

ISSUE BRIEF: Data and Technology

Better Decision-Making, Enhanced Regional Authority

Transportation, land-use and other decisions impacting the built environment are not made in a vacuum. Councils of Governments (COGs) and Metropolitan Planning Organizations (MPOs) – large and small, urban and rural – use the most up-to-date data available to create models that forecast future transportation and land-use needs for their regions. For over 50 years, the modeling done at most COGs/MPOs has been based on the four-step, trip-based process factoring trip generation and distribution, mode choice and route assignment. The National Association of Regional Councils (NARC) is working to establish policy and program changes at all levels of government to improve data collection and promulgation and the technology available to aid the regional planning process.

There are certain limitations surrounding the four-step model. Regions are faced with more complex planning scenarios requiring policy-makers to understand a wider range of variables, particularly the behaviors of people using a region's infrastructure. While the current four-step model is not designed to provide this in-depth analysis and level of detail, the availability and lack of access to good data is at the root of the shortcomings inherent in all models. Making the situation of collecting data and modeling more difficult are the inconsistencies and conflicting requirements between federal agencies on modeling procedures and protocols.

A recent report released by the Transportation Research Board (TRB) of the National Academies of Science, "Metropolitan Travel Forecasting: Current Practices and Future Direction," sites the shortcomings inherent in current modeling practices. The issues outlined in the report are not new and have been recognized within the regional planning community. Understanding the limitations and the fact that models are not operating as effectively as possible, COGs and MPOs are refining and improving their forecasting to ensure informed regional transportation and land-use decisions are being made. These efforts include, but are not limited to some agencies' experimentation with activity-based models and utilizing peer reviews.

Better data is needed to address emerging transportation, land-use and environmental issues within this complex landscape. Good quality data is required for model development and validation. Data streams defined for COG/MPO modeling should be implemented as continuous data collection programs and not as large scale episodic survey programs. Ideally, data collection efforts for model development to application should become integrated into all regional transportation planning programs. The reality of this integration requires additional guidance from planning partners and stakeholders. For guidance and further direction on the technical aspects of improving modeling and data collection, NARC calls for a technical compendium as a follow-up to the most recent forecasting report issue by TRB to address data collection in more detail, as well as other lingering technical questions surrounding the recommendations.

NARC acknowledges that a federal vision and additional resources are needed to guide the standardization of modeling requirements across federal programs, and calls for new modeling and related technology programs to focus on targeted efforts to improve data collection and dissemination. Streamlining existing federal program resources should be considered as a potential funding source for these efforts. Another funding vehicle to be considered is the establishment of a research and technology program where MPOs and COGs can pool their resources to advance the state of the practice.

More exploration and information is needed on the costs associated with the advancement of new modeling techniques. Before investing considerable resources into new technologies, regional planning agencies must be assured that the investment will generate better, more accurate results. In the absence of additional funding, state, regional and local governments can continue taking steps to improve data collection and modeling. These issues should be considered and factored into collaboration and capacity building with private sector partners. Peer reviews and on-going dialogues with colleagues about emerging data and technology issues will benefit the regional planning process.

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