

Project Summary

Tools for Regional Transportation Planning and GHG Reduction

July 2009

FOCUS

The goal of this project is to implement the most advanced land use/transportation/economic modeling tools for California and its Metropolitan Planning Organizations (MPOs) in cooperation with local governments to guide GHG reduction planning within regional and general plans, transportation plans, and economic and housing initiatives. These advanced models offer strong scenario analysis tools for use by all stakeholders, to reduce vehicle travel and thus GHG emissions, increase economic viability, and ultimately reshape California's communities into sustainable places with walkable neighborhoods, more mobility options, and better quality of life. This multi-year project is supported by state, federal, and regional government agencies, and by the Hewlett, Surdna, and Rockefeller foundations.

BACKGROUND

California's *Global Warming Solutions Act of 2006* (AB 32) and the state's groundbreaking 2008 law establishing a framework for regional planning (SB 375) are leading California and the nation in positive new directions to reduce greenhouse gas (GHG) production. These strong measures require sophisticated tools to gauge the effects of policy choices and infrastructure investments that lead to changes in land use patterns to reduce vehicle travel and increase economic viability.

The Urban Land Use and Transportation Center (ULTRANS) within the UC Davis Institute of Transportation Studies is leading the nation in producing the most comprehensive statewide model that integrates land use, transportation and economic activity. ULTRANS has completed a proof-of-concept for its statewide modeling methodology and has started an applied production version of this essential planning tool. The statewide integrated land use, transportation, and economic model will be coupled with similar regional MPO models throughout California and will serve as a national and international example of fully integrated policy and infrastructure investment modeling. It will demonstrate the capability of projecting the statewide impacts of regional policies and investments.

STATEWIDE INTEGRATION

Nested regional and statewide models will have the capacity to determine the broad statewide effects of policy choices such as cap and trade, gas taxes, and large-scale infrastructure/high speed rail. Concurrently, regional models will have the capacity to test local infrastructure investment and regional policy choices in the context of a statewide policy framework, such as hot lanes, congestion pricing, transit-oriented developments, local land use policy, and air pollution and climate change policies. This integration of state and regional models is essential to understanding the interaction between policy and infrastructure choices locally and throughout the state.

To share information, the statewide and regional models must have common modeling platforms, shared modeling procedures, and similar data warehouses. ULTRANS and regional planning agencies statewide have a long history of collaborating on models as well as developing and sharing data. ULTRANS began this project in close collaboration with the Sacramento Area Council of Governments' (SACOG) Blueprint Project, and is now expanding its work with other California MPOs

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to ensure that regional modeling tools statewide will work together. ULTRANS has worked closely with California's four major regions to ensure that spatially explicit versions of the same integrated model planned for the state are used throughout the state, and now has formal agreements with all four to continue that partnership.

Working independently and together, the statewide and regional models will enable California to increase GHG savings through better land use and transportation planning. The improvements in decision support systems (models, geographic information systems, mapping and presentation materials, and public participation programs) that land use and transportation decision-making depend on at all levels can be especially important in these tough economic times. Bringing this experience and expertise to other MPOs and to California state agencies will be a cost-effective strategy that enables them to move forward quickly at minimal cost and time.

NATIONAL NEXUS

This work will have a profound effect on forecasting the impacts of regional planning choices under SB 375, but perhaps most important, it will lead the nation in a new direction of understanding the impact of infrastructure investment and policy choices on the economy and the environment. If this collaboration is fully supported, it will rapidly grow to involve the nesting of all California MPO models in a statewide framework—giving us a complete understanding of state, regional and inter-regional interactions.

Establishing this relationship between state and regional tools provides a national example of how collaboration and technology can support excellence in decision-making. Outreach to the public and to local governments through the use of computer models has proven to stimulate community action and political success in introducing innovative land use change. For example, the recently completed SACOG Blueprint Project resulted in community choice for more growth to be in higher density and mixed use patterns when the models clarified the implications of the policy and public investment choices. Providing this kind of decision support at a statewide and national level will play a key role in introducing expanded choice for housing types, transit options and alternative economic models.

RESULTS

This project will result in the implementation of comprehensive integrated modeling tools to substantially advance our ability to make wiser land use and transportation decisions that include consideration of environmental and economic impacts. We believe the outcome of these efforts could be a revolution in land use management, urban design, and traveler behavior, and lead to a transformation of the entire transport system.

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