

**DIVISION OF RESEARCH, INNOVATION & SYSTEM INFORMATION**  
**Research Initial Scope of Work**  
**SUBMITTAL FORM - FY 14/15**

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I. **Project Number:** P359

**Project Title:** Trip Generation Rates for Land-use Projects

II. **Task Number:** 2465

**Task Title:** Affordable Housing Trip Generation Strategies and Rates

III. **Background:**

Transportation engineers and planners use the Institute of Transportation Engineers' (ITE) trip-generation and parking rates as the basis for most transportation impact analyses (TIAs) of proposed land use development projects in the U.S. These TIAs identify traffic and parking impacts and related infrastructure mitigations, fees, and parking provision needs.

However, the ITE Handbook (2004) states that ITE's trip generation data is not accurate for land use projects located in places with public transit, transportation demand management (TDM) strategies, or for "affordable" (subsidized) housing. However, there is no data or method available in the U.S. to assess such projects. Site-specific TDM strategies, such as car-sharing or the provision of transit passes to residents can reduce automobile ownership and vehicle trip rates; however, there is currently no on-site traffic count data available documenting the effects of subsidization or the provision of site-specific TDMs at multi-family housing acceptable for use in traffic impact analyses.

IV. **Project Problem Statement:**

Since there is currently no on-site traffic count data available documenting the effects of subsidization or the provision of site-specific Transportation Demand Management (TDMs) at multi-family housing acceptable for use in traffic impact analyses, practitioners incorrectly estimate – and therefore potentially fail to adequately pursue – transportation, economic, social, and environmental benefits that can be gained by increasing the supply of affordable multifamily housing in urban areas or implementing effective demand management strategies at project sites.

Currently there is no accepted data, method or tool available for estimating trip generation rates (TGR) for proposed affordable housing (AH) land use projects. Modes of transportation (motorized or non motorized) used by people in affordable housing in urban areas may or may not influence traffic, depending on the household type. Transportation Impact Analysis (TIA) is used by Caltrans to determine the effects of proposed land use projects on the state highway system (SHS). TGR's would help measure the TIA of these affordable housing projects impacting the SHS.

**V. Objective:**

The goals of this Task are to develop and provide: 1) site-specific multimodal trip-generation and parking data for subsidized multifamily housing in urban locations; 2) similar data for site-specific TDM strategies provided at non-subsidized multifamily housing in urban locations; and 3) a methodology to estimate the transportation effects of these on localized multi-modal trip generation, parking demand, vehicles miles travelled (VMT), greenhouse gas emissions (GHG), and other emissions

The greatest benefit would be from low-income residents of housing near transit. Research benefits Caltrans mission to enhance California's economy and livability.

**VI. Task Description of Work:**

The Task will quantify the effects of these site-specific TDM strategies for residents of multifamily housing: free transit passes, free or reduced cost membership in car-share programs, access to shared vehicles, and "unbundled" parking (in which the cost of owning or renting a parking space is decoupled from housing costs).

**VII. Task Expected Deliverables:**

1. List and summarize available quantitative information regarding transportation effects of affordable (subsidized) multifamily housing and site-specific travel demand management strategies at non-subsidized multifamily housing in urban areas on vehicle and other types of trips. Identify gaps, strengths and weaknesses in available data and data-collection methods. Define affordable housing as it will relate to the trip generation rates.
2. Develop and describe procedures for collecting multimodal traffic count and related data at representative urban sites in California that are: 1) subsidized multifamily housing, and 2) non-subsidized multifamily housing with site-specific transportation demand measures. Data collection procedures must be acceptable to transportation professionals for use in transportation impact analyses. Provide draft to project Panel, and incorporate their comments and suggestions as appropriate.
3. Collect multimodal traffic count and related site data at 20 or more representative multifamily housing in urban locations that are either subsidized or have on-site TDM strategies; report results to project Panel for review and comment; incorporate changes as appropriate.
4. Develop a methodology derived from the site data collected in step #3 for estimating changes in vehicle and other types of trips for multifamily sites in urban areas that are: 1) subsidized housing, or 2) non-subsidized housing with selected transportation demand measures in place. This methodology should build on/add to the Method created in Task 1940 for smart growth land use projects multimodal trip generation estimates.
5. Conduct validation tests to determine how well the methodology developed in step 4 estimates trip generation and parking demand for appropriate sites. Calibrate the methodology as needed.

6. Develop a User Guide and documentation of the Method. Disseminate the methodology for use in preparing transportation impact analyses for proposed multifamily projects in urban areas, and to adjust local government development standards and requirements.
7. Prepare draft Final Report documenting entire effort; provide to project Panel for review and comment; incorporate their comments and suggestions as appropriate.

**VIII. Estimate of Duration: 3 years**

**IX. Related Research:**

Task 1940: Created an acceptable methodology to estimate trip-generation rates of vehicle, transit, and non-motorized trips associated with “smart-growth” land use projects proposed in California, such as those located in downtowns, other activity centers, and other higher-density mixed-use areas. Such data and method are needed for Transportation Impact Analyses (TIAs) of such projects, which local agencies and Caltrans typically require for significant proposed land use development projects. Task 1940 methodology and results were created and by U.C. Davis: <http://ultrans.its.ucdavis.edu/projects/smart-growth-trip-generation>

Task 2464: Will obtain multimodal “person trip” cordon counts and detailed site data for each land-use type and at least 30 additional Smart Growth development sites in California, utilizing the data collection method that UCD ITS developed and provided for Task 1940; use this data to further evaluate, calibrate, and validate the new trip-generation adjustment Method (which UCD ITS produced in Task 1940 “Trip-Generation Rates Method for Smart Growth (Context-Sensitive) Land Use Projects in California”).

**X. Deployment Potential:**

Cap and Trade funds have been identified to benefit disadvantaged communities. Preliminary findings of research based on analysis of the Caltrans California Household Travel Survey data indicates putting affordable homes near transit may help the State reduce its greenhouse gas emission reduction targets by reducing vehicle miles traveled.

An advisory committee of planners, practitioners and other stakeholders will be established to help guide the research and ensure that the results are deployed.

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**XII. Date:** June 12, 2014