Background Information on the Long-Range Transportation Plan and Scenario Planning for the Boston Region MPO's June 8, 2026, Community Advisory Council Meeting

This background document is intended to help Community Advisory Council members prepare for the June 8 discussion about future forces that could affect transportation in the Boston region.

What is the Long-Range Transportation Plan?

The Long-Range Transportation Plan, often referred to as the LRTP, establishes a vision for the Boston region's transportation system over a twenty-year planning timeframe. The LRTP describes the general outcomes the MPO's work and investments strive to achieve. It also guides both capital investments and research to support that vision. In simple terms, the LRTP helps the MPO decide what transportation outcomes it is working toward and how future investments should support those outcomes.

The next LRTP is anticipated to be released for an official public review period in the summer of 2028 and will be in effect beginning in October 2028—with updates occurring every five years. The next LRTP will consider future transportation conditions through 2050.

The development of the LRTP is a five-year process, and the development of the next LRTP began in the fall of 2023. The first step in the process is to compile and analyze the latest data, including public input submitted to the MPO, to determine the region's transportation needs. MPO staff anticipate publishing the results of the needs assessment later this year. The next phase of the process is scenario planning.

What is scenario planning?

Scenario planning is an exercise that many MPOs use as part of their long-range planning activities. Scenario planning allows the MPO to contemplate the impact of potential forces affecting the transportation system and potential planning decisions. This helps decision-makers consider strategies that may work well under different future conditions. MPO staff will use the MPO's travel demand model as the primary tool for exploring the future impact of forces that influence the Boston region's transportation system.

At the June 8 Community Advisory Council meeting, staff will lead a conversation with Advisory Council members to consider the forces that could significantly impact the Boston region's transportation system. Examples of these forces include the rise of autonomous vehicles, the increasing impacts of climate change, and trends in remote work. The June discussion will help MPO staff identify forces and factors to inform how the travel demand model can be used to forecast multiple possible transportation futures.

What is a travel demand model?

The MPO has maintained a travel demand model for the Boston region for over four decades. In transportation planning, travel demand models are used to understand how changing land use, transportation infrastructure, and policy decisions interact. The current regional travel demand model is TDM23, built to support the MPO's long-range planning efforts.

Covering all of Massachusetts and Rhode Island, and parts of southeastern New Hampshire, TDM23 estimates travel on surface transportation for the "average weekday." The average weekday is meant to represent traffic conditions, transit boardings, and overall travel behavior for a fall or spring day when school is in session, it is not a holiday, and the weather is fine.

The relationship of land use, transportation infrastructure, and policy is developed using travel surveys and calibrated to reproduce current conditions of traffic, transit ridership, and travel flows.

The land use estimates and forecasts are produced by the Metropolitan Area Planning Council's (MAPC) UrbanSim land use model. UrbanSim uses population and employment data to estimate where people and jobs may be located in the future. These estimates are organized by geographic zones, which helps TDM23 accurately simulate travel patterns based on residential and employment locations across Massachusetts.

In application, the travel model calibrated to current conditions is then fed new inputs representing how it is believed those factors will change, enabling exploration of potential outcomes. Outputs of travel demand models can be used to compare different infrastructure plans based on estimations of traffic and transit ridership, greenhouse gas emissions, and potential effects on populations that have historically experienced negative impacts from the transportation system.

A travel demand model is not a crystal ball. The estimates from a model provide insights into how a complicated system interacts, but do not represent what will happen in the real world. There are many factors that are outside the scope of the model, and it would be impossible to include them all. However, seeing how a modeled transportation system responds to the defined inputs, and even the practice of defining the inputs, can assist in a better understanding of the implications of decisions.

At the June 8 meeting, the Community Advisory Council members will be invited to suggest future forces and factors that MPO staff can consider as part of the scenario planning process.