



## *Development of an Acceptable Methodology for Estimating Trip-Generation Rates of Smart Growth Land Use Projects*

**Objective:** The goal of this effort is to develop an acceptable methodology that Practitioners can use to estimate multimodal trip-generation rates for transportation impact analyses (TIAs) of “smart growth” land use development projects proposed in California (such as urban infill, downtowns, pedestrian and transit-oriented developments, mixed land uses, etc.) Such a methodology is needed to more accurately estimate impacts and to identify appropriate multimodal improvements to help “mitigate” such projects.

**Why?** The California Environmental Quality Act (CEQA) and other State, Federal, and local laws require the identification, analysis, and mitigation of transportation-related impacts of proposed land use projects. Local agencies typically require the preparation of a Transportation Impact Analysis of major projects. A first step in preparing a TIA is estimating the number and types of vehicles and other travel expected to be associated with a proposed land use project (during peak traffic periods and all day), commonly referred to as “trip-generation rates.” Practitioners typically obtain vehicular trip-generation rates from national data collected primarily at suburban locations that lack good transit or pedestrian facilities. However, recent studies indicate that such data significantly over-estimates automobile traffic associated with smart growth land use projects (and such data is not supposed to be used in downtown areas). Unfortunately, there is currently no commonly accepted methodology, tool, or data available in the U.S. for estimating travel associated with smart growth land use projects. This makes it extremely difficult to accurately forecast impacts of such projects, or to identify and implement appropriate and adequate multimodal “mitigation measures” for walking, biking, and transit use -- in addition to typical roadway improvements.

**How?** With ongoing input from a team of California practitioners, UC Davis researchers are identifying and assessing available research and methodologies on quantitative relationships among vehicle travel, mode choice, land use location and design, and other resources. They will then select or develop a methodology appropriate to estimate multimodal travel of smart growth land uses that will be acceptable for use in preparing TIAs for such projects. Finally, they will collect cordon count data at selected smart growth sites in California and use it to calibrate and validate the recommended methodology.

**Products:** This project will produce, describe, and disseminate: An analysis of available methodologies and tools; a proposed smart growth trip-generation rates estimation methodology; cordon count data collected at representative smart growth sites in California; a calibrated methodology; documentation and a Users’ manual for the methodology; a final report of the entire study; and a workshop to describe and disseminate the results. All products will be posted free-of-charge on a publicly available website.

**Outcomes:** The successful completion of this project will enable practitioners and public agencies to more accurately estimate transportation impacts and benefits of proposed smart growth land use projects in California than is currently possible. It will provide data needed to identify and implement multimodal mitigations for such projects, such as: appropriate amounts of parking, adequate transit service, and safe and attractive pedestrian and bicycle facilities - in addition to traditional roadway improvements. If successful, the results will be a significant contribution to the traffic engineering and planning fields.

**Who benefits?** Transportation and land use stakeholders, regional planning agencies, counties, cities, transit agencies, air quality districts, environmental groups, smart growth developers, consultants, elected officials, Caltrans’ Local Development-Intergovernmental Review program, and the traveling public.

**Who is implementing this project?** UC Davis’ Sustainable Transportation Center - Professors Susan Handy, Deb Niemeier, and Kevan Shafizadeh, with assistance from practitioners and graduate students.

**Cost/timeframe:** Total: \$485,000 (Caltrans Div. of Research & Innovation). Sept. 2009 – Dec. 2012.

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