

Contact: Donna Maurillo
Communications Director
831-234-4009
donna.maurillo (at) sjsu.edu

New research helps planners address California's air quality and urban sprawl controls
Mineta Transportation Institute issues third report in a series focused on AB32 and SB375

San Jose, Calif., June 7, 2012 – The Mineta Transportation Institute (transweb.sjsu.edu) has released a peer-reviewed research report, [*An Economic and Life Cycle Analysis of Regional Land Use and Transportation Plans*](#). This study is the third in a series that applies a new form of spatial economic model to examine the economic effects, the distribution of those effects, and their implications for California's Assembly Bill (AB) 32 and Senate Bill (SB) 375 implementation. These bills are intended to significantly reduce greenhouse gases (GHG) and urban sprawl by 2050. Taken as a whole, the three reports provide new and expanded policy insights to help transportation and land use planners meet those stringent controls. The free 72-page report is available for download at transweb.sjsu.edu/project/1008.html

Principal investigators were Caroline Rodier, PhD, and Elliot Martin, PhD, with Margot Spiller, MS MCP, John Abraham, PhD, and Doug Hunt, PhD.

“When measuring GHG, the accepted practice has been to evaluate the effects only from vehicle emissions,” said Dr. Rodier. “However, this work uses newer models that evaluate GHG effects not only from transportation, but also from the broader economic system. It gives a much more holistic view of what outcomes to expect.”

The first publication in the series, [*Equity Analysis of Land Use and Transport Plans Using an Integrated Spatial Model*](#), explored the AB32 requirement that economic and equity effects of mechanisms leveraged to achieve GHG targets (i.e., land use and transportation plans under SB375) should be evaluated prior to implementation.

The second publication [*Potential Economic Consequences of Local Nonconformity to Regional Land Use and Transportation Plans Using a Spatial Economic Model*](#), investigated how a local government's decision not to comply with SB375 could change the geographic distribution of economic benefits, and under what circumstances this change may be an incentive or disincentive for voluntary SB375 implementation.

The current publication builds on the second one by exploring how changes in housing supply can drive local economic incentives or disincentives for compliance. The current study also includes an analysis of the lifecycle GHG effects due to changes in production and consumption associated with transportation and land use plans in the Sacramento region. The executive summary and report include findings from both the current and previous two publications.

“This is a significant body of work that can help cities determine the best direction for GHG reductions while supporting economic health,” said Dr. Rodier.

Key findings and policy recommendations include:

- Coordinated land use and transportation plans, such as those envisioned by SB375, may reduce housing, transport, and labor costs and increase net economic benefits.

- A shift in the supply of larger, luxury single-family to multi-family housing in land use and transportation plans may benefit all but the highest income household (assuming consumer preferences remain constant from the model estimation and calibration year 2000).
- The overall reduction in home size from this shift in housing supply may more than offset increases in lifecycle GHG emissions due to greater economic production that may result from the plan.

The report includes 20 tables and figures, including PECAS Economic Activity Sectors; Assumptions Applied to Housing Data in EIOLCA; Probability Density Function of Average Consumer Surplus; Three-Level Nesting Structure Used in Activity Allocation Module; and more. Free copies can be downloaded from transweb.sjsu.edu/project/1008.html

ABOUT THE PRINCIPAL INVESTIGATORS

Caroline Rodier, PhD, is associate director of the Urban Land Use and Transportation Center (ULTRANS) at the University of California, Davis. Her research areas include transportation and environmental planning and policy analysis. She has applied land use and transportation demand models to evaluate the travel, economic, equity, and air quality effects of a wide range of transportation and land use policies, including intelligent transportation systems technologies, high occupancy vehicle lanes, transit improvements, road pricing, and land use control measures. Dr. Rodier provided extensive research support to the California Air Resources Board as it developed the scoping plan for California Assembly Bill 32, the Global Warming Solutions Act.

Elliot William Martin, PhD, is an assistant research engineer at the Transportation Sustainability Research Center (TSRC) within the Institute of Transportation Studies at University of California, Berkeley. He holds a PhD in civil and environmental engineering and a dual Master's Degree in transportation engineering and city planning, all from University of California, Berkeley. Previously, he was an assistant economist at the Federal Reserve Bank of Richmond. He graduated from Johns Hopkins University with a Bachelor's Degree in economics and computer science.

ABOUT THE MINETA TRANSPORTATION INSTITUTE

The [Mineta Transportation Institute](http://transweb.sjsu.edu) (MTI) conducts research, education, and information and technology transfer, focusing on multimodal surface transportation policy and management issues, especially as they relate to transit. MTI was established by Congress in 1991 as part of the Intermodal Surface Transportation Efficiency Act (ISTEA) and was reauthorized under TEA-21 and again under SAFETEA-LU. The Institute has been funded by Congress through the US 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 US Department of Homeland Security. DOT selected MTI as a National Center of Excellence following competitions in 2002 and 2006. The internationally respected members of the MTI Board of Trustees represent all major surface transportation modes. MTI's focus on policy and management resulted from the Board's assessment of the transportation industry's unmet needs. That led directly to choosing the San José State University College of Business as the Institute's home. Visit transweb.sjsu.edu or Twitter [@minetatrans](https://twitter.com/minetatrans)

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