

National Capital Region Transportation Planning Board

777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290 (202) 962-3310 Fax: (202) 962-3202 TDD: (202) 962-3213

MEMORANDUM

TO: TPB Scenario Study Task Force

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

SUBJECT: Development of New Scenarios for the TPB Regional Mobility and Accessibility
Scenario Study

DATE: April 4, 2008

Attached is an outline of a memo detailing the development of the two new scenarios to be prepared and presented to the TPB Scenario Study Task Force at its meeting on April 16. A brief report on the activities of the Scenario Study Task Force will be presented to the TPB at its April 16 meeting.

Outline of Memo and Presentation to the TPB Scenario Study Task Force

I. Review of the Proposed New Scenarios

- a) “CLRP Aspirations” Scenario
 - i) Adhere to the traditional constraints of the TPB modeling process for air quality conformity analysis, with the exception of the fiscal constraint
- b) “What Would It Take?” Scenario
 - i) Take as a starting point one or more goals desired for achievement in 2030, such as a specific reduction in mobile-source CO₂ emissions, and examine how such goals might be achieved through different combinations of implementation steps including some that cannot normally be factored into the TPB travel demand modeling process.
- c) The development of the new scenarios is scheduled to take place during the remainder of FY2008, with analysis of the scenarios scheduled for the first half of FY2009.

II. 2007 CLRP Performance Analysis

- a) Can be used to frame the goals and strategies of the scenario.
 - i) Metropolitan growth
 - (1) Most rapid in outer jurisdictions, and not necessarily in the activity clusters, which is a goal identified in the TPB Vision.
 - ii) Activity cluster analysis
 - (1) still see concentrated development with no transit in some locations and the inverse of transit without concentrated development in other locations
 - iii) Rising congestion
 - (1) lane miles of congestion up 43%, but see improvement around HOT lanes, where those corridors move from being highly congested in 2008 to congested in 2030.
 - iv) Increasing transit ridership
 - (1) Transit work trips are expected to rise significantly more than vehicle work trips; however the transit share of work trips is only expected to rise slightly
- b) Round 7.1 Cooperative Land-Use Forecasts and the 2008 CLRP will serve as the baseline for both the “CLRP Aspirations” scenario and the “What Would it Take” scenario.

III. Developing the CLRP Aspirations Scenario

- a) Criteria for inclusion in the scenario:
 - i) Land use shifts should be within reach for possible inclusion in the Cooperative Forecasts
 - (1) Areas should be able to realistically accommodate proposed densities
 - (2) Proposed densities should be compatible with existing or planned neighborhood character
 - ii) Transportation projects should be financially within reach:
 - (1) Realistic public funding sources
 - (a) Value capture
 - (b) Local/regional tax revenues
 - (c) New federal funding mechanisms
 - (i) Climate change legislation
 - (ii) SAFETEA-LU reauthorization or replacement
 - (2) Revenue streams from pricing selected facilities
- b) Schedule
 - i) Scenario Development: present – June 2008
 - ii) Scenario Analysis: June 2008 – February 2009
 - iii) Public Outreach: February 2009 – June 2009
 - iv) CLRP full four-year full update
 - (1) New survey results
 - (2) Finer grained analysis zones
 - (3) Extended planning horizon: 2040
 - (4) Will provide opportunity for incorporating results from the scenario study.

Developing the CLRP Aspirations Scenario, continued

- c) MOEs
 - i) Environmental:
 - (1) Air quality analysis
 - (2) Water quality: run-off, storm water, impervious surfaces
 - (3) Stay away zones and highly sensitive areas
 - ii) Travel Patterns:
 - (1) Lane miles of congestion
 - (2) Transit congestion
 - (3) Alternative modes: bicycle, walk, mass transit
 - iii) Accessibility
 - (1) Access to jobs and housing by highways, transit, walk-access transit
 - iv) Equity
 - (1) Accessibility by demographic groups
- d) Possible strategies to create highly accessible and highly developed areas
 - i) Implement high-quality transit services
 - (1) Circulator systems for intra-cluster travel
 - (2) Enhancements to the regional (rail and bus) transit networks
 - (3) Emphasis on currently underserved areas
 - ii) Concentrate development, jobs and housing near new and underutilized transit stations
 - iii) Implement regional tolling networks to manage freeway congestion, increase mobility and raise revenue for transit projects
- e) The ‘menu’ of transportation projects and land use strategies from which to develop the new scenario
 - i) Previous scenarios studied:
 - (1) More Households Scenario
 - (2) Households In Scenario
 - (3) Jobs Out Scenario
 - (4) Region Undivided Scenario
 - (5) Transit-Oriented Development Scenario
 - (6) Variably Priced Lanes Scenario – “DC Restrained”
 - (7) Variably Priced Lanes Scenario – “DC and Parkways Restrained”
 - ii) Public feedback from RMAS outreach
 - iii) Input from TPB subcommittees
 - (1) CAC
 - (2) Regional Bus Subcommittee

IV. Developing the “What Would It Take?” Scenario

- a) Possible Goals
 - i) A single broad-reaching goal, such as CO₂ reduction
 - (1) COG Climate Change Steering Committee:
 - (a) 20% below 2005 levels by 2020
 - (b) 70-80% below 2005 levels by 2050
 - ii) Other goals?
- b) Implementation Strategies
 - i) Vehicle and fuel technology
 - (1) Increased efficiency of traditional fuels
 - (a) CAFE standards
 - (b) Hybrid and highly fuel efficient vehicles
 - (2) Alternative-fuel vehicles (biofuels, electric power, hydrogen)
 - (a) Would use “average lifecycle fuel carbon intensity” value to accommodate for different technologies, which would account for total CO₂ emissions of the fuel from production, distribution and combustion.
 - ii) Reductions in VMT
 - (1) Changes in development patterns (TOD, infill)
 - (2) Changes in travel behavior
 - (a) Transit and HOV mode share
 - (b) Bike and walk trips
 - (c) Transit station “walk radius”
 - (d) Trip chaining
 - (e) Telecommuting and/or carpooling, such as through Commuter Connections
 - (3) Change in prices of travel modes
 - (a) Fuel costs
 - (b) Toll costs/congestion pricing
 - (c) Parking costs
 - (d) VMT fees
 - iii) Cap and trade programs
 - (1) Market for CO₂
 - (a) Cost per ton of CO₂ reduction by sector and strategy as a measure of cost-effectiveness
 - (b) Possible sale of emissions allowances to fund emissions reduction strategies
 - (2) Possible national legislation
 - (a) opportunities for additional funding of mass transit and other energy efficiency and VMT reduction strategies
- c) “Sliders” metaphor
 - i) Array of “sliders” representing the variables
 - ii) Scale for each “slider” would run from a minimum represented by the 2030 baseline, to a maximum represented by what it would take to reach the 2030 emissions reduction goal through a change *in that variable alone*, if possible
 - iii) Using the travel demand model and/or other analysis tools, different combinations of interventions could be assessed for their financial, political, and technological effectiveness and feasibility.