

# National Capital Region Transportation Planning Board

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## MEMORANDUM

TO: TPB Scenario Study Task Force

FROM: Ronald F. Kirby  
Director, Department of  
Transportation Planning

SUBJECT: Planned Scenario Study Activities for the Remainder of FY2008 and Staff  
Proposal for FY2009 Activities

DATE: January 10, 2008

At the December 19, 2007 meeting of the TPB Scenario Study Task Force, TPB staff briefed the task force on planned scenario activities for the remainder of FY2008 along with possibilities for FY2009 activities. Discussion focused largely on ways in which TPB scenario planning activities could expand upon the previous effort through development of additional scenarios that could use combinations of land-use and transportation strategies along with updated baseline information and travel analysis techniques. A key question addressed by the task force was this: How could further Scenario Study activities achieve results that would not only be informative and compelling for public audiences but also useful as a tool in the regional planning process, especially the prioritization of transportation investment?

Following the discussion at the December 19 task force meeting, this memorandum provides additional detail on a proposed process for developing and analyzing additional regional land-use and transportation scenarios. It is intended to serve as a supplement to the December 13 memorandum broadly outlining FY2008 and 2009 Scenario Study activities. This proposal draws upon recommendations issued in February 2007 by the TPB Citizens Advisory Committee regarding further Scenario Study activities, along with the ideas of this task force and feedback received from public audiences during Scenario Study outreach.

## Further Detail on Scenario Study Activities Planned for the Remainder of FY2008

### *Development of Additional Scenarios*

The CAC, this task force, and others have identified several factors as having limited the relevance and impact of the Scenario Study results to date. Chief among these is the fact that the scenarios developed to this point have been essentially one-dimensional in approach; each scenario employs a distinct strategy but no scenarios have been studied that combine multiple strategies. While cost analysis was recently performed for the original scenarios and revenues

and costs were analyzed as part of the value-priced lanes scenarios, the Scenario Study has focused only limited attention to date on consideration of financial constraints. The study assessed the impacts of certain land-use and transportation strategies on regional transportation indicators, but has only touched upon non-transportation related indicators such as environmental and other quality-of-life measures.

The CAC pointed out some of these considerations in its February 2007 recommendations. Recommendation #6 in particular supports “the development of refined, new or composite scenarios that will identify packages of transportation projects and land use strategies that produce positive, synergistic results,” and calls for this process to “draw upon information developed from existing scenarios and from public feedback.” Developing and analyzing at least two additional scenarios, in a process as described below, could also facilitate the accomplishment of other CAC recommendations with regard to “drilling down” to local impacts, conducting sensitivity analysis, and identifying regional policy and investment priorities. Like the CAC, regional audiences also responded to Scenario Study information with ideas for additional analysis tasks (see page 17 of the Outreach Feedback Summary Report), including local-level impact analysis, expanded incorporation of non-transportation measures of success, and new scenarios that combine several transportation and land-use strategies.

With these considerations in mind, TPB staff proposes the development of two new scenarios during the remainder of FY2008: a “CLRP Aspirations Scenario” and a “What Would It Take?” Scenario. The effort would be spearheaded by the Scenario Study Task Force, and informed by the CAC recommendations and public feedback received over the past several months regarding the study.

### **1. CLRP Aspirations Scenario**

This scenario would represent a combination of land-use strategies from the existing scenarios along with a slate of transportation improvements that would build off of the current 2030 CLRP but remain generally within the realm of affordability for the region given expected availability of funds, including the incorporation of value-priced lane facilities as a revenue source. The scenario would adhere to the representations of travel behavior reflected in the current TPB travel demand model, and to other procedural guidelines required by the EPA for air quality conformity analysis. The land-use shifts and added transportation facilities included in the scenario would not necessarily be limited to those already included in one or more of the existing scenarios.

### **2. “What Would It Take?” Scenario**

Based on feedback from various sources as described above, it is clear that an additional scenario with a somewhat different approach is warranted. This scenario would take as a starting point one or more goals desired for achievement by 2030. They could include a certain percentage reduction in average VMT, congestion, or greenhouse gas emissions, or other environmental and quality of life indicators. For example, TPB staff analysis indicates that even under newly imposed federal CAFE standards mobile-source CO2 emissions in 2030 are expected to exceed 2002 levels by 16%. This scenario could consider a goal of

achieving zero growth or even a reduction in CO2 mobile source emissions by 2030. (See attached slides from a June 27, 2007 presentation to the COG Climate Change Steering Committee.) The scenario would examine, through sensitivity analyses using the TPB travel demand model and possibly other techniques, how such goals might be achieved through different combinations of implementation steps.

In addition to the land use shifts and transportation investments included in the CLRP Aspirations Plan Scenario, this second scenario exercise would be open to changes in modeling assumptions. For example, it might assume behavioral changes due to greater social awareness about carbon emissions or other factors that could lead to different mode shares than would otherwise be predicted by the model. It could also assume technological innovations that might have substantial impacts on vehicle fuels and emissions. The availability of preliminary data from the ongoing TPB Household Travel Survey toward the end of calendar year 2008 will permit new analysis of observed behavioral trends to further ground this exercise.

This scenario would be designed to facilitate regional dialogue with the public and among decision-makers about the steps necessary to implement a desired regional future, in a way that moves beyond the typical constraints of the TPB analysis process

## Proposed Scenario Study Activities for FY2009

It is proposed that the Scenario Study element of the FY2009 Unified Planning Work Program (UPWP) include two basic components: analysis of the two additional scenarios developed during the remainder of FY2008, and a new round of public outreach and consideration of the results of the scenario analyses.

### *Analysis of Additional Scenarios*

Both of the scenarios described above would be analyzed in relation to an updated baseline comprised of the Round 7.1 Cooperative Land-Use Forecasts for 2030, approved by the COG Board on January 9, 2008, and the 2030 CLRP as of the updates currently scheduled for approval by the TPB at its July 16, 2008 meeting.

The new scenarios, along with the baseline itself, could also be analyzed in relation to one or more other metropolitan areas around the country. This may indicate how conditions in the Washington Region and possibilities for change relate to the national picture, in particular recent and ongoing analyses that look at growth scenarios and environmental goals and indicators in other states and metropolitan areas.

As mentioned above, analysis of the additional scenarios would include to the extent possible non-transportation quality-of-life indicators, along with localized analysis of scenario impacts. A focus would be on sensitivity tests to determine which land-use shifts, transportation investments, and other public policy initiatives could have the greatest regional benefit.

## *Public Outreach and Consideration of Scenario Study Results in Regional Planning*

The ability to share the results of this analysis with the public in a meaningful, compelling manner, along with the ability to have these results considered in regional decision-making processes would be a key consideration of this work effort. This would include exploration of software tools that could facilitate better visualization of scenario results including easier, more replicable local-level analysis, and consideration of various quality-of-life indicators. TPB staff can brief the task force on such alternatives at a future meeting.

As noted in the December 13 memo to the task force, it is envisioned that a new round of public outreach would be undertaken in the latter half of FY2009, following the analysis described above. This outreach effort would be designed to solicit feedback not only on the scenarios themselves but on options for regional implementation steps such as prioritization of transportation projects at the regional level and regional commitment to a common set of land-use, transportation planning, and environmental goals. FY2009 would conclude with a report on feedback and recommendations for incorporating scenario planning activities into the regional planning process.

### Next Steps

A draft outline of the FY2009 UPWP reflecting the above proposed work activities will be presented to the TPB at its January 16, 2008 meeting. A complete draft of the FY2009 UPWP is scheduled to be presented at the February 20 TPB meeting, and a final version will be presented for approval by the TPB at its March 19 meeting. Based on comments received from the Scenario Study Task Force, TPB staff will review and refine the Regional Mobility and Accessibility Scenario Study work item in the draft FY2009 UPWP for presentation to the TPB at its February 20 and March 19 meetings. In the meantime, staff will proceed with the FY2008 activities described above, with continued advisement by the task force.

# **CO<sub>2</sub> Emissions from Cars, Trucks & Buses in the Metropolitan Washington Region**

Presentation to the  
COG Climate Change  
Steering Committee

Ronald F. Kirby  
Director of Transportation Planning

**June 27, 2007**

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## Reductions in Annual CO<sub>2</sub> Emissions (Millions of Tons) with “35 mpg by 2020” Federal CAFE Standards

	<b>2002</b>	<b>2020</b>	<b>2030</b>	<b>% Change 2002 - 2030</b>
Baseline	23.273	31.018	34.451	48%
CAFE Reductions	0	4.185	7.512	-
Percent Reductions	0	13.5	21.8	-
Reduced Emissions	23.273	26.833	26.939	16%

# Conclusions

- ▶ VOC and NO<sub>x</sub> mobile emissions are declining significantly even though overall vehicle travel is growing, due primarily to cleaner vehicles and fuels
- ▶ CO<sub>2</sub> mobile emissions are growing steadily. To achieve CO<sub>2</sub> reductions we need to:
  - ▶ Reduce CO<sub>2</sub> emissions per vehicle mile (e.g. California LEV II standards, Federal CAFE Standards)
  - ▶ Reduce vehicle miles of travel (Demand management, land use/transportation strategies)