MTI Researches New Directions for Caltrans Modeling

New study suggests ways that the agency could improve its data analyses.

San José, Calif., August 3, 2016 – The California Department of Transportation (Caltrans) is in the process of exploring ways to improve its approach to transport modeling. In a new study by Matthew Holian, PhD and Ralph McLaughlin, PhD, the possibility is raised that Caltrans should revise its modeling to take into account changes in demand when roads are improved – and that it should analyze transport projects across more modes. Structural changes within the agency might also facilitate better information-sharing. The study, "Benefit-Cost Analysis for Transportation Planning and Public Policy: Towards Multimodal Demand Modeling" outlines actions that Caltrans could take to increase the effectiveness of its transport projections.

Dr. Holian explains how, "In addition to focusing on models for planning, we also carried out an improved retrospective public policy analysis that assesses past investments in rail transit across the United States. In our public policy analysis that integrates highway and transit data, we provide a stark example of how simple it can be to account for multimodal travel in benefit-cost analysis (BCA), and that doing so can significantly affect the conclusions of the analysis. Using this simple approach as inspiration, we turn to BCA for planning and again find that simple but powerful approaches hold promise for advancing practice at state DOTs as well. We think our study will be of interest not only to staff and decision makers at DOTs, but also to academics, public policy analysts, policy makers, students, and members of the public."

As an example of a simple planning solution identified through this research, the investigative team pointed out that "Caltrans might be able to undertake more integrated analysis *by simply analyzing highway and road projects as transit projects*, as transit project analysis in Cal-B/C is already multimodal, while highway and road project analysis is not. This possibility should be explored, and if feasible, well documented."

The researchers recommend further exploring the following:

1.) Adding an induced-demand function to the Cal-B/C model;
2.) Encouraging multimodal modeling and providing the support needed to carry it out;
3.) Having the users of Cal-B/C incorporate build and no-build average daily traffic estimates from travel demand models;
4.) Using a BCA post processor for travel demand models;
5.) Consider formal and informal structure changes, up to and including mergers between offices and branches, so that intra-agency collaboration is increased; and
6.) Rethinking relationships with external partners, including consultants and universities, to leverage outside expertise while ensuring that internal expertise is also adequate to the tasks at hand.

Overall, says Dr. Holian, "We hope that some of these recommendations prove to be worthy of adopting, but we will consider this report to be a success even if it only sparks conversations that lead to smarter spending. With billions of dollars on the line, even a small success in improving BCA could add considerable value to society."

For a free, no-registration download, go to http://transweb.sjsu.edu/project/1203.html.

Tweet This: Caltrans should consider multimodal modeling – and maybe look at how road improvements can increase demand. #InducedDemand http://tinyurl.com/jpbhvz4

ABOUT THE PRINCIPAL INVESTIGATOR

Matthew J. Holian, PhD, is an Associate Professor at San José State University in the Economics Department. He is also a research associate at MTI, and he currently teaches Introduction to Transportation Funding and Finance in the Transportation Management Masters degree program, which is supported by MTI at SJSU. He completed his PhD in Economics in 2008 at Ohio State University, and his recent scholarly work has appeared in publications such as *Journal of the Association of Environmental and Resource Economists* and *Ecological Economics*.

ABOUT THE MINETA TRANSPORTATION INSTITUTE

The Mineta Transportation Institute (MTI) conducts research, education, and information and technology transfer, focusing on multimodal surface transportation policy and management issues, especially as they relate to transit. The Institute has been funded by Congress through the U.S. Department of Transportation's (DOT) Research and Innovative Technology Administration, by the California Legislature, through the Department of Transportation (Caltrans), and by other public and private grants and donations, including grants from the U.S. Department of Homeland Security. The Institute operates from the College of Business at San José State University. Visit MTI at transweb.sjsu.edu.

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