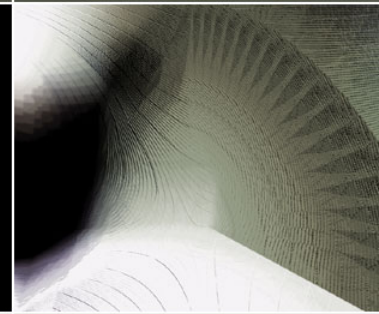


Report on Activities of the  
TPB Scenario Study Task Force  
March 19, 2008

Presentation to the National Capital Region  
Transportation Planning Board

Ronald F. Kirby  
Director of Transportation Planning



# Proposal for Two New Scenarios

- At its January 16 and February 20, 2008 meetings, the Scenario Study Task Force discussed a proposal to develop two new scenarios:
  - “CLRP Aspirations” Scenario
    - Traditional TPB conformity process, except financial constraint
  - “What Would It Take?” Scenario
    - Starts from a set objective, such as a CO<sub>2</sub> emissions reduction goal, and examines how such a goal could be achieved through different combinations of interventions

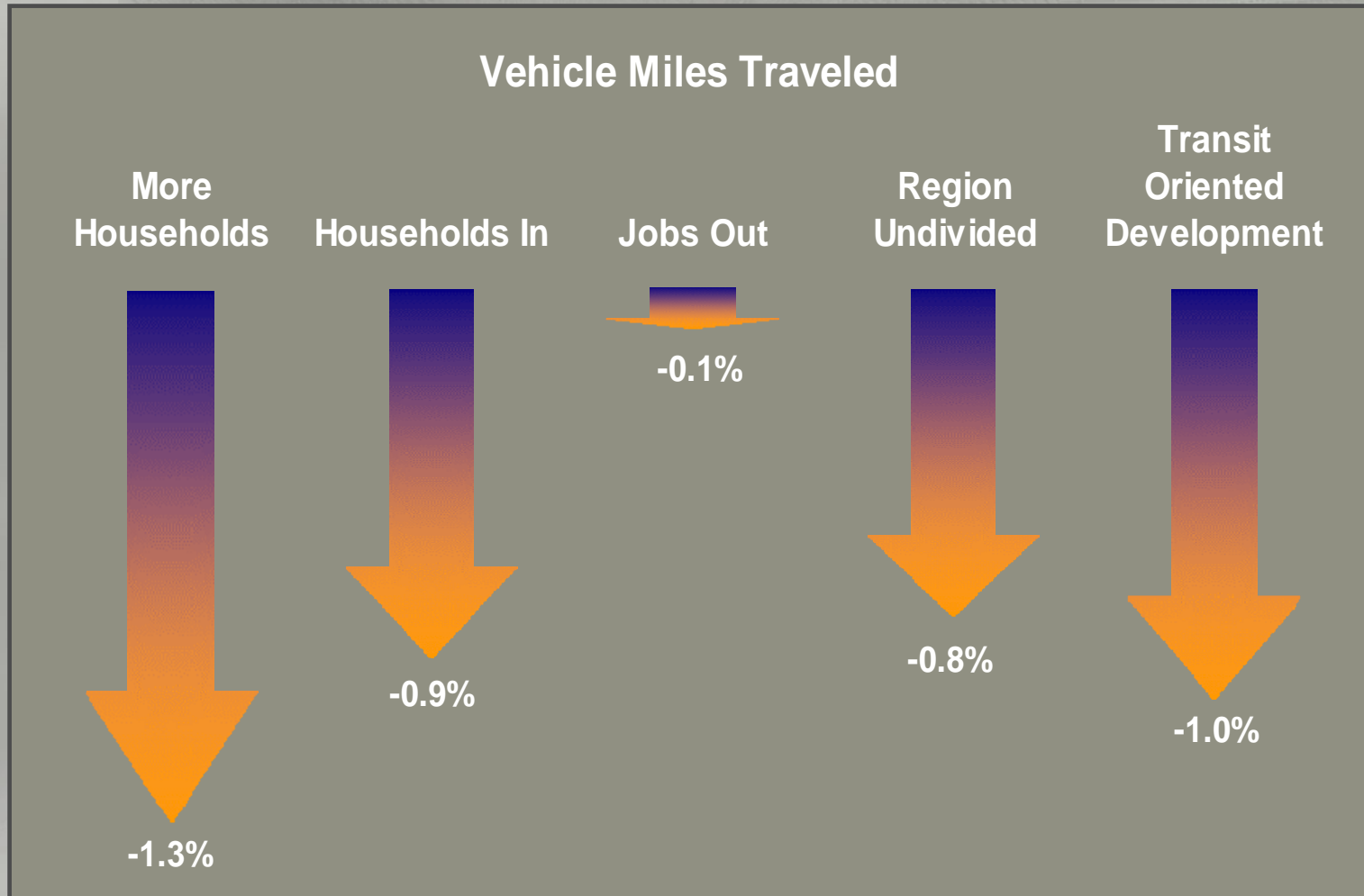
# Intent of the “CLRP Aspirations” Scenario:

To draw from previously studied scenarios and other possible strategies . . .

- o “More Households” Scenario
- o “Households In” Scenario
- o “Jobs Out” Scenario
- o “Region Undivided” Scenario
- o “Transit-Oriented Development” Scenario
- o Three Variably Priced Lanes Scenarios with pricing applied to different combinations of new vs. existing lanes

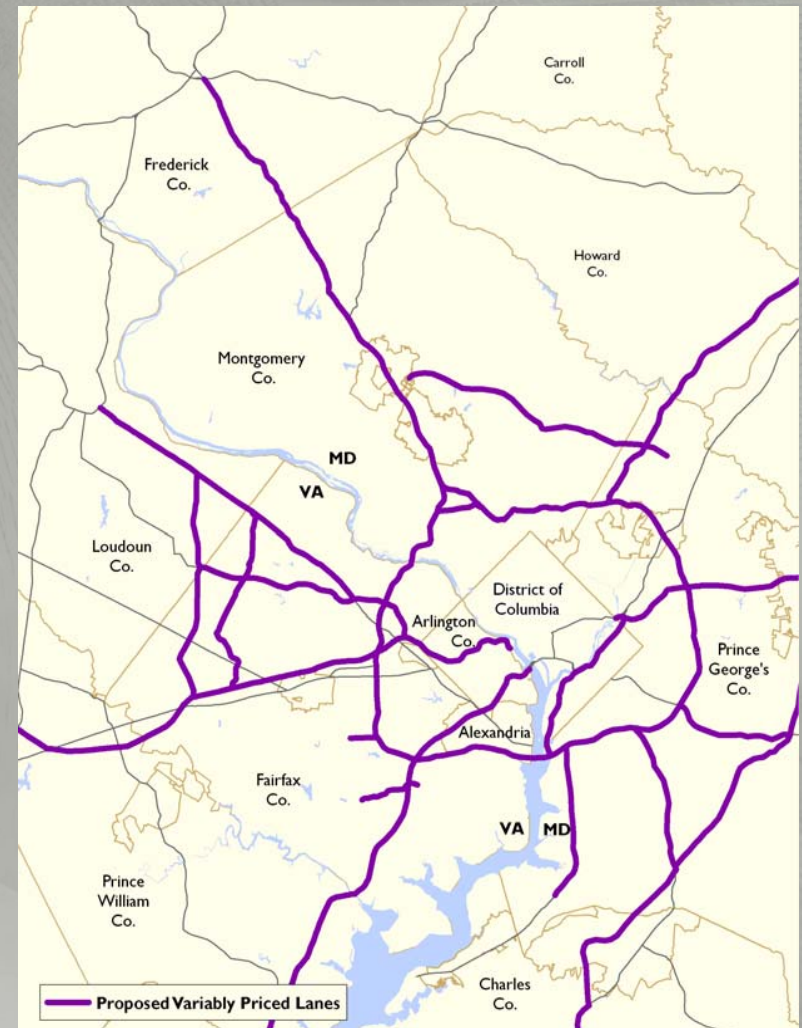
# Impacts of These Existing Scenarios

Compared to baseline forecasts for 2030



# Variably Priced Lanes Scenarios: *Starting Point*

- All Freeways:
  - Add 2 VPLs
- Arterials outside Beltway:
  - Add 1 VPL
- Existing HOV lanes:
  - Convert to VPLs
- Direct access ramps at key interchanges
- Incorporate existing transit service



# Variably Priced Lanes Scenarios: *Options*

- From Starting Point
  - Pare back network where demand is low, as indicated by low toll rates
    - Segments that have high toll rates in the peak direction only are changed to directional toll lanes
    - Segments with low toll rates in both directions are removed from network
  - Add variable pricing to existing DC bridges and other facilities
  - Apply tolls to existing capacity on parkways:
    - Baltimore-Washington, George Washington, Rock Creek, Clara Barton, and Suitland Parkways
  - Create a bus transit network operating on the network of VPLs; enhance bus speeds/frequencies

# Prioritizing Scenario Ideas

1. Mine the original scenarios for information about projects and strategies with the most “bang for the buck”
  - o Sensitivity analysis at regional and local scales
2. Public feedback on original scenarios
  - o Scenario needs to directly address public skepticism regarding availability of transportation funding and ability to “do density right”
3. Drill-down analysis indicates that the original scenarios can have a large impact on predicted travel behavior in small areas where concentrated land use and transit accommodation converge

# “Drilling Down” to Determine Local Impacts

## Travel Impacts of “Households In” Scenario for 5,200 Households Shifted from Gainesville to Tysons Corner

<b>Travel Mode</b>	<b>Change in Travel by Shifted Households</b>	<b>Total Percent Change</b>
SOV Trips	-2,400	-34%
HOV2+ Trips	-800	-89%
Transit Trips	1,600	533%
Walk/Bike Trips	2,400	1200%
Household VMT	-180,500	-62%



# "Drilling Down" (continued)

## Travel Impacts of "Households In" Scenario for 5,200 Households Shifted from Gainesville to U Street/Shaw Area

<b>Travel Mode</b>	<b>Change in Travel by Shifted Households</b>	<b>Total Percent Change</b>
SOV Trips	-5,500	-79%
HOV2+ Trips	-900	-100%
Transit Trips	4,000	1333%
Walk/Bike Trips	2,500	1250%
Household VMT	-223,900	-84%

# Developing the “What Would It Take?” Scenario

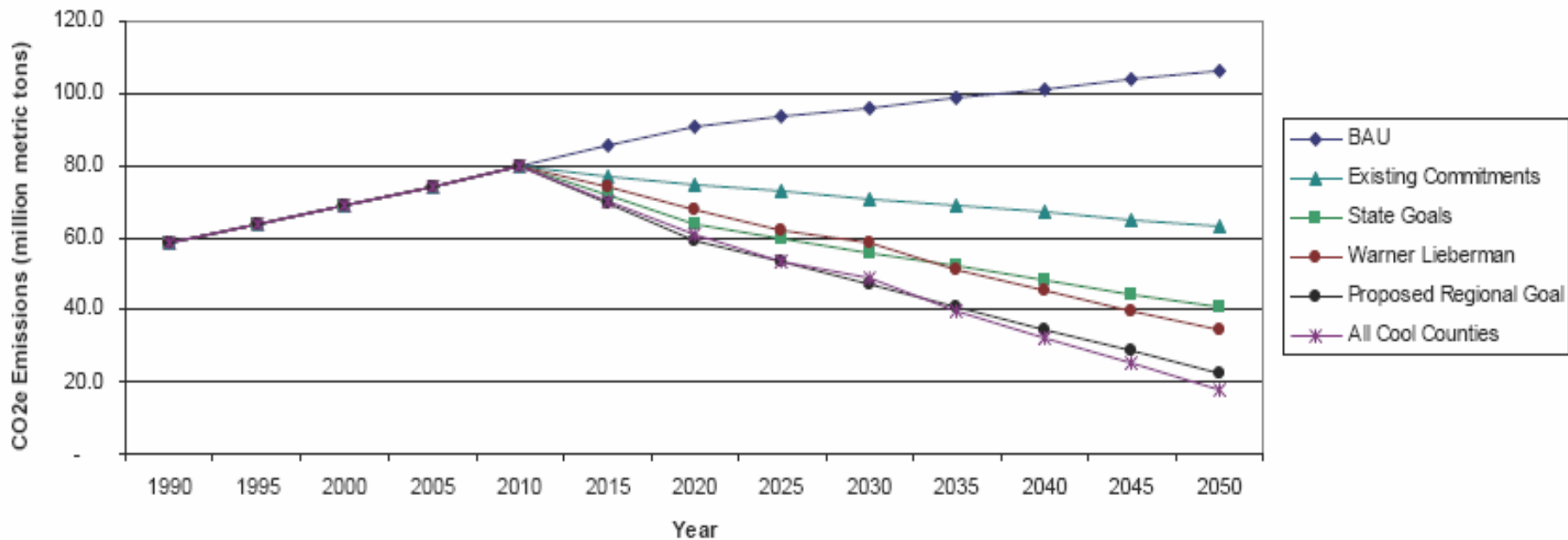
- o **Goal-oriented scenario exercise**
  - o Flexible enough to accommodate strategies and assumptions beyond those used to date
- o **Begin with one or more performance objectives and determine the combinations of interventions that might achieve those objectives**
- o **Designed to facilitate regional dialogue about the steps necessary to reach regional goals**

# What Goals or Objectives should be Explored?

- Original scenarios focused on transportation indicators
  - Average daily VMT
  - Peak-period congestion
  - Modal share
  - Also included some job accessibility and air quality measures (not CO<sub>2</sub>)
- A CO<sub>2</sub> emissions reduction goal makes sense for several reasons
  - Recent attention to climate change and transportation role (~30% of regional CO<sub>2</sub> emissions)
  - Opportunity to incorporate work of the COG Climate Change Steering Committee
    - Proposed a goal of 20% reduction from 2005 CO<sub>2</sub> emissions levels by 2020, and 70% reduction by 2050 (consistent with Warner-Lieberman bill)

# CO<sub>2</sub> Emissions Trend and Possible Goals

Possible Reduction Scenarios (2005-2050)



Source: Presentation by Joan Rohlfs, MWCOG/DEP to the COG Climate Change Steering Committee, January 23, 2008

# CO<sub>2</sub> Emissions and CAFE Standards

**CO<sub>2</sub> Emissions from Cars, Trucks, and Buses**  
**All figures are Annual Tons of CO<sub>2</sub> Emissions (in Millions) in the**  
**8-hour Ozone Non-Attainment Area**

	2005	2020	2030
Baseline Emissions	24.89	31.02	34.45
<b>% Change from 2005 levels</b>	---	<b>24.6%</b>	<b>38.4%</b>
Emissions With CAFE Reductions (35 mpg by 2020)	24.89	26.83	26.91
<b>% Change from 2005 levels</b>	---	<b>7.8%</b>	<b>8.1%</b>
CCSC Proposed Regional Goal	24.89	19.91	15.75
<b>% Change from 2005 levels</b>	---	<b>-20.0%</b>	<b>-36.7%</b>

- o Achieving proposed regional goal will require much more than CAFE
  - o Even a 55 mpg by 2020 "CAFÉ" goal would only achieve a 5.1% reduction below 2005 levels in 2020 and a 16.2% reduction in 2030.
  - o Plus, CAFE standards apply only to light-duty vehicles, which account for ~80% of regional CO<sub>2</sub> emissions

# What Possible Interventions should be Studied?

- Fuel efficiency of vehicle fleet
  - What would a stricter standard achieve?
- Emissions characteristics of the vehicle fleet
  - CO<sub>2</sub> emissions impact of increasing shares of alternative-fuel vehicles
- Regional Vehicle Miles Traveled (VMT)
  - Changes in average trip numbers and lengths due to various forces, including land use shifts exceeding those reflected in the other scenarios
- Additional changes in regional travel behavior
  - Shifts in aggregate travel behavior, such as increases in carpooling, transit, bicycling, and walking due to increased environmental consciousness
- Participation in a CO<sub>2</sub> Cap and Trade program
  - Opportunities provided by national, state or local climate change legislation

# Summary and Schedule

Staff proposes the development of a “CLRP Aspirations” Scenario and a “What Would It Take?” Scenario, with the following schedule:

- o Scenario development completed by **June 30, 2008**
- o Scenario analysis completed by **December 31, 2008**
- o Public outreach and comment by **June 30, 2009**
- o Possible integration of results into CLRP during full update in **2010**

# Next Steps

- o Review with TPB Technical Committee on April 4
- o Next meeting of the TPB Scenario Task Force at 10am on Wednesday April 16
- o Review with Planning Directors Advisory Committee on April 18