Linking Transportation and Land Use Goals through Scenario Planning: A Case Study of the Metropolitan Washington Region

Purpose
1. Describe the development and analysis of the TPB's CLRP Aspirations Scenario Study, which was completed in fall 2011.

2. Compare the CLRP Aspirations Study to the recommendations outlined in recent federal transportation program legislation, specifically MAP-21.

3. Compare the suggested role of scenario planning for long-range transportation planning, with the results of the TPB's CLRP Aspirations Study.

Background
The National Capital Region Transportation Planning Board (TPB) is the Metropolitan Planning Organization (MPO) for the Metropolitan Washington area which covers approximately 5,300 square miles with 5.4 million people. The TPB is housed within the Metropolitan Washington Council of Governments (MWCOG). The TPB is responsible for maintaining the Financially Constrained Long Range Transportation Plan (CLRP), which is required by federal planning regulations and includes all regionally significant transportation projects and programs that are planned in the region over at least the next 20 years.

The CLRP only includes projects for which funding is "reasonably expected to be available" which limits the ability of the CLRP to address all of the region's transportation challenges. Due to funding limitations, the region is focusing a majority of future funding on operations and maintenance of the existing transportation system rather than on expansion, despite forecasts of significant increases in congestion through 2030.

Scenario Planning
Like many MPOs, the TPB uses scenario planning to study the potential impact of future development and transportation plans. Previous TPB studies focused on critical issues of land use in transportation planning. The full CLRP system scenario combines a land use component of denser and more transit-oriented development as compared to current projections of the future, a regional network of variably priced lanes (VPLs), and high-quality bus rapid transit (BRT) and circulator bus service focused on supporting the alternative land use scenario. Two variations of this scenario were developed as sensitivity tests: (1) to analyze the impact of land use changes without the VPL and BRT components; and (2) to analyze a variation of the this scenario were developed as sensitivity tests: (1) to analyze the impact of land use changes without the VPL and BRT components; and (2) to analyze a variation of the CLRP Aspirations Scenario Study demonstrated a process for regional land use planning that balances regional goals with the planning responsibilities and priorities of local jurisdictions.

The CLRP Aspirations Scenario Study

In evaluating the scenarios, the CLRP Aspirations Study addressed three of the six outcome-oriented national goals specified by MAP-21: congestion reduction, environmental sustainability, and system reliability. In terms of congestion reduction, the analysis showed that both of the scenarios with VPL networks reduced congestion in the modelled area. In terms of environmental sustainability, emission modeling was completed and the scenarios demonstrated adherence to submitted criteria pollutant budgets. For system reliability, the VPL network provided travel time reliability for vehicles, including BRT vehicles, traveling in the VPLs.

Major Findings
The CLRP Aspirations Scenario Study demonstrated a process for regional land use planning that balances regional goals with the planning responsibilities and priorities of local jurisdictions. All six recommendations for scenario development included in MAP-21 were considered in the CLRP Aspirations Scenario Study. The TPB considered potential regional investment strategies in the VPL network, and BRT system, compared assumed (baseline) and alternative (Aspirations) population and employment distributions, developed scenarios that met or improved upon baseline conditions in terms of transportation network performance, and demonstrated that the revenues estimated could support one of the scenarios. However, new MAP-21 requirements on maintaining the number of toll-free non-HOV lanes will require a reevaluation of the VPL networks as designed.

Next Steps
The CLRP Aspirations Scenario Study used sketch level planning, and did not address all of the realities of planning a regional VPL network including the new MAP-21 requirements on maintaining the number of toll-free non-HOV lanes, the challenge of planning a network that spans a tri-state area, operational issues, and the public perception of variably priced lanes. The CLRP Aspirations Scenario Study provides the examples of alternative planning futures for the region and offers a useful starting point for defining regional transportation and land use priorities. Using work completed to date, the TPB is developing a Regional Transportation Prioritization Plan (RTPP). As part of the public outreach effort, a series of long-term scenario conditions, including components of the CLRP Aspirations Scenario Study, will be presented to illustrate long-term transportation and land use strategies. Participants will be asked to consider those scenarios to address the region's transportation and land use challenges and suggest additional scenarios for consideration.

The RTPP will provide guidance for developing scenarios and taking a performance-based approach to evaluating scenarios. The TPB plans to consider all of the national goals for the federal transportation program as outlined in MAP-21 in its future scenario work, and to use the development of the RTPP as an opportunity to establish locally-derived performance measures.

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For more information please visit: http://www.mwcog.org/clrp/elements/scenarios.asp