

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

Presentation to the National Capital Region
Transportation Planning Board

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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 CO₂ emissions reduction goal, and examines how such a goal could be achieved through different combinations of interventions

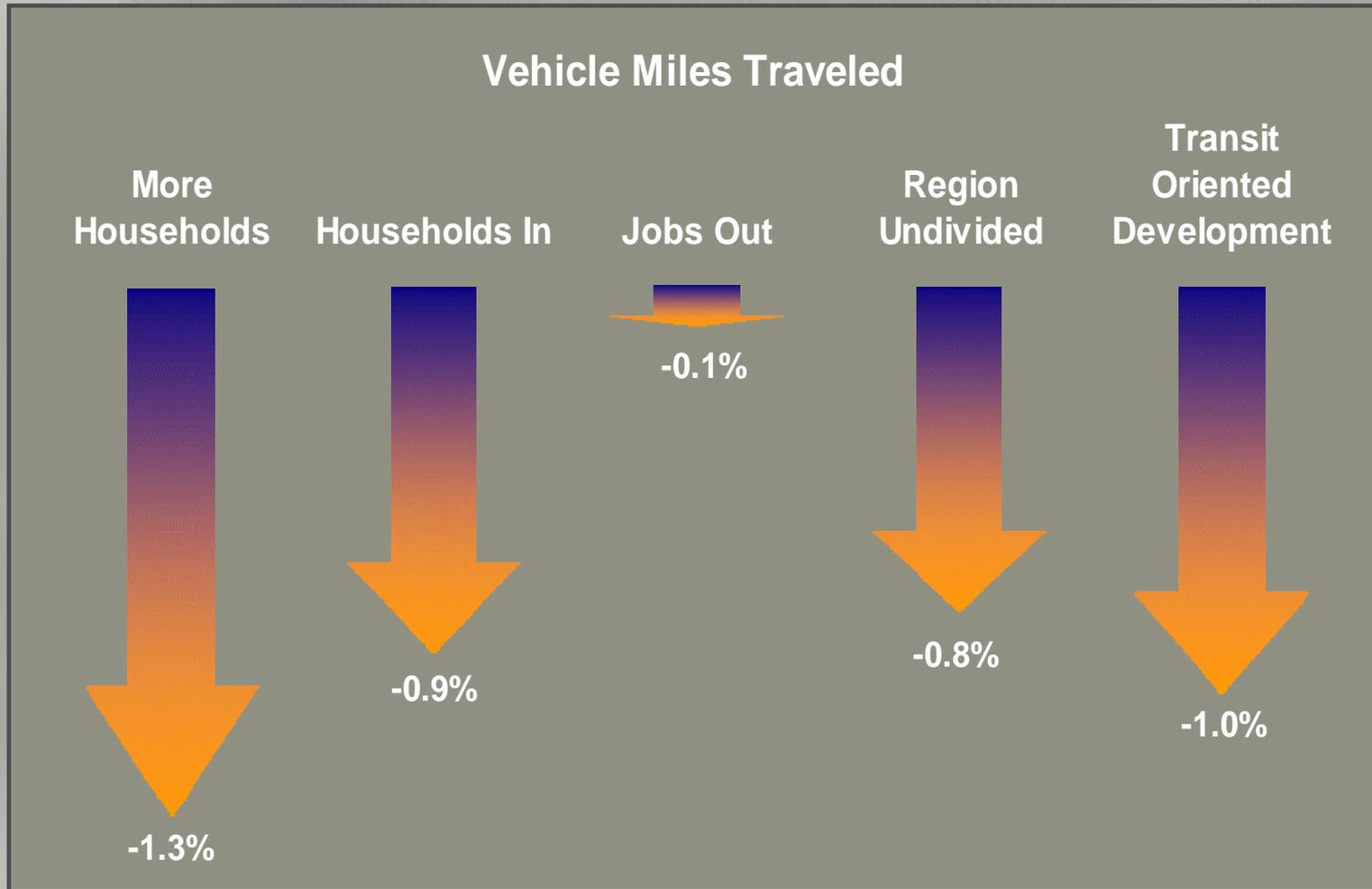
Intent of the “CLRP Aspirations” Scenario:

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

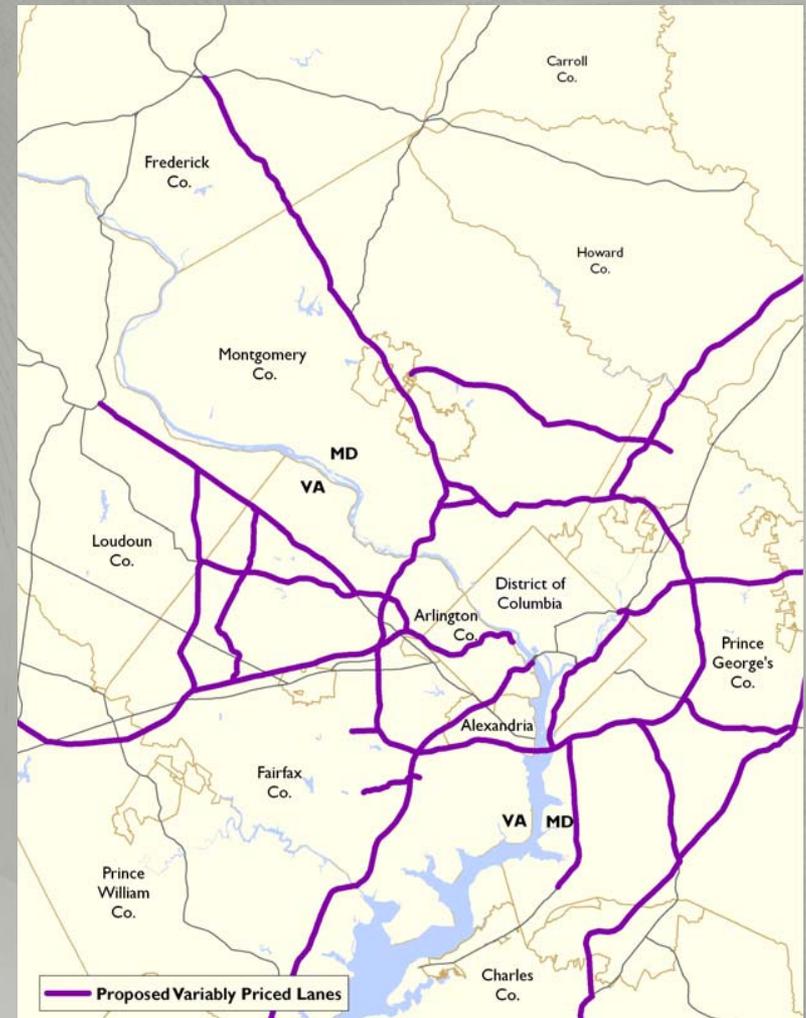
Impacts of These Existing Scenarios

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

| Travel Mode | Change in Travel by Shifted Households | Total Percent Change |
|--------------------|---|-----------------------------|
| 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

| Travel Mode | Change in Travel by Shifted Households | Total Percent Change |
|--------------------|---|---------------------------------|
| 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

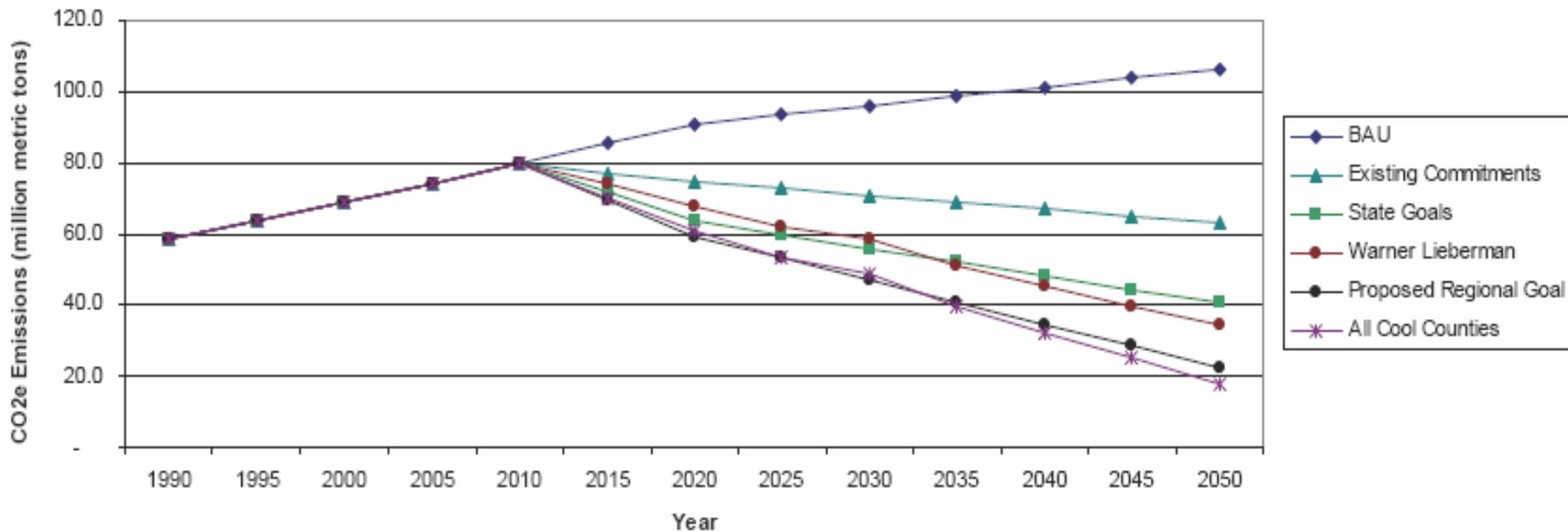
- o **Goal-oriented scenario exercise**
 - o Flexible enough to accommodate strategies and assumptions beyond those used to date
- o **Begin with one or more performance objectives and determine the combinations of interventions that might achieve those objectives**
- o **Designed to facilitate regional 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 CO₂)
- A CO₂ emissions reduction goal makes sense for several reasons
 - Recent attention to climate change and transportation role (~30% of regional CO₂ emissions)
 - Opportunity to incorporate work of the COG Climate Change Steering Committee
 - Proposed a goal of 20% reduction from 2005 CO₂ emissions levels by 2020, and 70% reduction by 2050 (consistent with Warner-Lieberman bill)

CO₂ 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

CO₂ Emissions and CAFE Standards

CO₂ Emissions from Cars, Trucks, and Buses

All figures are Annual Tons of CO₂ Emissions (in Millions) in the
8-hour Ozone Non-Attainment Area

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

- 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 CO₂ emissions

What Possible Interventions should be Studied?

- Fuel efficiency of vehicle fleet
 - What would a stricter standard achieve?
- Emissions characteristics of the vehicle fleet
 - CO₂ 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 CO₂ 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