DIVISION OF RESEARCH, INNOVATION & SYSTEM INFORMATION (DRISI)
Research Initial Scope of Work
SUBMITTAL FORM - FY 13/14

I. **Project Number:** P359
Project Title: Trip-Generation Rates for Transportation Impact Analyses of Smart Growth Land Use Projects

II. **Task Number:** 2464
Task Title: Collect additional data; recalibrate and validate new Smart Growth Trip Generation Adjustment Method; provide training and TA.

III. **Project Problem Statement:**
Task 1940 produced site-specific multimodal cordon count data for 30 smart growth land uses. Similar data is needed for at least 30 more sites in California to fully test, calibrate, validate, and deploy the new adjustment Method. Without this additional data, practitioners in California might not be able to use UCD's new Method to prepare TIAs of proposed smart growth land use projects due to a lack of clear evidence regarding its accuracy and robustness for a variety of locations and land uses. After the additional site data is collected and UCD's trip rates adjustment Method has been tested, recalibrated, and fully validated - then, it will be necessary to provide documentation, training, a final report, and technical assistance to practitioners (including Caltrans staff) on its use.

IV. **Objective:**
This Task 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"); produce a robust, acceptable, and accurate Method that practitioners can use to estimate multimodal trip-generation for traffic impact analyses/studies of proposed infill, mixed-use, and transit-oriented development ("smart growth") land use projects in California; provide documentation, a user guide, training and technical assistance regarding the appropriate use of the resulting final trip-generation adjustment Method to practitioners throughout California, and to Caltrans LD/IGR staff in headquarters and each of the twelve District offices.

V. **Task Description of Work:**
Estimating trip generation is the first step in conducting transportation impact analyses/studies (TIAs) typically required by local jurisdictions for environmental review and local development approval processes of proposed land use development projects. However, there is currently no acceptable method available in the U.S. for estimating trip-generation regarding proposed urban infill, mixed-use, transit-oriented development, or other "smart growth" land use projects. (Note: ITE trip generation rates are NOT appropriate for such land uses because they significantly over-estimate vehicle

trips and are not intended for such projects, per ITE's "Trip Generation Handbook" 2004).

This Task will provide acceptable cordon count and related data for at least 50 additional smart growth land uses in California using the data collection method that UCD ITS developed and used for Task 1940. This Task will then use the additional data to further evaluate, recalibrate, and finally validate a new ITE trip rates adjustment Method (building on the Method that UCD ITS produced via Task 1940.) It will provide documentation, a user guide, as well as training and technical assistance regarding the appropriate use of this new Method to practitioners throughout California.

Expected Deliverables:

1. Contractor: provides a list of 30 proposed representative smart growth sites in California for data collection to the Caltrans CM and project Panel; responds to questions and incorporates comments & suggestions; finalizes list; and obtains permission for on-site data collection from property owners/managers.
2. Contractor: Using the data collection procedures produced and used for Task 1940 (by UC Davis ITS), manually collect acceptable multimodal person trip cordon counts, at least 60 completed intercept surveys, and related site characteristics data for at least 30 representative "smart growth" land uses in various parts of California.
3. Deliver and present a draft summary report of the data collection results to the Caltrans PM and project Panel; respond to questions, comments and suggestions; incorporate changes as appropriate into final data summary report. Clean and compile the data; produce a report and database.
4. Use the new data collected to further calibrate and validate the multimodal Smart Growth Trip-Generation Method that UCD ITS developed for Task 1940. Describe the testing, calibration, and validation processes and results to the Caltrans PM and project Panel via a detailed written report; respond to questions, comments and suggestions; incorporate suggestions as appropriate into final calibration/validation report.
5. Revise the User's Guide for the Smart Growth Trip Generation Method produced via this Task. Prepare software documentation. Provide a draft final report summarizing the entire Task. Provide all to draft documents to the Caltrans PM and the project Panel; respond to their questions, comments and suggestions; incorporate changes as appropriate into final documents for distribution.
6. Distribute the revised Method, Users Manual, software documentation, and final Report via a public website without charge to users. Specify a tree of web pages ready for hosting. Develop and provide education/training. Specify the number, length, and location of training sessions. Develop and provide technical assistance to Caltrans staff in headquarters and all 12 districts, as well as to staff of public agencies, practitioners, and others on appropriate use of the new Method for a specified length of time.

VI. **Background:**
Estimating trip generation is the first step in conducting traffic impact analyses/studies required by local jurisdictions and Caltrans for environmental review and local development approval processes for proposed land use development projects. In research Task 1940, UC Davis (Susan Handy, et.al.) developed a new method for adjusting ITE trip-generation rates regarding proposed urban infill, mixed-use, transit-oriented development, and other "smart growth" projects in California. This is needed because ITE trip generation rates are not accurate or appropriate for such land uses.

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

VIII. **Related Research:**
Task Number: 1940
Task Title: Trip-Generation Rates Methodology for Smart-Growth Land-Use Projects

IX. **Deployment Potential:**
High, a trip-generation estimation method (set of equations and possibly spreadsheet tool) for use in preparing Transportation Impact Analyses (TIAs) and Studies (TIS) of proposed urban infill, mixed-use, and transit-oriented development ("smart growth") land use projects in urban and urbanizing areas of California. The product will be freely available to function as a standard or practice.

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