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TPB SCENARIO STUDY

CLRP Aspirations Scenario
Preliminary Results

Michael Eichler
Department of Transportation Planning

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The Two Scenarios

What Would it Take?	CLRP Aspirations
Starts with COG regional CO_2 goals and assesses what scales and combinations of interventions will be necessary to achieve the goal for the transportation sector.	Draws on past studies and public outreach to provide an ambitious yet attainable vision of land use and transportation for the 2010 CLRP update and to eventually serve as an unconstrained long range plan.

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Aspirations Scenario: The Starting Point

Baseline

1. Round 7.2 Cooperative Forecast
2. 2008 CLRP

RMAS Land Use/Transportation Scenarios

1. More Households Scenario
2. Households In Scenario
3. Jobs Out Scenario
4. Region Undivided Scenario
5. Transit-Oriented Development Scenario

Variably Priced Lanes Scenarios

Public Outreach/Feedback on Previous Scenarios

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Developing the Aspirations Scenario

Goal: To move jobs and housing closer together to create highly accessible and developed areas, and achieve more efficient transportation systems

Land Use Decisions	→	Pricing Options	→	Supportive Transit
• Concentrating projected growth in activity centers and existing/planned transit stations • Consistent review and refinement by planning directors		• Address congestion through pricing of new and/or existing lanes • Provide alternatives through enhanced transit		• Use menu of transit options from past scenarios • Connect activity centers • Review by Regional Bus Subcommittee

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Scenario Criteria

"Within Reach"

1. Land use shifts should be *within reach* for inclusion in the COG Cooperative Forecast
2. Transportation projects should be financially *within reach* through developer contributions and pricing.

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Consultation with Local Jurisdictions

In order to make sure the scenario was aspirational while still being "within reach", we:

1. Conducted 10 individual jurisdiction meetings with both land use and transportation planners in Alexandria, Arlington, DC, Fairfax, Frederick, Loudoun, Montgomery, Prince George's, Prince William and VDOT
2. Collected specific comments and incorporated changes into the TAZ-level land use shifts and transit network.

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Principles Guiding the Scenario, RMAS and the TPB Vision

1. RMAS: Moving Jobs and Housing Closer Together

What Ifs

2. The TPB Vision

"Economically strong regional activity centers with a mix of jobs, housing, services, and recreation in a walkable environment"

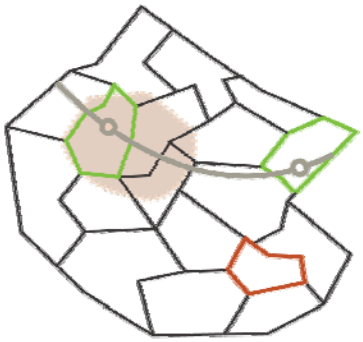
"A web of multi-modal transportation connections which provide convenient access"

"A user-friendly, seamless system"

"Reduction of per capita VMT"

Goals

3. Strategic Land Use Growth Shifts



- Receiving Zones
- Donor Zones
- Transit Station
- Activity Center

How To

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Goals and "Rules" for Land Use Shifts

Transit Supportive Density	High enough densities in activity centers to support different levels of mass transit
Walkable Density	Regional Models Rosslyn-Ballston Corridor Old Town Alexandria
Mixed Use	Jobs/Housing balance for the region, jurisdictions and activity centers
Move Only New Growth	Shifts from 2015-2030
Existing Character and Planned Development	Varying land use goals

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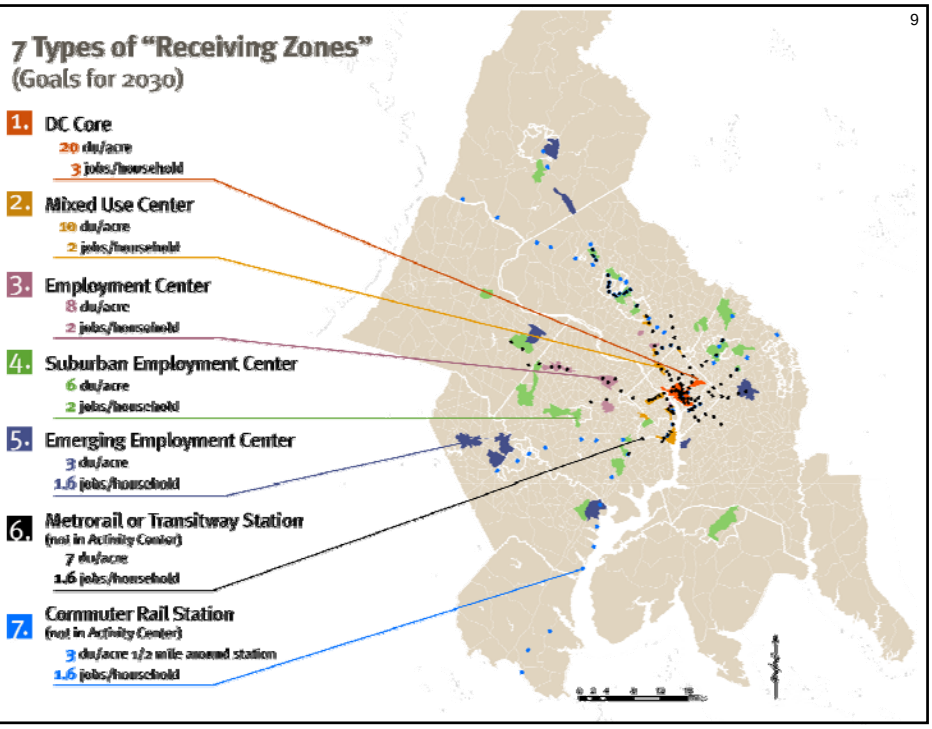

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Land Use Component – By The Numbers

- Households
  - Moves 69,000 additional households into the region
  - Relocates 205,000 households to activity centers and transit station areas
    - 57% of those "at play" between 2015 and 2030
    - 8.2% of the region's 2030 total
- Jobs
  - Moves 22,000 additional jobs into the region
  - Shifts 240,000 jobs to activity centers and transit station areas
    - 35% of those "at play" between 2015 and 2030
    - 5.6% of the region's 2030 total

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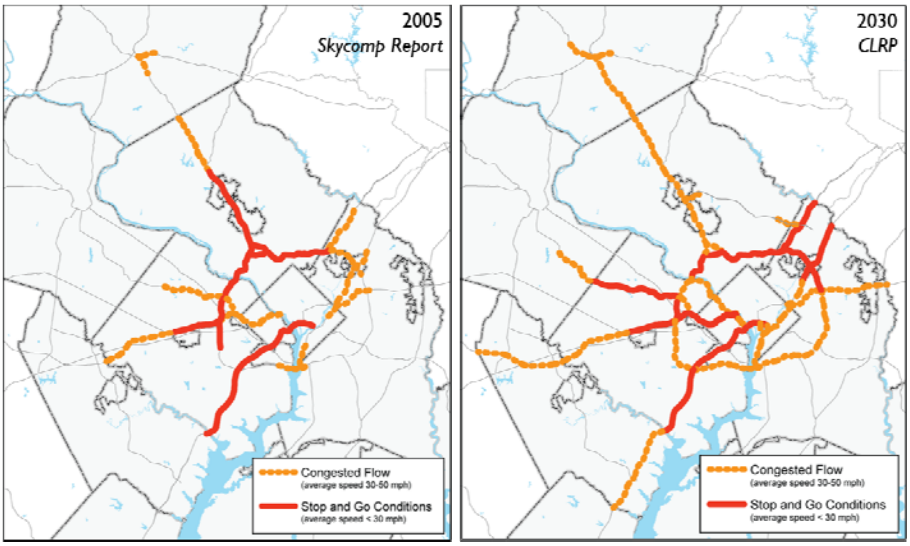
Transportation Component: Existing Conditions



Freeway system is currently congested and the extent of the congestion will increase by 2030.

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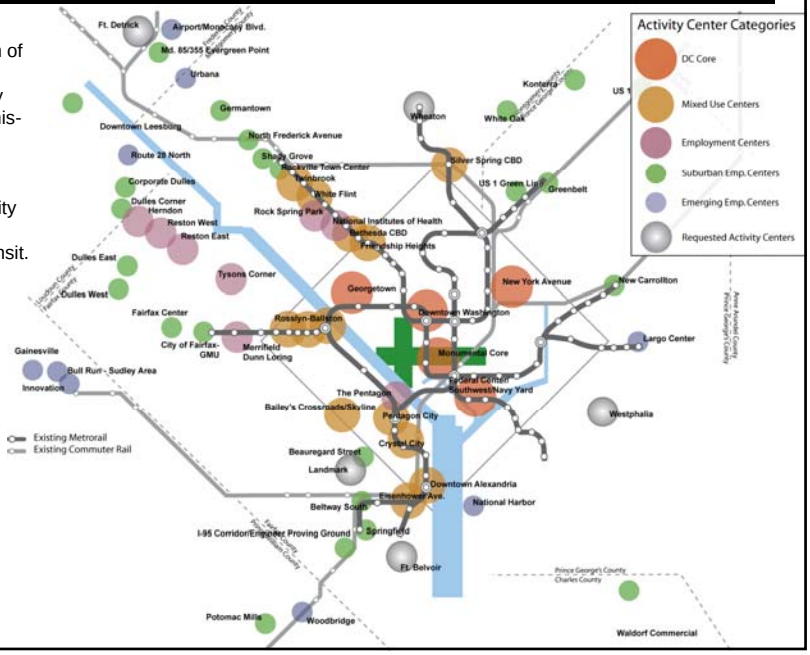
Transportation Component: Existing Conditions

Existing system of activity centers and high quality transit shows mis-match. Many transit stations without activity and many activity centers without high-quality transit.



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Transportation Component: Existing Conditions

Metrorail AM Line Capacity at Maximum Load Segments

Line	2005	2010	2015	2020	2025	2030
Red	Congested	Congested	Congested	Congested	Congested	Highly Congested
Blue (Rosslyn)	Congested	Congested	Congested	Congested	Congested	Congested
Orange/Dulles Rail	Highly Congested	Congested	Highly Congested	Exceeds Capacity	Exceeds Capacity	Exceeds Capacity
Yellow/Blue (14th St Bridge)	Congested	Congested	Congested	Highly Congested	Highly Congested	Highly Congested
Green	Congested	Congested	Congested	Highly Congested	Highly Congested	Highly Congested

Congested (<100 people/car)
Highly Congested (100-120 people/car)
Exceeds Capacity (>120 people/car)

Source: WMATA Metrorail Station Access & Capacity Study, April 2008

Metrorail will be nearing maximum capacity by 2030.

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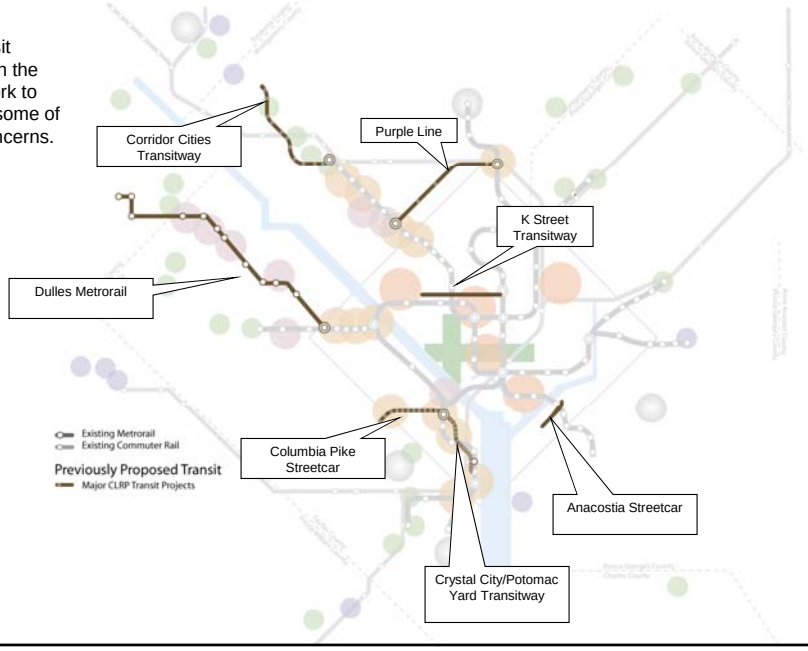
CLRP Projects Included in the Baseline

The transit projects in the CLRP work to address some of these concerns.



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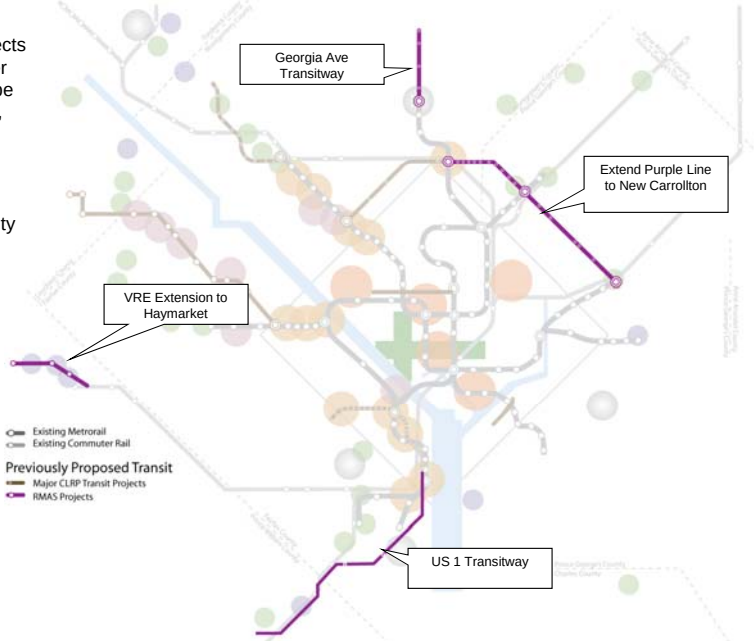
RMAS Projects Included in the Scenario

Additional projects evaluated under RMAS should be carried forward, with minor modification to provide transit service to additional activity centers.



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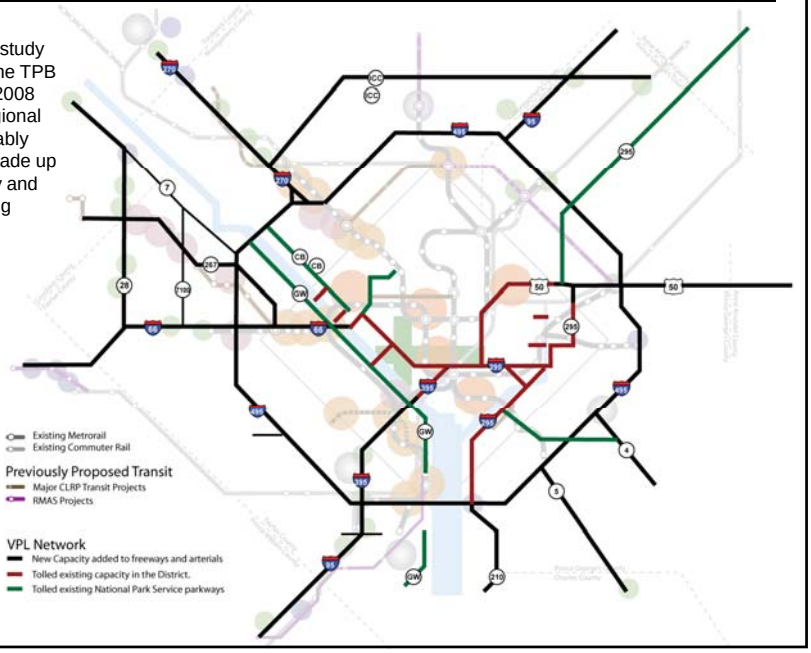
Network of Variably Priced Lanes

A value pricing study completed by the TPB in February of 2008 evaluated a regional network of variably priced lanes, made up of new capacity and selected existing facilities.



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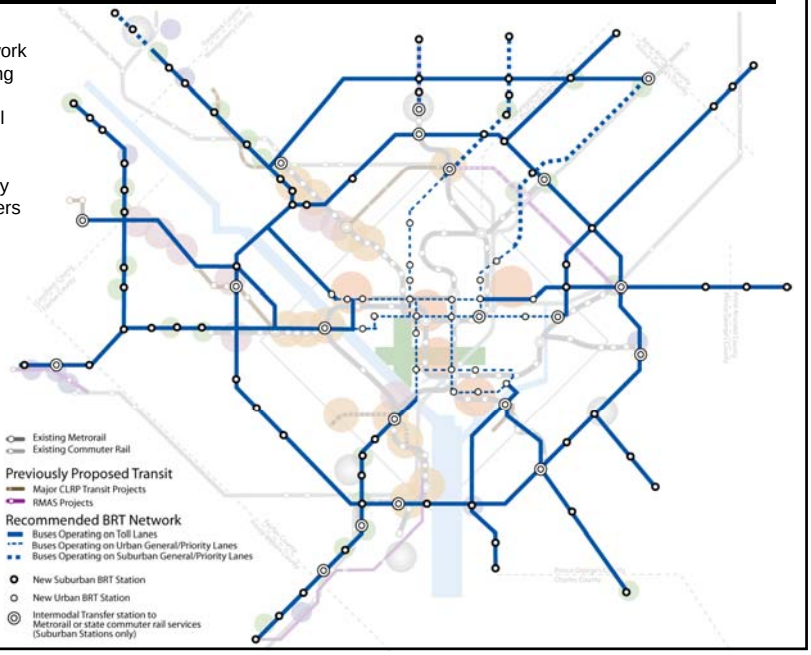
BRT Network for Scenario Study

A regional network of BRT operating mostly on the priced lanes will provide high-quality transit service to nearly all activity centers in the region.



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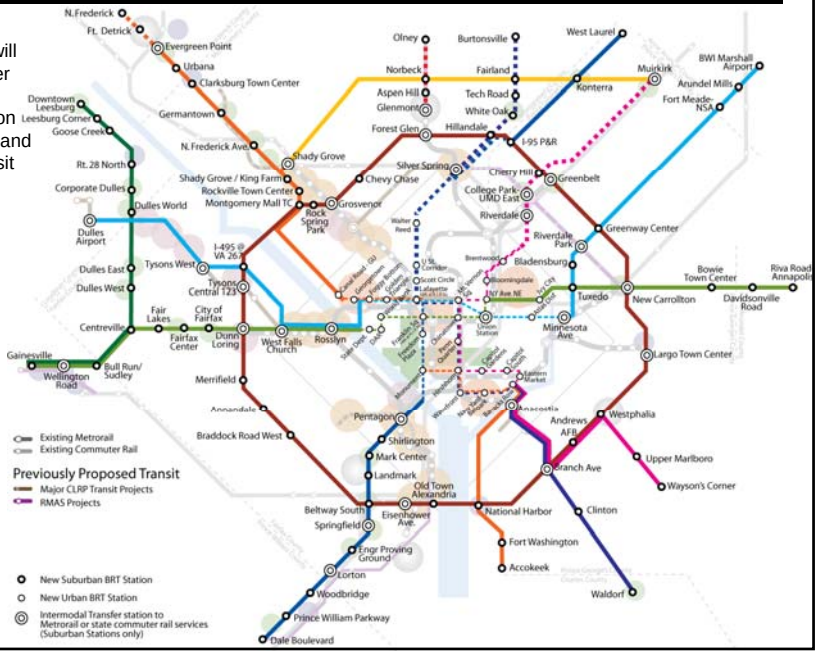
BRT Network Routes to and through the Core

This network will provide another layer of high-quality transit on top of existing and proposed transit services.



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TIGER Grant Application First Step to Regional Network

TPB TIGER Grant application, submitted Sept 15, 2009, to act as first step towards this regional network.

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BRT to Provide Rail-Like Level of Service

- Transit Speeds
  - 45 MPH on toll lanes
  - 15 MPH on priority corridors
- Headways
  - 10 minutes, peak
  - 30 minutes, offpeak
- Fare Structure
  - Same as current services
- Will complement existing services
  - No replacement of current commuter bus services with BRT routes.
- BRT complemented by 15 activity center circulator systems with 10-minute headways
  - Added to activity centers without high quality local bus transit.

The Shirlington Transit Station in Arlington, VA.

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Transportation Component – By The Numbers

- Highways
  - Scenario creates a 1,650-mile regional priced lane network
    - 150 priced lane miles in the CLRP
    - 350 lane miles converted from HOV lanes
    - 650 new lane miles
    - 500 lane miles converted from GPLs (DC, Parkways)
  - Priced lanes target speed: 35 to 45 MPH.
- Transit
  - Scenario creates regional BRT system of nearly 500 miles
    - 138 BRT stations located in the core, activity centers and existing parking facilities
    - Plus an additional 140 miles of circulator service
  - Adds 5640 daily hours of transit service

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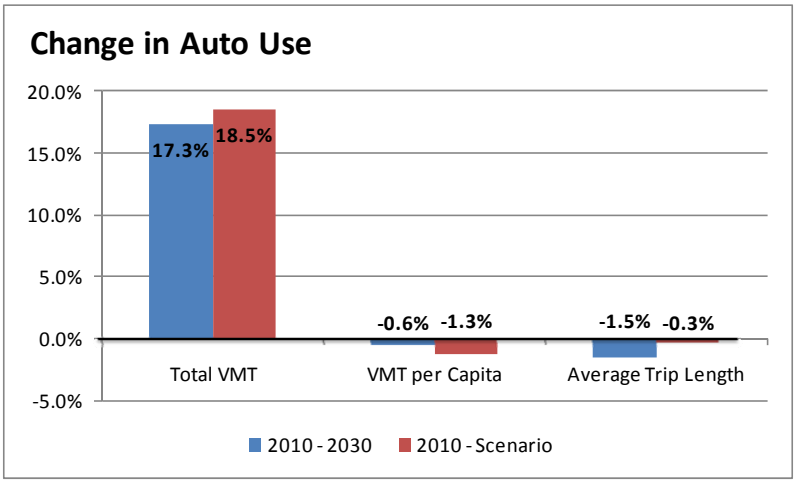
Preliminary Results: Driving Increases



- Toll network adds to regional freeway capacity, increasing auto-mobility.

Results as of 1/20/2010

2008 CLRP for 2030 and Aspirations Scenario for 2030 Compared to 2008 CLRP for 2010.

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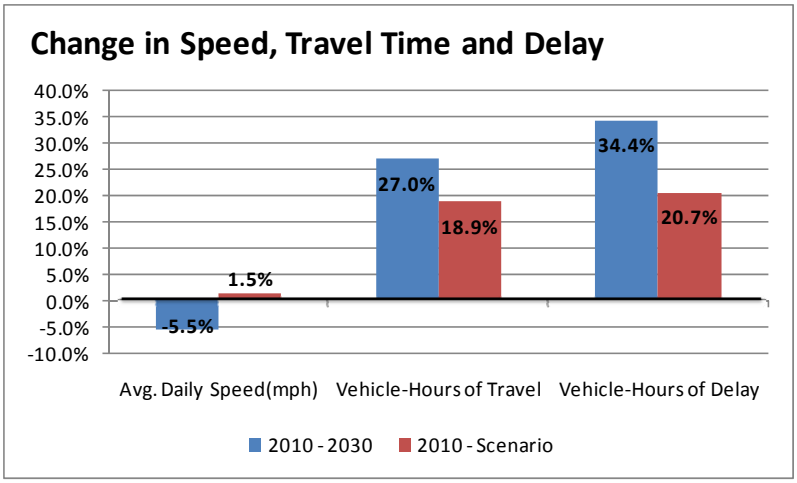
Preliminary Results: Congestion Decreases



- Average speeds increases, reducing total travel times and delay.

Results as of 1/20/2010

2008 CLRP for 2030 and Aspirations Scenario for 2030 Compared to 2008 CLRP for 2010.

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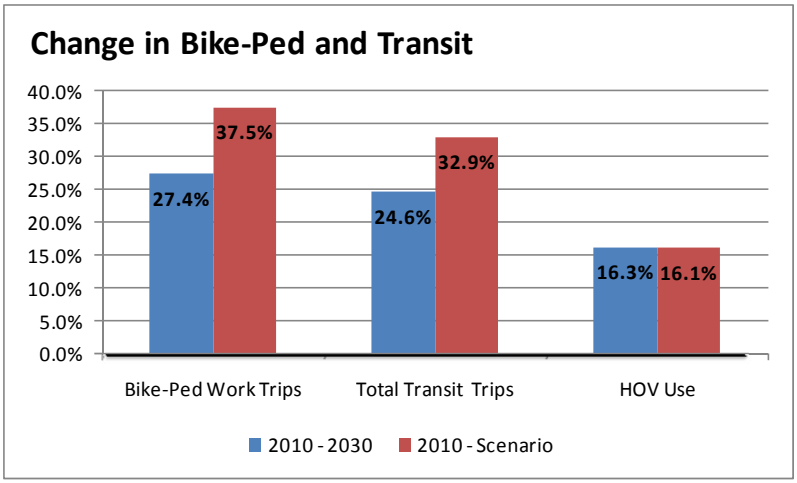
Preliminary Results: Transit, Bike-Walk Increase



- Moving jobs and households closer together increases bike and walk trips.
- New regional BRT system makes transit a more viable option.

Results as of 1/20/2010

2008 CLRP for 2030 and Aspirations Scenario for 2030 Compared to 2008 CLRP for 2010.

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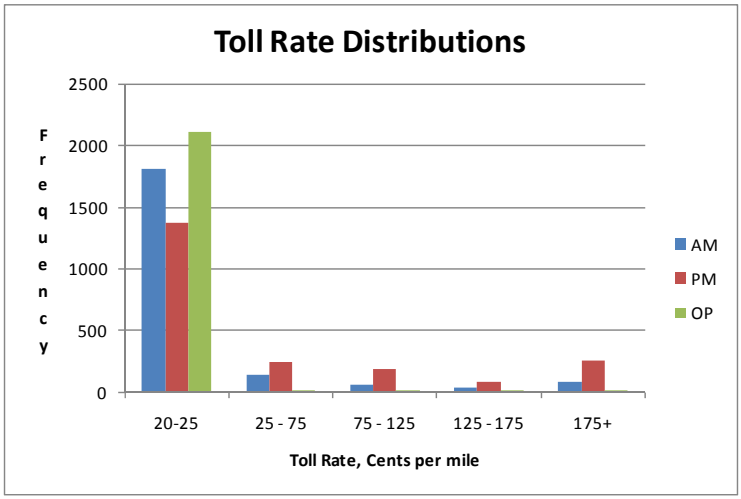
Preliminary Results: Toll Rate Distributions



- Highest toll rates in PM peak.

Results as of 1/20/2010

2008 CLRP for 2030 and Aspirations Scenario for 2030 Compared to 2008 CLRP for 2010.

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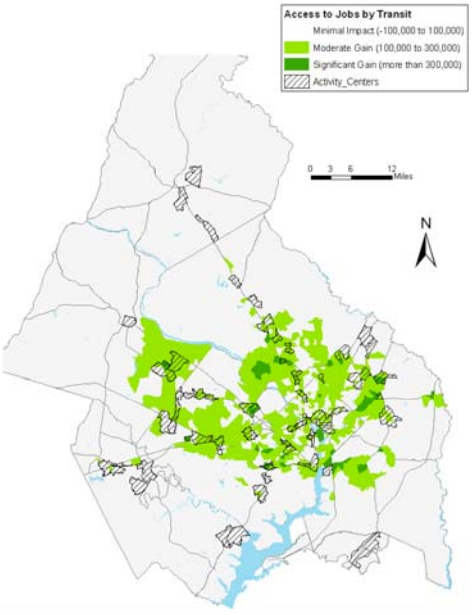
Preliminary Results: Access to Jobs by Transit

- Map illustrates change in number of jobs accessible within 45 minutes by transit between 2008 CLRP for 2030 and the Aspirations scenario.
- The scenario estimates large increases in accessibility to jobs by transit across the region.



Results as of 1/20/2010

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Notable Results

1. 2.2% increase in Households, yet only a 1% increase in motorized trips.
   - Concentrating households in activity centers provides more bike and walk options.
2. HOV use virtually unchanged.
   - Could be result of large increase in transit service.
3. Total VMT increase of 1.5%, but VMT per Capita decreased by nearly 1%.
   - VMT increase due mostly to increase in households.

Results as of 1/20/2010

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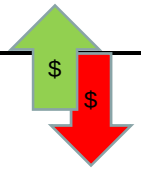
Preliminary Costs and Revenue Estimates



- Annual Revenues
  - Toll Lane Network: $2.5 billion
    - In line with results from 2006 pricing study
  - Transit Network: $125 million
    - Rough estimate, assumes $2.50 average fare
- Capital Costs
  - Toll Network: $50 billion
    - From 2006 pricing study
    - Can be reduced by $10 billion if interchanges not serving activity centers are replaced by slip ramps.
  - Transit Network: $2 billion
- Operating Costs
  - Toll Network: Incorporated in capital costs
  - Transit Network: $250 million

Results as of 1/20/2010

Costs in 2010 $

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Preliminary Costs and Revenue Estimates

- Sketch assessment results in approximate break-even of costs and revenues.
- Estimate excludes several key cost factors:
  - Increases in capacity needed to ensure quality BRT service on mixed-use arterial roadways
  - Increases in park-and-ride facilities at BRT stations outside of activity centers
- Estimate excludes tax-increment financing revenue to capture real estate value changes.

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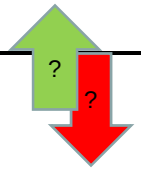
Topics for Further Investigation



1. How does toll lane speed impact network?
   - Increase target speed for toll lanes.
   - Should increase tolls, increase general purpose lanes congestion, reduce regional VMT. Impact on total revenue unknown.
2. What would be the effect of reducing the number of new lane miles?
   - For example, convert toll network from “add-two” to “add-one-take-one” or price more existing lanes.
   - Will reduce construction costs while increasing toll rates, revenues and congestion, and reducing VMT.
3. What is the effect of changing transit service levels?
   - Explore viability of transit use for both peak and off-peak travel (all trip purposes) by reducing headways.

Next Steps

1. Further analysis, refinements, sensitivity testing and benefit-cost analysis, with regular briefings, February to May.

2. Final report, June.