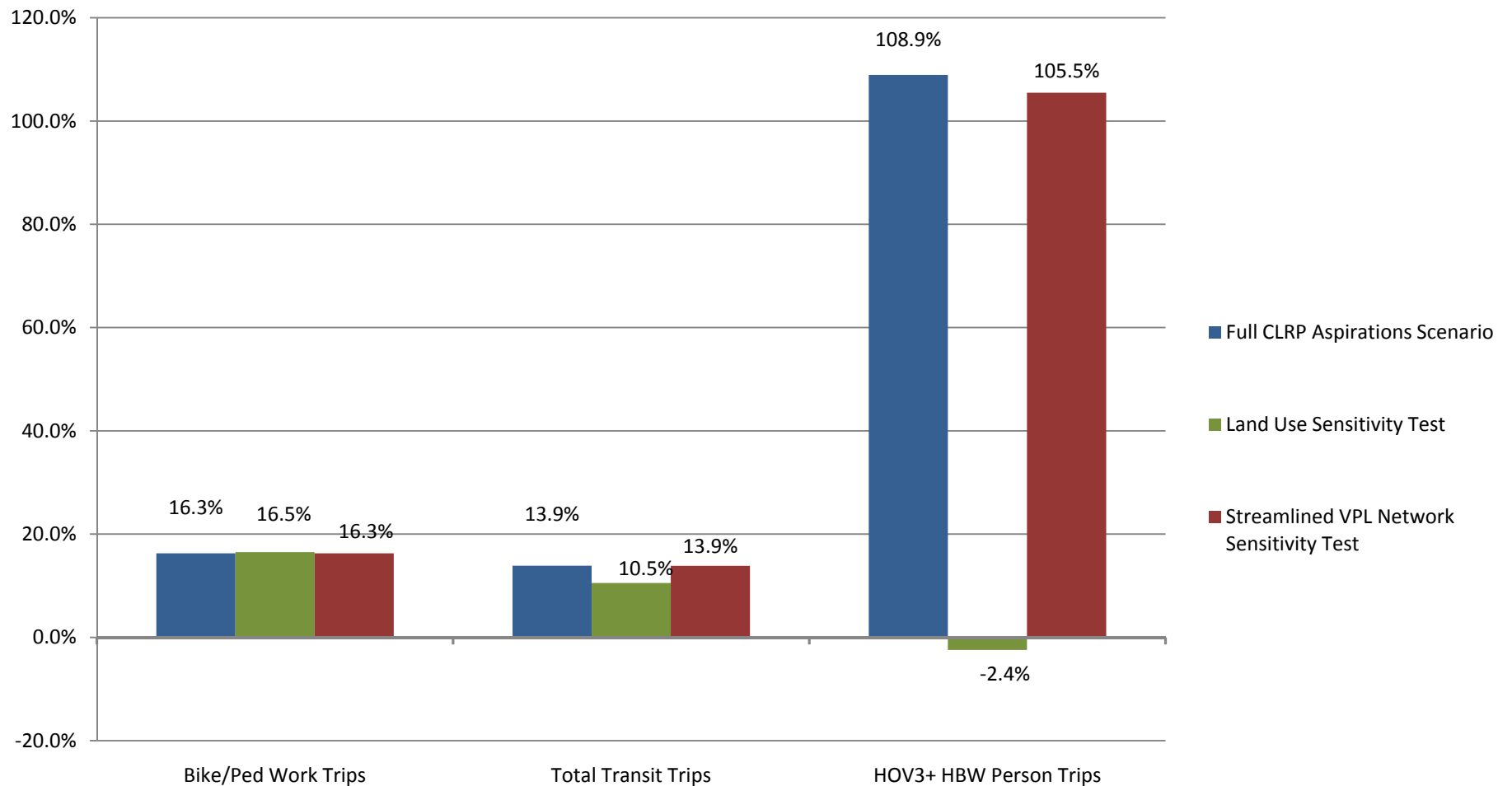


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CLRP Aspirations Scenario

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Projected Changes 2009 - 2030

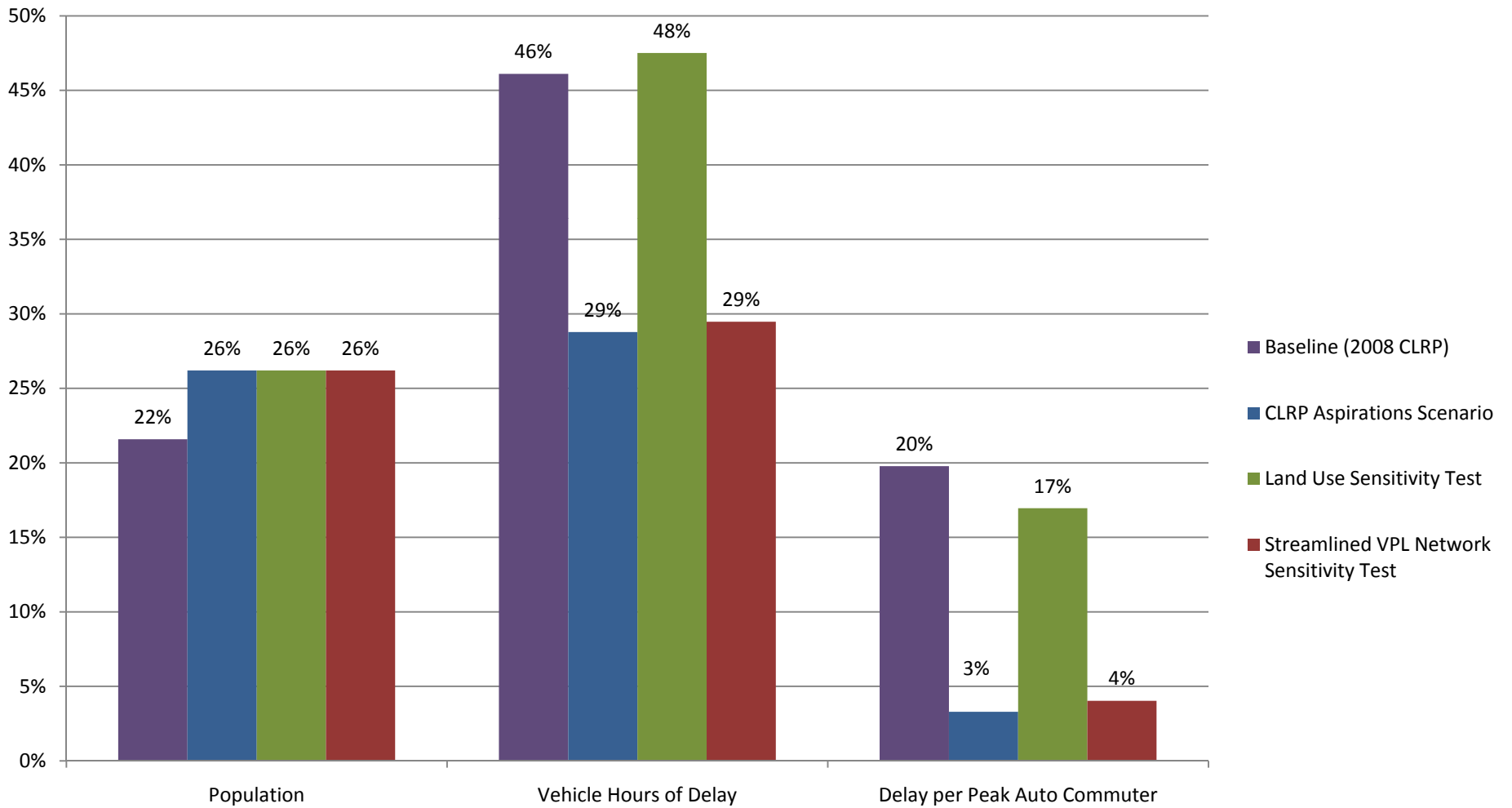


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Projected Changes 2009 - 2030

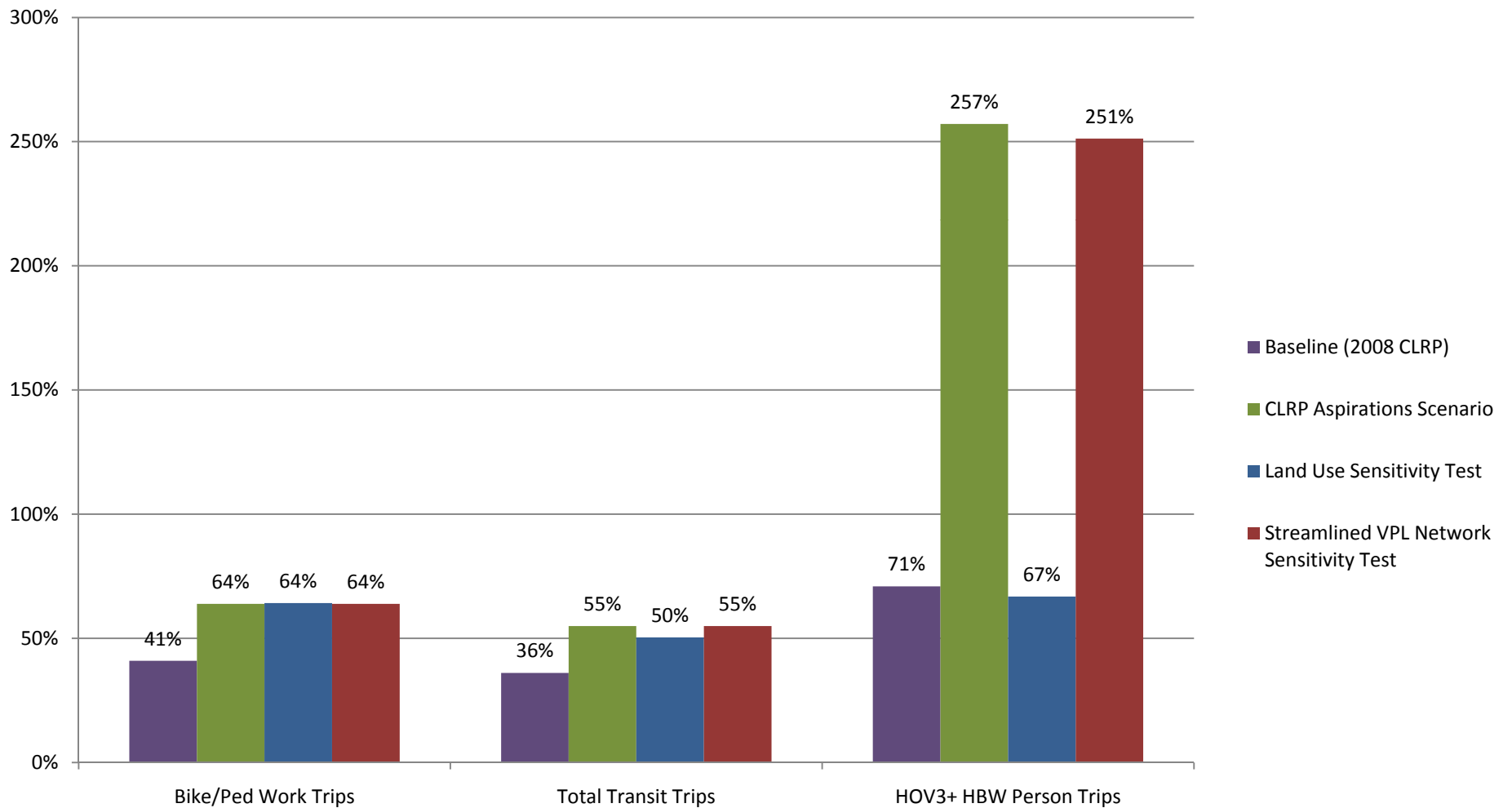


Background

CLRP Aspirations Scenario

Sensitivity Tests

Results



Home Based Work Mode Share

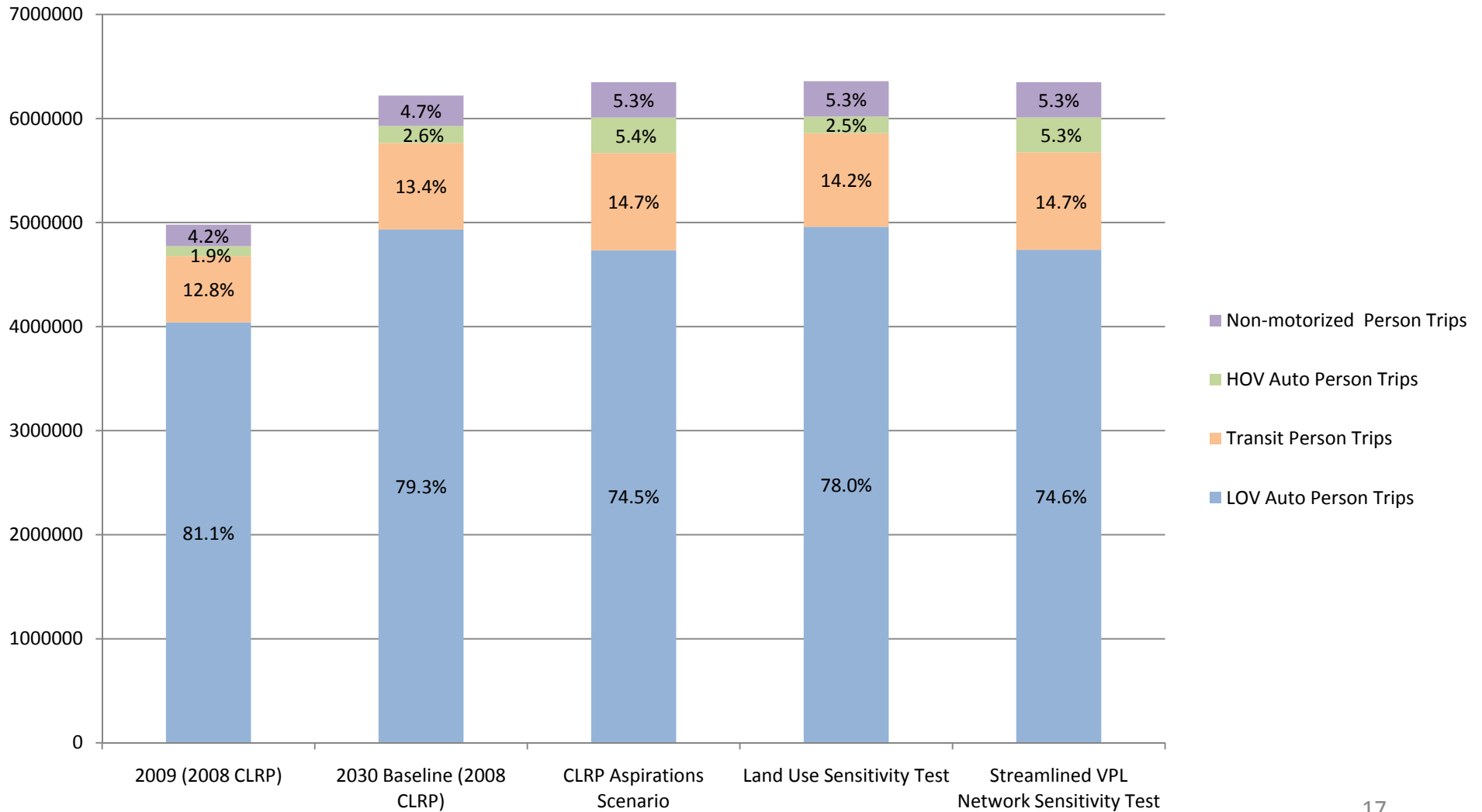


Background

CLRP Aspirations Scenario

Sensitivity Tests

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Streamlined VPL Network Sensitivity Test



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Relative to Full CLRP Aspirations Scenario:

- Slightly lower reductions in vehicle hours of delay (VHD). Slightly lower increase in vehicle miles traveled (VMT).
- Same increases in non-motorized and transit trips. Slightly lower increase in HOV trips.
- Financially feasible in that toll revenues cover highway and transit costs, both capital and operating.

Next Steps

Background

CLRP Aspirations Scenario

Sensitivity Tests



- Version 2.3 Travel Forecasting Model
- 2040 Horizon Year
- Benefit Cost Analysis