An Overview of the TPB
Regional Mobility and Accessibility Study

Introduction

In an amendment to the 2000 Constrained Long-Range Transportation Plan (CLRP) for the National Capital Region the TPB called for a special regional study entitled "Improving Regional Mobility and Accessibility Study." The defined purpose of this study is to:

> ***"evaluate alternative options to improve mobility and accessibility between and among regional activity centers and the regional core." This study "shall include the identification of 'additional highway and transit circumferential facilities and capacity, including Potomac River crossings where necessary and appropriate, that improve mobility and accessibility between and among regional activity centers and the regional core' (Vision Goal 2, Strategy 5) and that take into consideration the adopted land use plans of individual jurisdictions. The study shall also include the development of 'a regional congestion management program, including coordinated regional bus service, traffic operations improvements, transit, ridesharing, and telecommuting incentives, and pricing strategies.' (Vision Goal 5. Strategy 1.)"*** **[TPB Resolution TPB R12-2001]**

The purpose of this document is to provide an overview and description of the TPB Regional Mobility and Accessibility Study. This overview discusses the background and elements of this study, its organizational structure, the technical approach being undertaken and the work completed to date.

Background

In adopting the 2000 CLRP for National Capital Region several TPB members expressed great dissatisfaction in voting to approve a long-range transportation plan for the region that showed the performance of the region's transportation system worsening significantly over the next 25 years. Whereas daily travel on the regional highway system was projected to increase by almost 50 percent, it was determined that the region was likely to only have the available funding to expand highway capacity by little more than10 percent. This meant that not only was peak period traffic congestion on the region's highway network expected to become much worse, but periods of stop-and-go traffic conditions were likely to spread into more of the day. Similarly, the 2000 CLRP showed that congestion on the regional transit system was also going to increase significantly in the future because of a lack of available funding. An analysis by the Washington Metropolitan Transit Authority (WMATA) showed that without a significant amount of new and additional transit funding, the regional bus and rail system would be unable to accommodate projected ridership growth over the next 25 years. With the regional transit system unable to accommodate future demand, the already overloaded regional highway network would be forced to absorb an additional 100,000 daily auto trips, further worsening traffic congestion and increasing vehicle emissions.

In response to the concerns raised, the TPB added an amendment to the 2000 CLRP calling for the Regional Mobility and Accessibility Study to evaluate additional highway and transit options beyond those that could be currently funded and to examine the interaction of these transportation options with various land use considerations. Because federal requirements limit the transportation facilities included in the CLRP to only those that can be funded with revenues currently projected to be available over the next 25 years, the Regional Mobility and Accessibility Study would provide the TPB with the opportunity to examine additional facilities that could improve the future performance of the region's transportation system and would have a realistic possibility of being funded with the identification of additional transportation revenues.

Study Approach

In several work sessions the TPB directed staff to conduct the study using a "building-block" approach. The first step would be to identify a set of measures of effectiveness that would be used to evaluate the alternative options for improving regional mobility and accessibility. The second step would be to apply these measures of effectiveness to the current CLRP to identify the short-comings of this plan relative to the TPB's Vision. Next, with the active involvement of TPB, Metropolitan Development Policy Committee (MDPC), and Metropolitan Washington Air Quality Committee (MWAQC) technical and citizen committee members, several alternative regional transportation and land use scenarios for 2030 that could address the identified short-comings of the CLRP would be developed, specified, and analyzed.

The TPB also directed that a "regional congestion management" scenario focusing on operational and management improvements to maximize the region's existing and planned investment in transportation infrastructure be developed and analyzed in the first phase of this study. Then, based on the analysis of this regional congestion management scenario with current growth forecasts and several alternative land use scenarios, several additional transportation scenarios (including new highway and transit facilities) would be developed and analyzed with the alternative land use scenarios in the study's second phase. Following the second phase analysis, one to two "composite scenarios" would be further developed, analyzed and evaluated. The final results of this study would then be used to suggest and develop consensus for additional transportation facilities to be included in the region's long-range transportation plan along with a funding strategy that would raise the additional revenues needed to add these facilities to the CLRP.

Organizational Structure for Study

A Joint Technical Working Group (JTWG) composed of members of the TPB Technical Committee, the Planning Directors' Technical Advisory Committee and the MWAQC Technical Advisory Committee was established to provide the TPB with technical insight and guidance on this study. In addition, the TPB's Citizen Advisory Committee and the citizen advisory committees to MWAQC and MDPC were also invited to participate in the meetings of the JTWG.

During the past two years the JTWG has provided continuing technical guidance to staff in the development and conduct of a work plan to carry out this study. These work plan activities have included: (1) development of Measures of Effectiveness (MOEs), (2) analysis of the 2000 CLRP using the study MOEs and identification of its shortcomings relative to the TPB Vision, (3) specification of the elements of a regional congestion management scenario to be tested as part of this study**,** and (4) development of five alternative land use scenarios for analysis and testing.

Measure of Effectiveness and 2000 CLRP Shortcomings

Ten categories of measures of effectiveness have been defined for this study, which are:

- Land Use
- VMT Per Capita
- Travel Modal Shares
- Highway and Transit Congestion
- Highway and Transit Accessibility
- Air Quality
- Energy Consumption
- Water Quality
- Freight
- Safety

Using these measures of effectiveness to evaluate the 2000 CLRP the following issues were identified:

- The region is forecast to add twice as many jobs as households
- The region is projected to need an additional 250,000 in-commuters from outside the region
- Regional activity centers/clusters are expected to capture 70% of the region's future employment growth, but only 40% of its household growth
- Only 40% of the region's employment growth and 15% of its household growth is expected to occur near Metrorail and commuter rail stations
- Daily vehicle miles of travel is projected to increase significantly
- Peak period highway and transit congestion is expected to become worse
- Growth is uneven between the eastern and western portions of the region

Regional Congestion Management Scenario

A regional congestion management transportation scenario consisting of coordinated regional bus and transit service improvements, traffic operations improvements and increased incentives for ridesharing, telecommuting, bike and walk trips has been developed and specified for testing. This scenario assumes the additional regional bus, Metrorail and commuter rail capacity and service needed to fully accommodate projected transit ridership growth on existing segments of the regional transit system and planned

extensions to it already included in the CLRP (e.g. the extension of Metrorail to Dulles). The regional congestion management system has been termed the CLRP+ transportation scenario.

Alternative Land Use Scenarios

Five alternative land use scenarios have been developed for analysis in this study. These alternative land use scenarios look at different regional growth patterns in the 2010 to 2030 time period. Because of the growth already underway or approved the region's Planning Directors' believed little could be done to influence future regional growth patterns before 2010. The five alternative land use scenarios are:

(1) "Higher Household Growth in Region"

(2) "More Households in Inner Areas and Clusters"

(3) "More Jobs in Outer Areas"

(4) "The Region Undivided"

(5) "Transit-Oriented Development"

The **"Higher Household Growth in Region"** land use scenario assumes an additional 216,000 households beyond those forecast in the COG Round 6.4 growth forecasts for 2030 would be added to the metropolitan Washington region in the inner suburbs and core areas of the region. Correspondingly, commuting and other vehicle trips from areas outside the region would be reduced by an amount equivalent to the number of trips that would have been made by the additional households if they had located outside of the Washington region. The assumed additional 216,000 households would represent approximately a 9% increase in the total number of households in the region by 2030 and would increase projected 2010 to 2030 household growth in the region by 60%.

The **"More Household Growth in Inner Areas and Clusters"** land use scenario would place more of the forecast household growth in areas closer to major regional employment concentrations in core area jurisdictions and improve the mix of job and housing opportunities within regional activity clusters. This scenario would assume a shift of approximately 84,000 households, 23% of the forecast 2010 to 2030 household growth in the region, from areas outside of regional activity clusters to regional activity clusters in inner suburban and core area jurisdictions projected to have the greatest jobs/housing imbalance in 2030.

The **"More Jobs in Outer Areas"** land use scenario would place more of the forecast job growth in the outer suburban jurisdictions that are projected to have more workers than jobs in 2030. This scenario would assume a shift of approximately 82,000 jobs, approximately 11% of the forecast 2010 to 2030 employment growth, to regional activity clusters in the outer suburban jurisdictions from core area jurisdictions projected to have more jobs than resident

workers.

The **"Region Undivided"** land use scenario would place more future job and household growth in areas east of 16th NW in the District of Columbia, east of I-95 in Maryland, east of I-95 in Virginia and in the Columbia Pike corridor in Arlington County. This scenario would assume a shift of approximately 114,000 jobs (15% of the 2010 to 2030 employment growth) and 57,000 households (16% of the 2010 to 2030 household growth) to regional activity clusters in the eastern portion of the region from areas outside of regional activity clusters in the Western portion of the region.

The **"Transit-Oriented Development"** land use scenario would place more future job and household growth in areas around current and planned Metrorail stations, commuter rail stations or other transit centers. This scenario would assume a shift of approximately 150,000 jobs (19% of the 2010 to 2030 employment growth) and 125,000 households (35% of the 2010 to 2030 household growth) to transit station areas and other areas planned to be well-served by transit in the future from areas further away from these transit stations areas.

Current Status of Regional Mobility and Accessibility Study

Both the current CLRP (updated in 2003) and the regional congestion management CLRP+ Scenario have been modeled with the COG Round 6.4 growth forecasts and analyzed. Also the CLRP+ Scenario has been modeled and analyzed with the five alternative land use scenarios. The results of this analysis were presented to the TPB at its July 21, 2004 meeting.