

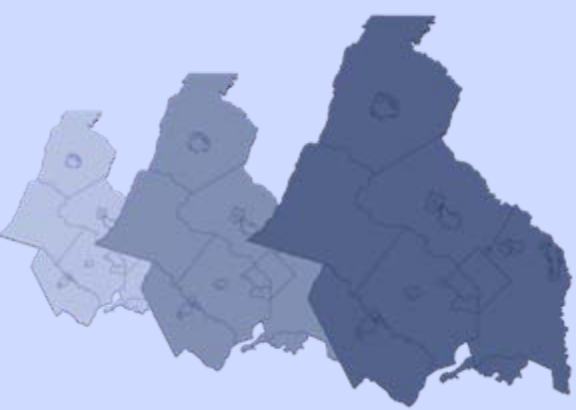
TPB SCENARIO STUDY

Progress on “CLRP Aspirations” and “What Would it Take?” Scenarios

Ronald F. Kirby
Director, Department of Transportation Planning

Presentation to the TPB

July 16, 2008



Cost/Benefit Analysis

Presentation at the June 18 TPB meeting by David Lewis:

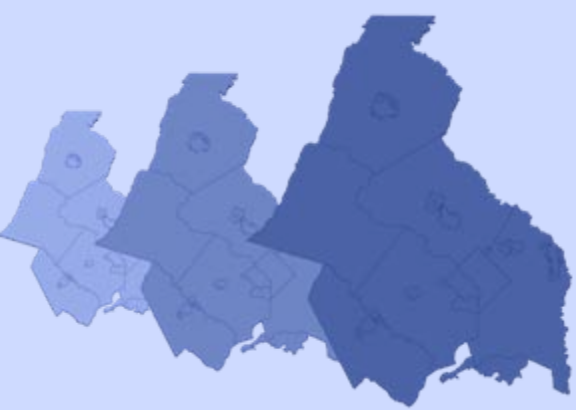
Used transit as an example of using Cost-Benefit Analysis to recognize and quantify all sources of project value

Enables identification of alternative ways of financing transportation projects, such as development-based financing

Allows comparative ranking of alternative scenarios for the region, including transit, highways, pricing and other policy options

Feasible and proven using conventional tools

Applicable both for analysis and as a deliberative public process



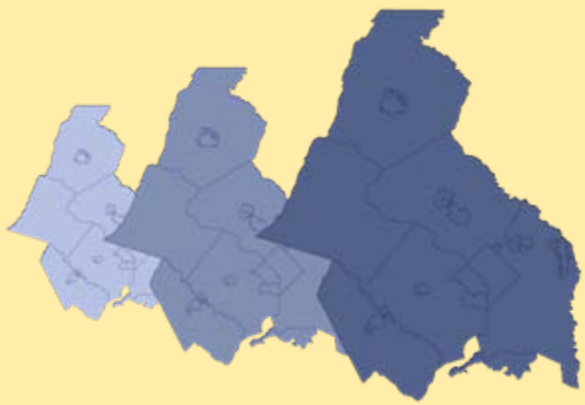
Two New Scenarios

CLRP Aspirations

Draws on past scenarios (5 transportation/land use scenarios and 2 value pricing scenarios) to provide an ambitious yet attainable vision of land use and transportation for the 2010 CLRP update.

What Would it Take?

Starts with CO₂ goals (80% below 2005 levels in 2050 and 20% reduction by 2020) and assess what scales and combinations of interventions will be necessary to achieve the goal.



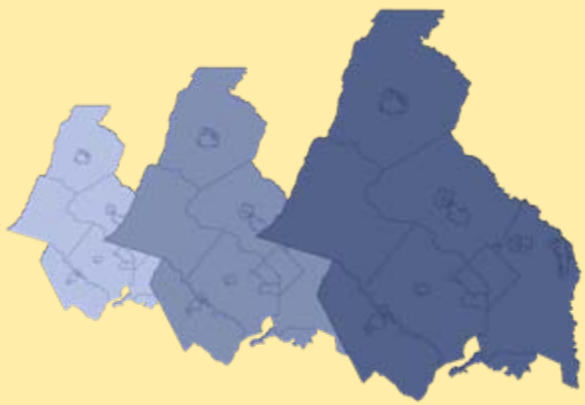
CLRP Aspirations: Starting Point

Baseline:

- Round 7.1 Cooperative Forecast
- 2007 CLRP

Two primary criteria:

- Land use shifts “within reach” for inclusion in the COG Cooperative Forecast
- Transportation projects “within reach” financially through tax revenues, developer contributions, or pricing.



Building the Scenario

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

Land Use Component

- First cut using previous scenarios to determine what receiving zones can absorb
- Seek review and refinement by planning directors



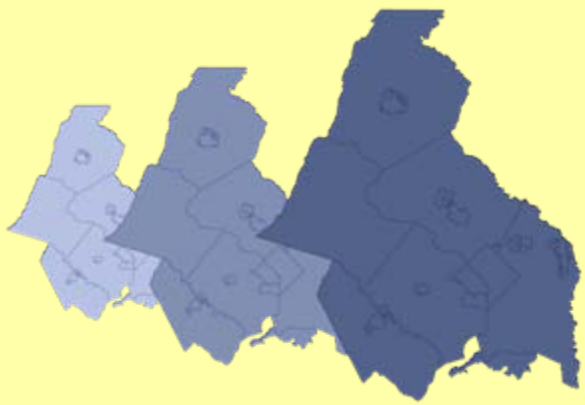
Supportive Transit

- Use menu of transit options from past scenarios
- Connect activity centers
- Work with TPB Bus Subcommittee



Pricing Options

- Address congestion through pricing of new and/or existing lanes
- Provide alternatives through enhanced transit



Land Use Component

(Version 1)

Step 1

Assess Previous Scenarios (Households In, Jobs Out, More Households, TOD, Region Undivided) for:

Growth shifts within TAZs

Goals and principles employed

ie: “Receiving” zones and “Donor” zones

Step 2

Assess what shifts in growth from donor zones to receiving zones are “within reach”

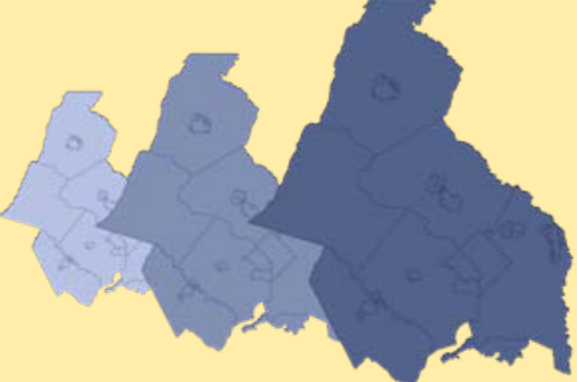
Takes “maximum” shift across all past scenarios

Under review by Planning Directors

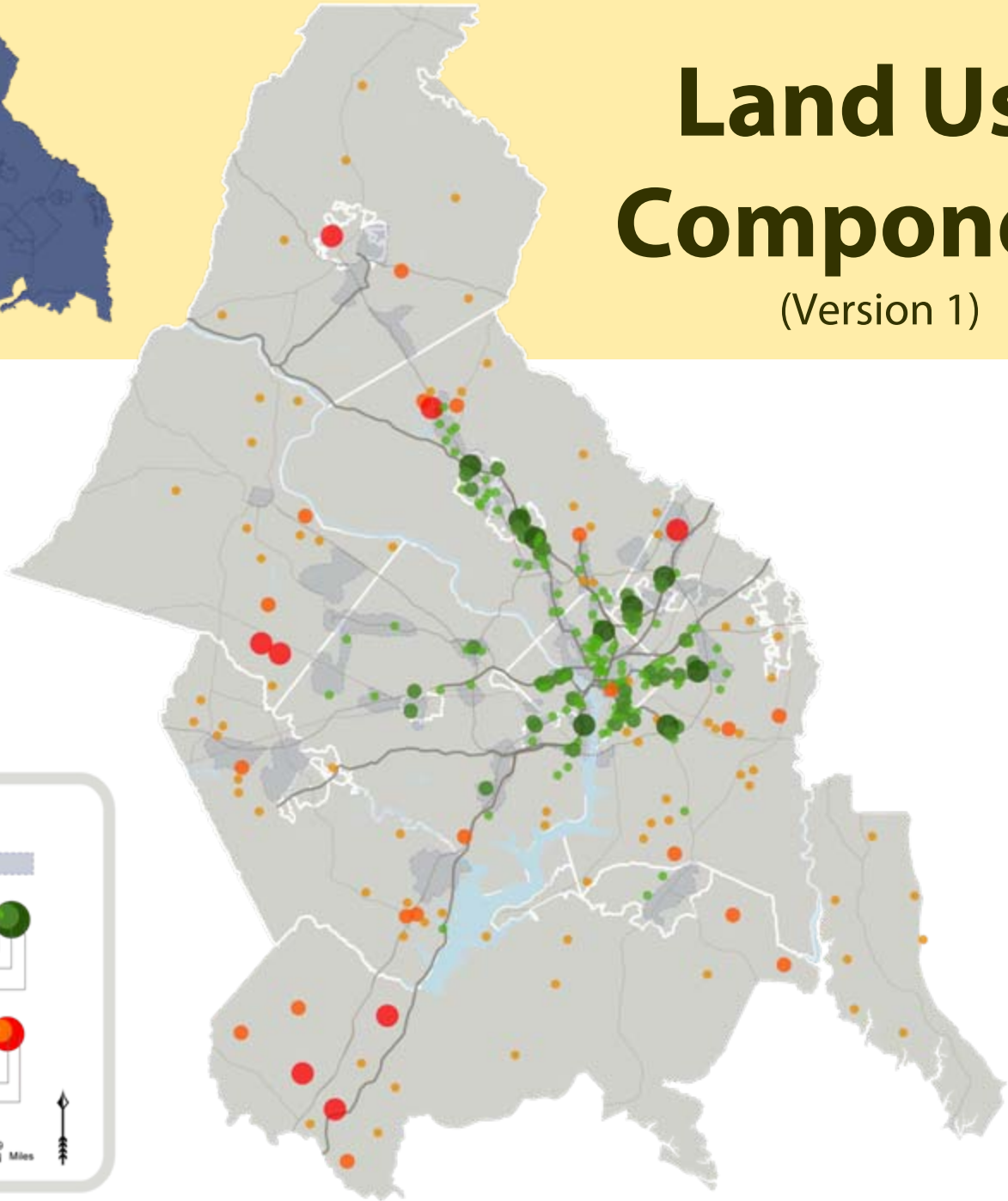
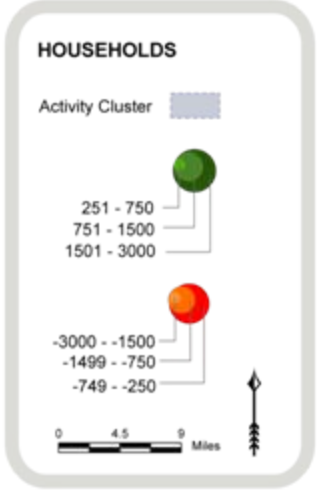
Starting point for revision and refinement

Land Use Component

(Version 1)



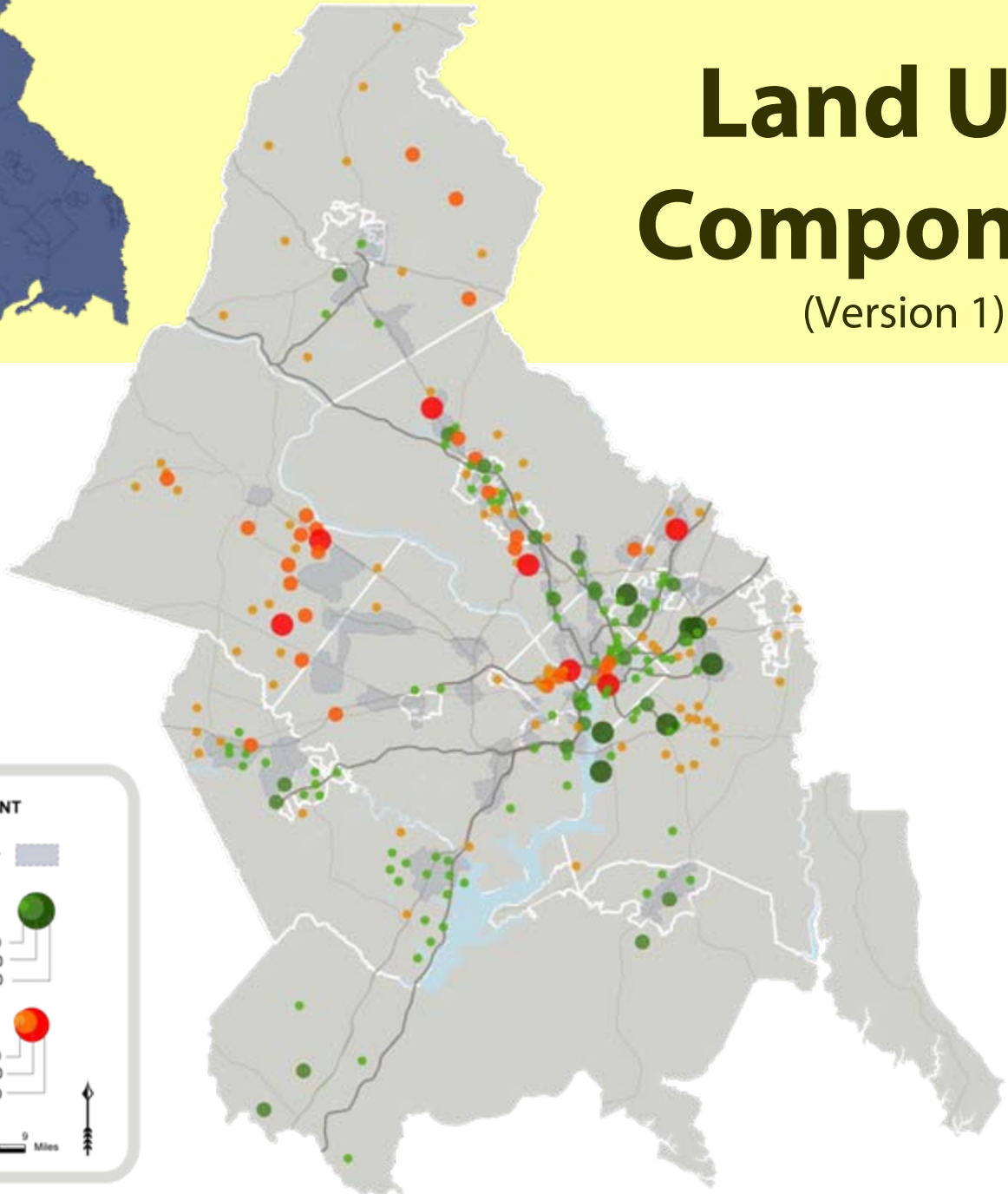
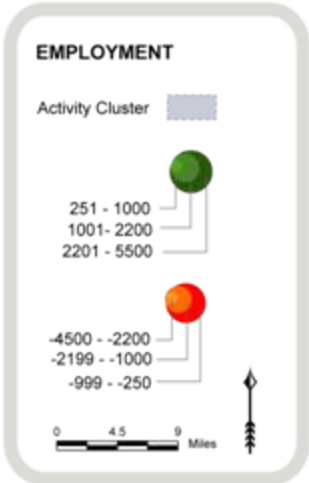
Households,
Growth shifts
2010-2030

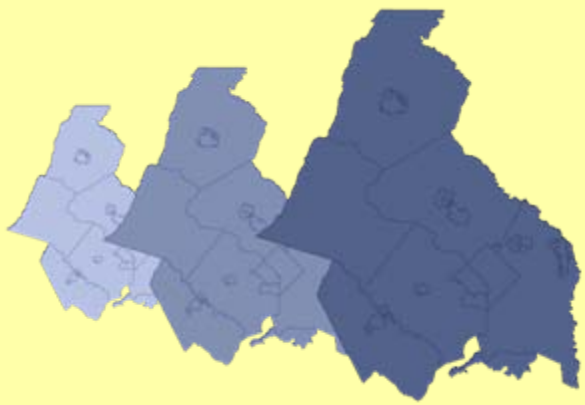


Land Use Component

(Version 1)

Employment,
Growth shifts
2010-2030



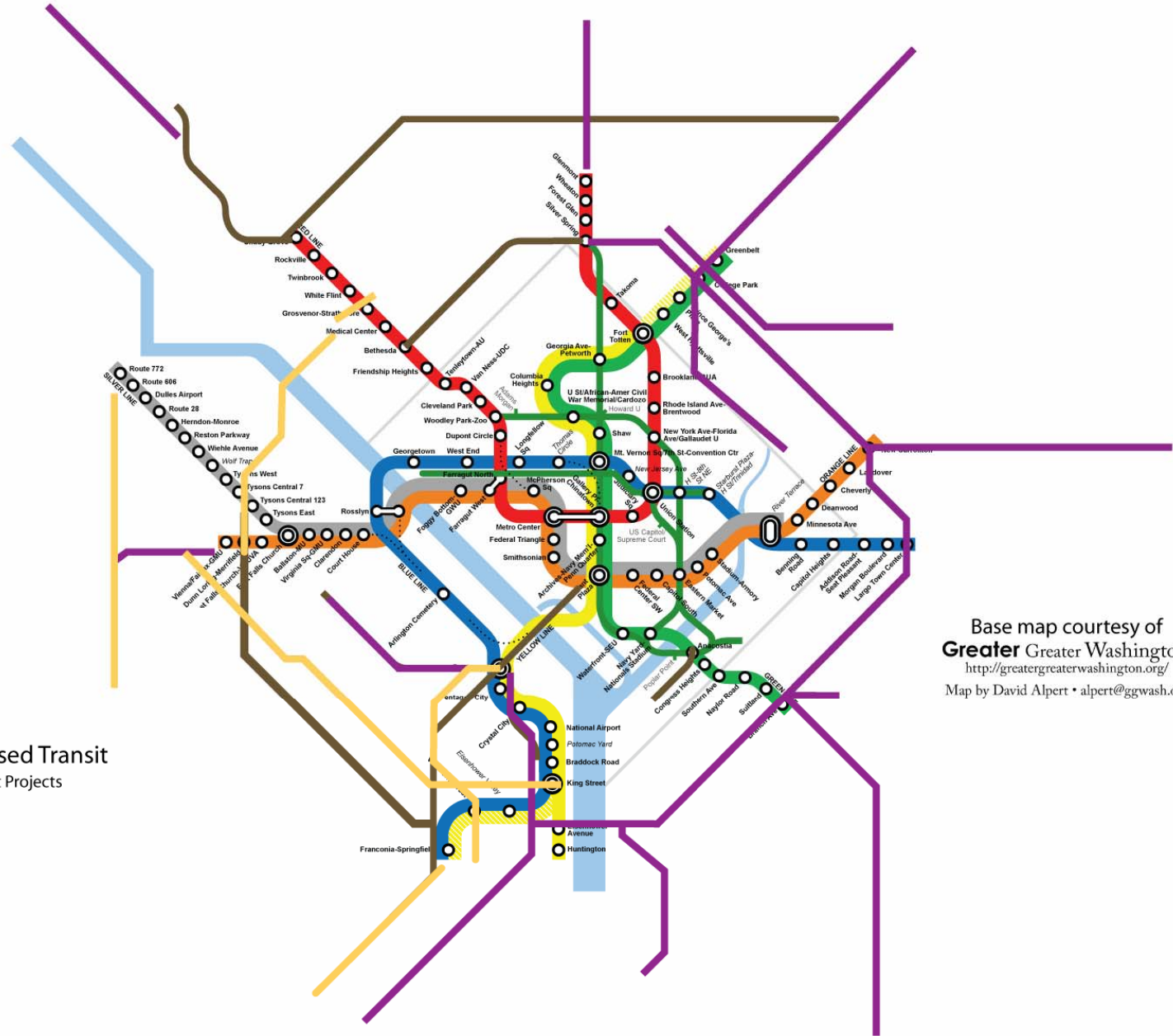


Transportation Options

Process: Layering of transit and pricing options under consideration for the CLRP Aspirations Scenario

- 1: Illustrate interaction between existing Metrorail and Regional Activity Centers
- 2: Map transit plans and prospects
 - CLRP and RMAS projects
 - Projects from other local or regional plans
- 3: Overlay the studied network of variably priced lanes (VPLs)
- 4: Evaluate rationale for including bus transit on the VPL network
- 5: Suggest potential bus stations at activity centers, existing park-and-ride lots and Metrorail stations

Previously Proposed Transit



Previously Proposed Transit

- Major CLRP Transit Projects
- RMAS Projects
- Other Proposals

Base map courtesy of
Greater Greater Washington
<http://greatergreaterwashington.org/>
 Map by David Alpert • alpert@ggwash.org

Studied Network of Variably Priced Lanes with Activity Centers

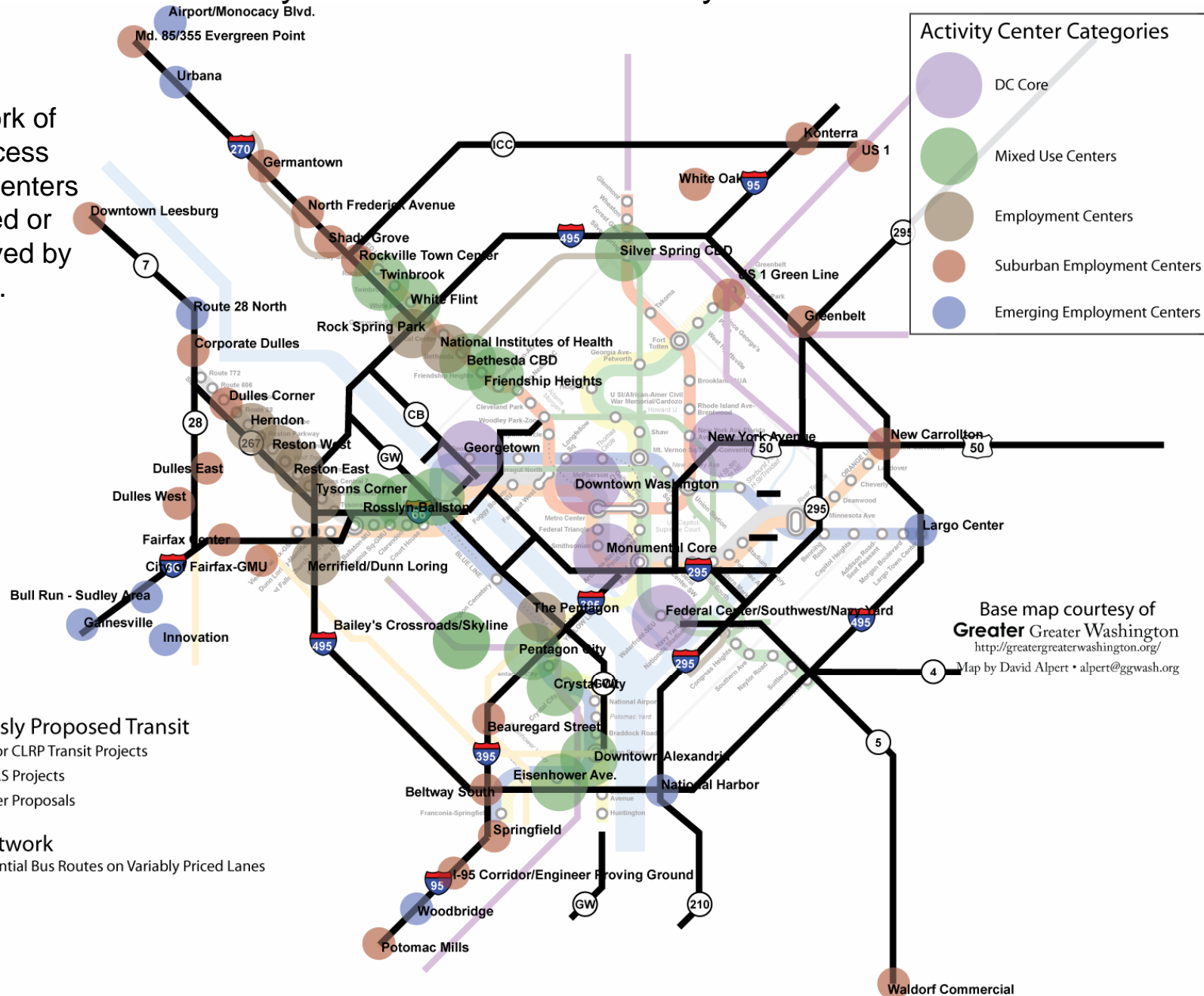
The studied network of VPLs provides access nearly all activity centers not currently served or planned to be served by high quality transit.

Previously Proposed Transit

- Major CLRP Transit Projects
- RMAS Projects
- Other Proposals

VPL Network

- Potential Bus Routes on Variably Priced Lanes



Potential Bus Station Locations

Buses can stop at stations located in activity centers, park and ride lots and existing Metrorail stations via dedicated access ramps

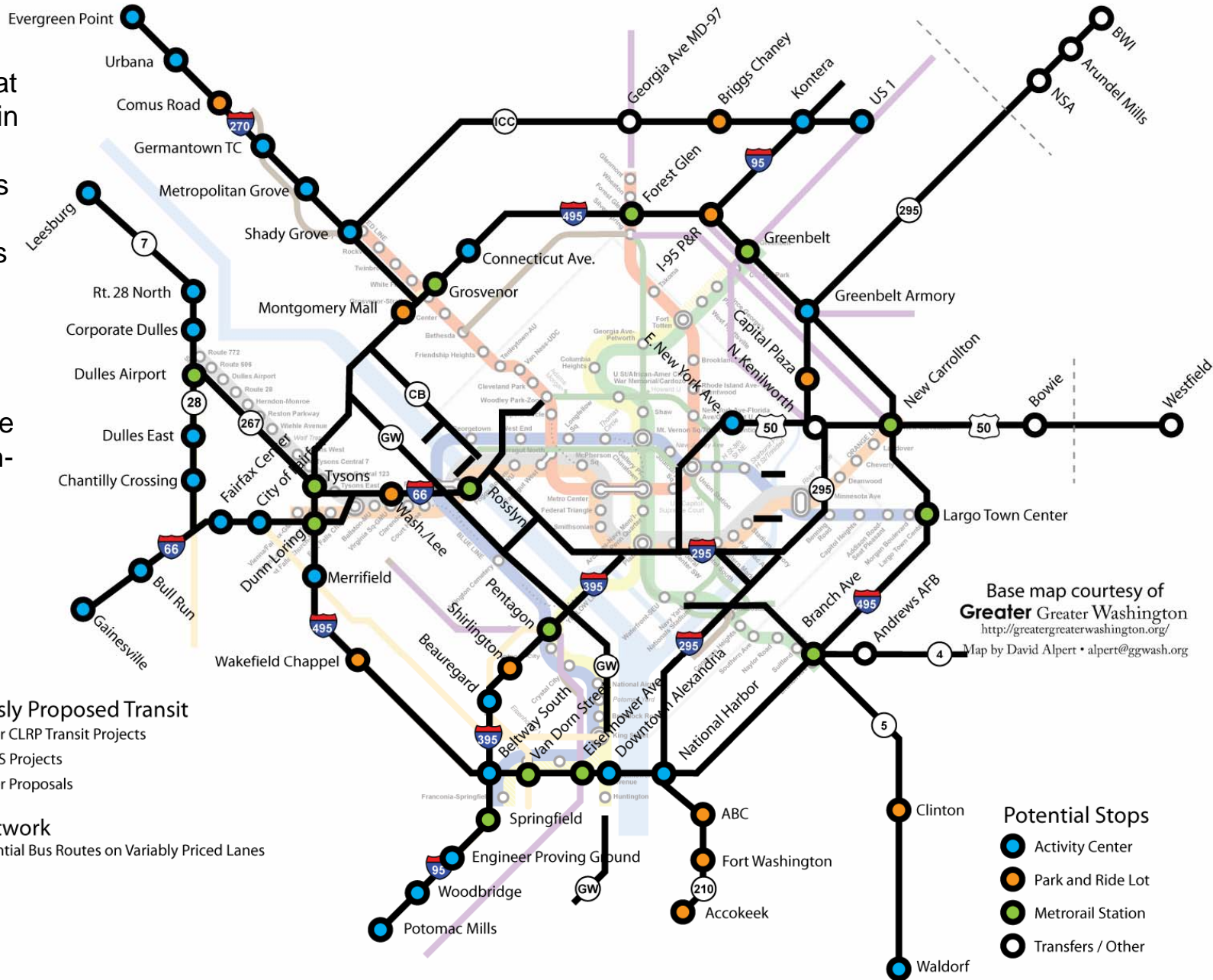
Bus routes on VPLs can provide low-cost but high-quality transit to activity centers without transit service.

Previously Proposed Transit

- Major CLRP Transit Projects
- RMAS Projects
- Other Proposals

VPL Network

- Potential Bus Routes on Variably Priced Lanes

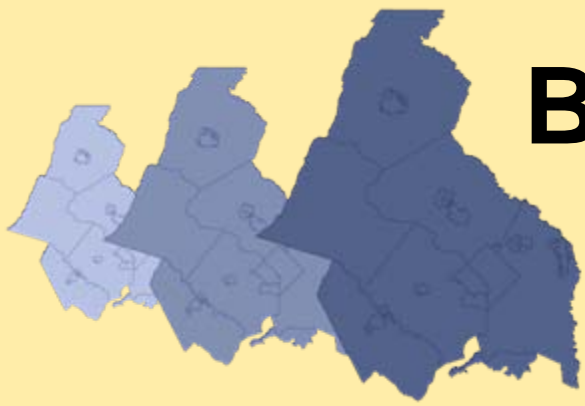


Base map courtesy of
Greater Greater Washington
<http://greatergreaterwashington.org/>
 Map by David Alpert • alpert@ggwash.org

Potential Stops

- Activity Center
- Park and Ride Lot
- Metrorail Station
- Transfers / Other

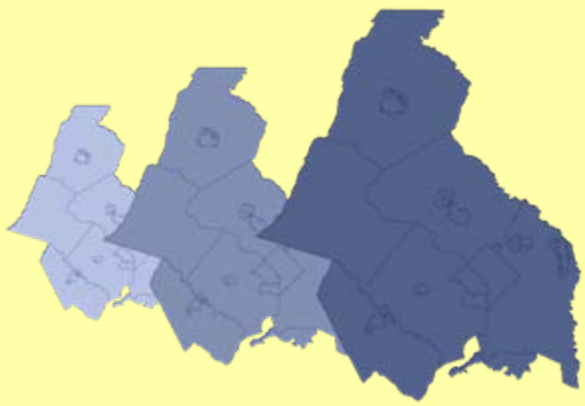
Bus Services on Variably Priced Lanes



- Previous pricing study evaluated regular and express bus service operating on the variably priced lanes
- CLRP Aspirations Scenario to include BRT-like bus stations and technologies at high-demand locations



The Shirlington Transit Station, currently under construction in Arlington, VA.

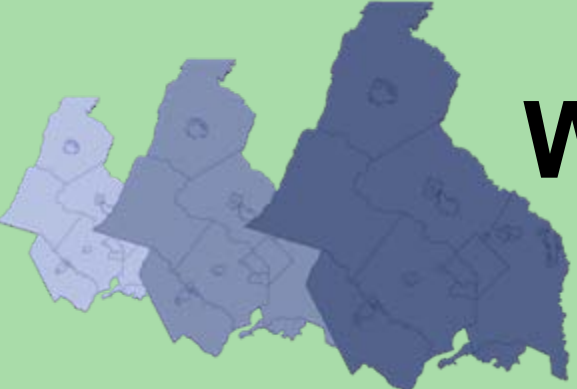


Next Steps

Review and refine initial transportation and land use components based on Planning Directors and Regional Bus Subcommittee feedback:

Do the current land use shifts and transportation projects represent what is “within reach” or should they be more or less aggressive?

Present scenarios for detailed review by TPB Scenario Study Task Force at their September meeting

A stylized map of the Carolinas, with the western part in light blue and the eastern part in dark blue, set against a light green background.

What Would it Take? Scenario Goals

COG Climate Change Steering Committee goals:

2012

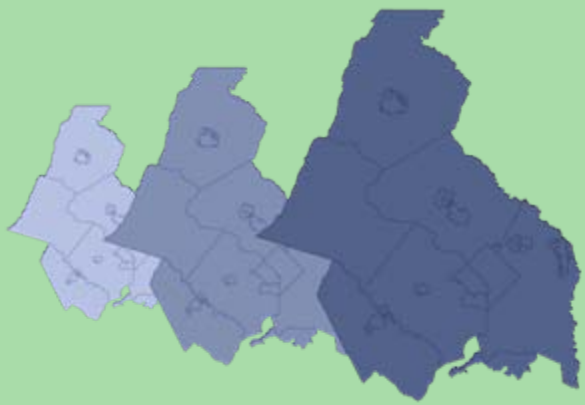
10% reduction in CO₂ below 2012 business as usual levels, getting us to 2005 levels

2020

20% reduction in CO₂ below 2005 levels

2050

80% reduction in CO₂ below 2005 levels



Building the Scenarios

What Would it Take?

Three categories of strategies to reduce mobile CO2 emissions

Fuel Efficiency

Beyond CAFE standards [currently 35 mpg by 2020]

Fuel Carbon Intensity

Alternative fuels (biofuels, hydrogen, electricity)

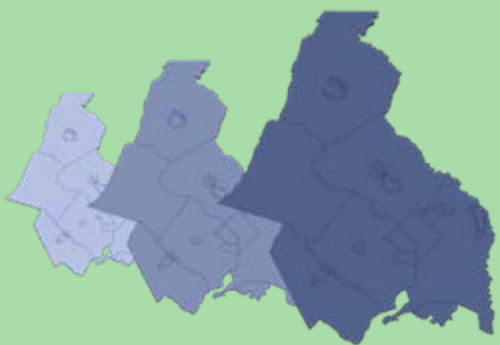
Vehicle technology (hybrid engine technology)

Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

Reduce congestion

Improve operational efficiency

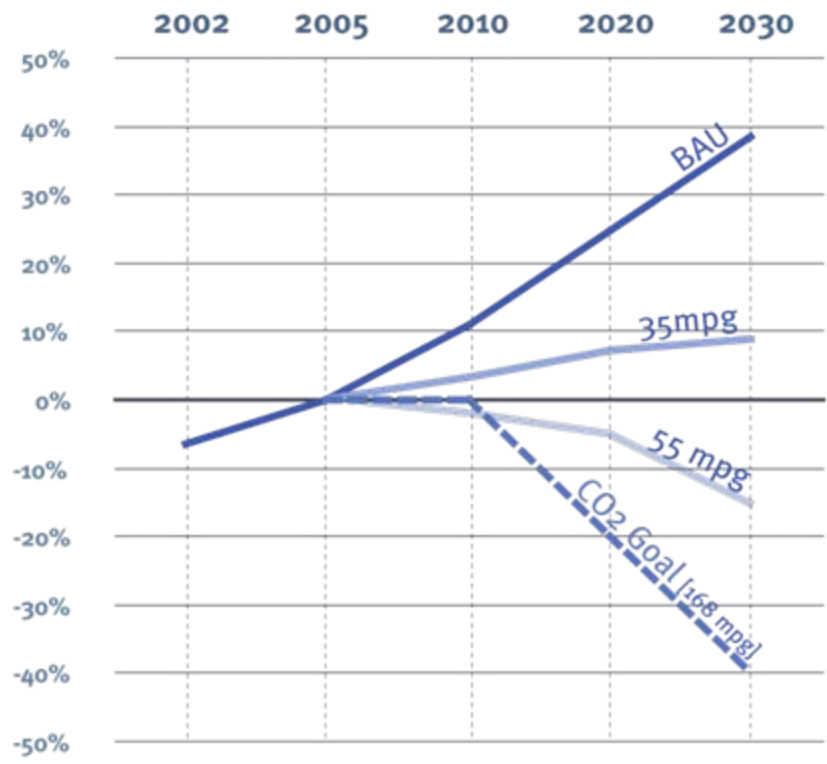


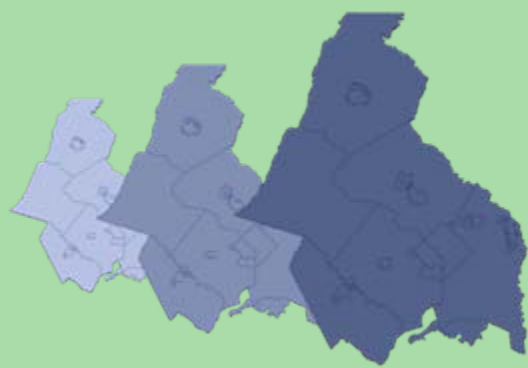
What Would it Take with Fuel Efficiency?

Fuel Efficiency

Beyond CAFE standards [currently 35 mpg by 2020]

Mobile CO2 Projections and Goals
[8-hour Ozone Non-Attainment Area]





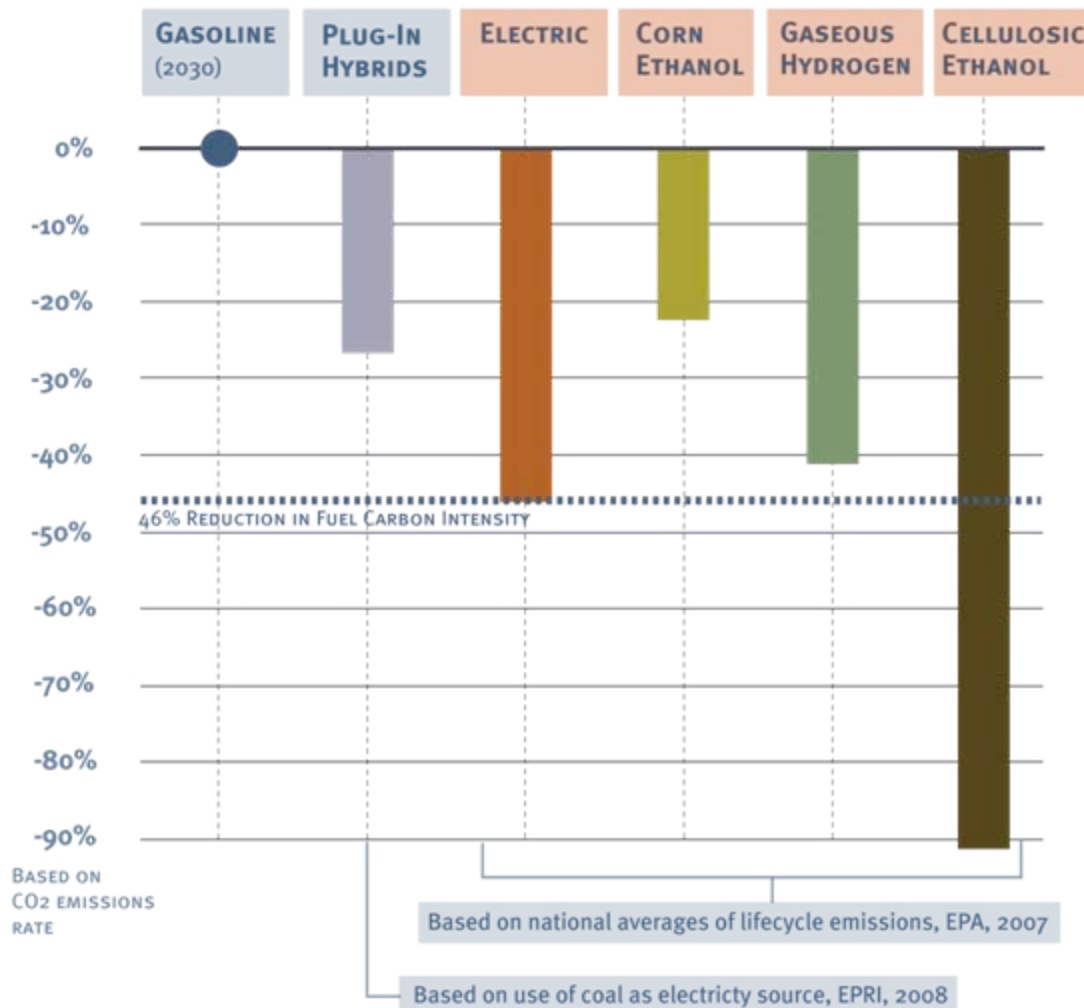
What Would it Take with Alternative Fuels?

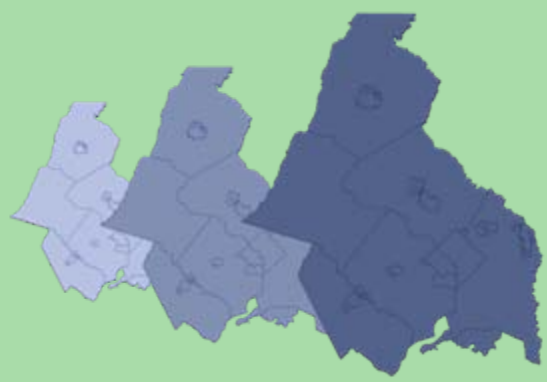
Fuel Carbon Intensity

Alternative fuels
(biofuels, hydrogen,
electricity)

Vehicle technology
(hybrid engine
technology)

How would this look
with lifecycle emissions
for the region?





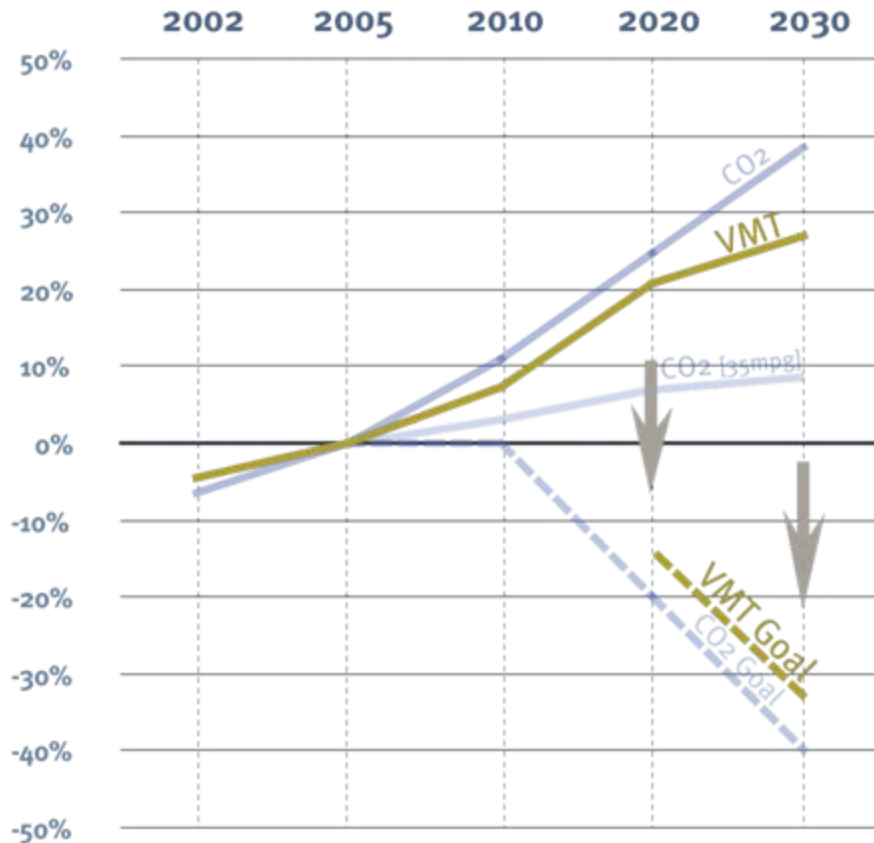
What Would it Take with VMT?

Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

Reduce congestion

Improve operational efficiency



What Can We Do by Reducing Congestion?

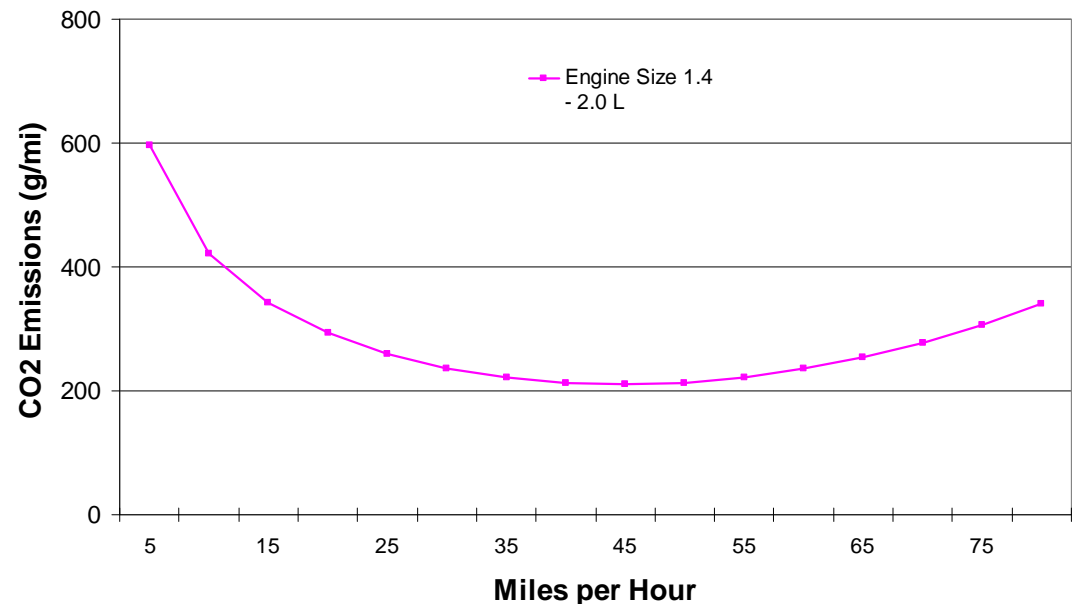
Travel Efficiency

Reduce VMT through changes in land use, travel behavior, prices

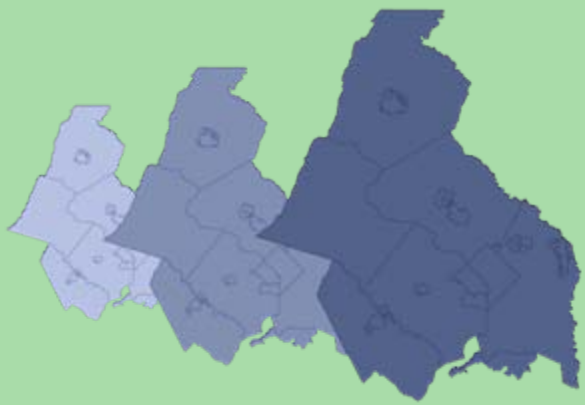
Reduce congestion

Improve operational efficiency

CO2 Emissions by Speed for Selected Light Duty Gasoline Vehicles



Source: Transport Research Laboratory (TRL), United Kingdom



Scenario Outcomes

Different combinations of interventions can be assessed for cost-effectiveness and feasibility:
A series of “**sliders**”

On July 9 the COG Board released the Climate Change Steering Committee **Climate Action Report** for comment through September 30: lists transportation emissions reduction measures

Recommendations fall within current sliders and are currently being analyzed

Preliminary analysis will be presented in September

