Detailed Work Plan – Pilot Area 1

Pilot Area 1 (PA1): ***Integrating SMF principles and performance measures into existing Caltrans processes***

A second generation Corridor System Management Plan (CSMP) will be developed and shaped using the SMF principles, using the I-680 corridor within Contra Costa County in Caltrans District 4 as a pilot test area (PA1). This pilot study will be a supplementary and complementary effort to the ongoing CSMP processes, focused on the application, refinement, and testing of the principles, planning concepts, and performance measures contained in the SMF for both the corridor plan.

A high priority for the study timeline is to coordinate with the I-680 CSMP schedule since we, as the SMF consultant, will play an important advisory role on the CSMP team. With the delayed start of the SMF contract, the schedule becomes even more critical as we come into the process about 3 months into the CSMP schedule. At the start of this contract, the Staff Working Group (SWG) and the TAC members had already been identified and a schedule for SWG meetings was established. Planning for the first TAC meeting was being discussed.

Task 1: Project Initiation and Scoping

Objective: The purpose of this task is to develop a refined scope for achieving the project objectives based on input received from Caltrans, the Pilot Area Sponsor (District 4), and the CSMP consultant.

Approach: Dowling Associates will work with the CSMP team to confirm the refined work plan, schedule, and list of expected SMF deliverables for the I-680 CSMP project. Dowling will advise the CSMP consultant on forming the Performance Measure and Transit/Bicycle/Pedestrian sub-groups.

Two days before each kick-off meeting the Dowling Team will distribute a memo with the meeting agenda, a draft work plan, schedule, budget and scope. Dowling will present draft detailed work plan, schedule, and budget for review and approval by the Caltrans project manager and other involved agencies.

Deliverables:

- Deliverable 1.1 – Kickoff meeting for PA 1, meeting materials and notes
- Deliverable 1.3 – Pilot Area 1, refined overall SMF study schedule, work plan, and list of deliverables

Task 2: Project Management and Coordination

Objective: The purpose of this task is to maintain good communications between the Dowling Team, the Caltrans Contract Manager, the advisers, stakeholders, and participants in the implementation project and pilot tests.

Approach: Dowling Associates will prepare monthly written progress reports for the Caltrans Contract Manager, and in addition participate in a conference call with the

Caltrans Contract Manager at least once a month or more if needed. As part of project management duties, Dowling will participate in quarterly meetings with the SMF study Steering Committee, which the Contract Manager will organize. Dowling will also maintain ongoing communication and coordination with both Pilot Area Sponsors, including at a minimum, monthly phone calls.

As this study requires intensive coordination and teamwork, the consultant will participate in and provide briefings as needed for the following meetings:

- Pilot Area 1 will include up to 15 team meetings as needed, including any final briefings. An estimated schedule based on past CSMP efforts could be as follows:
    - SWG – monthly meetings over life of project. Initial and final meeting will be face-to-face, meetings after will be conference calls
    - TAC's – estimate about 5 meetings with CSMP TAC over project cycle. Meetings will be as needed based on project progress and will be face-to-face meetings, about one each quarter

Deliverables:

- Deliverables 2.3a-o – Meeting materials and notes for monthly calls or meetings and additional communication as needed with Pilot Area 1 Sponsor and CSMP core team (up to 15 meets/calls)

Task 3: Literature and "Practice in Progress" Review

Objective: In order to identify the leading edge of sustainable and multi-modal transportation practice and how it may be applied in California, the consultant will identify subject matter experts and literature review sources, to be confirmed by Caltrans Contract Manager. These should be focused on developments in research, guidance, performance measures and tools released or under development since the release of the Smart Mobility Framework in 2010.

Approach: This task will build off the recently available survey of current practice and related research on Smart Mobility that was conducted for Caltrans as a Preliminary Investigation (dated April 25, 2012). Dowling will prepare draft lists of sources and people to be interviewed for review by the Caltrans project manager. We will include a draft list of interview questions/topics for the experts. Based on the approved source and expert lists, the consultant will interview experts, review identified literature, and summarize and assess current research and practices findings and their potential application to the pilot areas. Prepare the draft report with findings and best practice examples, to be included in the final report. Research will include but not be limited to corridor management, measurement, and long range planning, and regional and subregional long range transportation planning, project development, and project analysis, and should capture the leading edge of practice and research. As this task relates to PA1, the focus will be on Smart Mobility applications and tools related to corridor-level studies to inform on approaches to incorporating SMF into this second generation CSMP.

Deliverables:

- Deliverable 3.1 – Draft lists of sources to be reviewed and expert people to be interviewed. Draft list of questions/interview topics for expert interviews.
- Deliverable 3.2 – Report summarizing research, interviews, and findings for inclusion as a chapter or appendix in final report

Task 4: Identify Approaches, Data Needs, and Sources

The purpose of this task is to identify the recommended approaches for incorporating Smart Mobility concepts for each Pilot Area 1 based on the best practices documented in Task 3 and the content and direction of the Smart Mobility 2010 Call to Action document.

Subtask 4.2: Identify Performance Measures and Data Needs For PA1

Objective: The purpose of this subtask is to identify the appropriate performance measures, data needs, and recommended SMF analysis approach for each pilot area.

Background:

The SMF identifies 17 performance measures related to the SMF principles for evaluating the level of success at achieving the objectives of the SMF process. These measures are comprehensive and cover all the SMF dimensions.

The tools and data required to evaluate all 17 performance measures for each contemplated transportation improvement (or bundle of improvements) are not trivial. This one point is probably the single greatest obstacle to the implementation of SMF in regular Caltrans and local planning practices, particularly when many alternatives are being considered. SMF would require a significant planning analysis infrastructure (e.g. regional travel demand models) be already in place (and accessible to the planner considering project alternatives) to support the computation of all 17 performance measures, and SMF requires significant investment of professional effort to perform the computations for a variety of possible transportation improvement projects.

However, it should be recognized that the SMF is intended as broad framework and that this effort to integrate SMF as part of specific planning practices is aimed at translating these broad principles and identifying which of the 17 SMF performance measures are most appropriate for this application.

Approach:

The Dowling Team will identify potential SMF performance measures, possible metrics, and the data they require. We will assess the quality and availability of data for each performance measure. We will identify any analysis or modeling tools or alternative methodologies required to produce each performance measure, and assess their quality, availability, and utility, and any shortcomings. As described under Task 2, we will present the data and analysis assessment and options to the SWG for direction on moving forward and selection of SMF performance measures (SMPM).

Dowling will review the 17 performance measures and identification of possible metrics. This task would include distinguishing between measures used for monitoring purposes (i.e., describing the current conditions) and measures used for forecasting (i.e., conducting

the analysis with the current tool set). Those SMPM that will be used for the analysis will be highlighted.

Focusing this subset of the SMPM that will be applied for the CSMP, specific metrics will be identified that use available data and tools for calculation. The intent is to rely as much as possible on data already being collected, analysis already performed, and tools already developed for the CSMP. Our budget assumes no new data collection.

The first step is to identify one key, comprehensive performance measure for each of the 6 SMF principles. For example, under Location Efficiency three performance measures are proposed in the SMF framework: 1. Support for Sustainable Growth, 2. Transit Mode Share, 3. Accessibility and Connectivity. These three measures are all highly correlated (connectivity will result in improved transit share, etc.) and are really a means of achieving the SMF goal, reduced carbon emissions per capita, rather than the goal itself. A good proxy for these three performance measures would be the non-auto mode split (measuring the benefits of improved walkability as well as improved transit access).

The next step will be to evaluate the extent to which the selected performance measures overlap or are highly correlated. Performance measures that trend in the same direction can be replaced with one or the other.

Deliverables:

- Deliverable 4.2a – Memo on Approach, Data Needs, Sources for Pilot Area 1
    - List of performance measures, data needs, sources
    - Assessment of data quality and availability
    - Assessment of available and alternative methodologies for analysis
    - Recommended analysis and data collection approach

(Meeting notes/feedback from pilot area advisory committees and/or project teams are already described under Task 2)

Task 5: Data Collection, Analysis, and Performance Testing

Building on the work in Task 4 to identify the appropriate SMF performance measures and the data required, the Dowling team will identify the SMF place type appropriate for the study corridor and evaluate based on the SMF performance metrics identified above. Our work under this task will build as much as possible on data collected and evaluated by others and using tools already developed by others for the CSMP (PA1) to avoid "re-inventing the wheel" thus reducing redundant and unnecessary analysis.

Subtask 5.1 Develop Data Collection Plans

For PA 1, Dowling will work with the CSMP team through the SWG and advise the Caltrans CSMP Project Manager in the development of the Data Collection Plan.

Subtask 5.2a – Evaluate Complete Streets Assessments (PA 1)

For PA 1, the Dowling Team will review and evaluate the CSMP team's multi-dimensional Complete Streets Assessment, from the micro, meso and macro scales along and around the corridor. One such tool that would be considered during our review and evaluation is the CompleteStreetsLOS™ software.

Background

Dowling Associates led the development of the multimodal level of service framework for urban streets which was adopted for the 2010 Highway Capacity Manual. Dowling developed a tool, CompleteStreetsLOS™, to facilitate the evaluation of bicycle, pedestrian, and transit level of service on city streets from the perspective of each of these modes. The latest versions of the McTrans software, Highway Capacity software (HCS), and Trafficware's Synchro (not available when the Caltrans SMF framework was published) are now available to analysts wishing to incorporate smart mobility performance measures in their project and plan analyses.

D4 Office of System Planning has drafted "Preliminary Guidance on Incorporation of Complete Streets Issues in Caltrans System Planning Documents," and is seeking professional advice on utilizing this guidance in a freeway-based, congested urban corridor, such as I-680. The preliminary guidance currently covers the inventory of the infrastructure, then operational analysis first to identify deficiencies and then to develop recommendations.

One critical component of Complete Streets that appears to be lacking in the preliminary guidance is the interaction among the modes. This interaction among the modes is particularly important on the conventional highways, where all modes are sharing the public right-of-way. From our work on developing the multimodal level of service (MMLOS) methodology in the Highway Capacity Manual 2010, Dowling has addressed the interaction as part of the operations analysis. While that level of detailed analysis may be beyond the Complete Street Assessment, the MMLOS provides a useful tool to evaluate the interactions among modes and understand the trade-offs among modes. Specifically, recommendations to improve the traffic flow and reduce delays along a congested, urban freeway corridor, such as I-680, could affect the operations for other modes that share the parallel arterials and interface with the freeway traffic at the interchanges.

Approach

Dowling would provide input and support to the CSMP Project Manager during review of the preliminary guidance in coordination with Caltrans, the SWG, and the TAC. Dowling would work with the CSMP Project Manager to provide support on the Complete Streets Assessment to augment their efforts without duplication of effort.

Once the "Preliminary Guidance for Incorporating Complete Streets Issues into Caltrans System Planning Documents" is updated by the CSMP Project Manager, Dowling would review the updated guidance as well as the I-680 Complete Streets Assessment for lessons learned in the context of the broader implementation of SMF. The review would start with a higher level discussion of the intent and purpose of the Complete Street guidance, then

proceed to focus on the content and outline for the document. Some issues we think need to be addressed include:

- Assembling and reviewing policy and planning documents, such as the local General Plan Circulation Elements, Short Range Transit Plans, Bicycle Master Plans, Pedestrian Master Plans, and ADA Transition Plans for Public Rights-of Way, to supplement the inventories as well as identify future bicycle, pedestrian, and transit improvements that are already planned to meet deficiencies or to complete the network or system.
- Providing a tiered approach to the inventory and analysis that starts with base level of inventory and analysis that can be augmented with additional inventory and analysis should the resources be available. For example, for the pedestrian infrastructure, the base level inventory is simply to identify the presence or lack of sidewalk or shoulder, then add sidewalk or shoulder width, obstructions, curb ramps, and truncated domes.

Subtask 5.3 (a): Strategies and Solutions

For PA 1, Dowling will provide input on strategies and solutions to improve corridor performance from a Smart Mobility perspective. These strategies would be based on the place types and performance measures incorporating non-auto focused strategies primarily for the parallel arterials and at the interface between the freeway and local streets.

Subtask 5.4 (a): Performance Measures and Results

Dowling will provide a draft report on data collection and analysis methodologies, outputs, and performance results for the Smart Mobility performance measures. This effort would be coordinated with the CSMP team such that the integration of SMF would be part of the second generation CSMP rather than a separate parallel effort.

Deliverables:

- Deliverable 5.1a – Memo summarizing comments on PA 1 (CSMP's) Data Collection Plan
- Deliverable 5.2a – Memo reviewing PA 1 CSMP Complete Streets Assessment
- Deliverable 5.3a – Memo listing performance solutions and strategies employed in PA 1.
- Deliverable 5.4a –Draft report of PA 1 data collection and analyses methodologies and SMF performance results.
- Deliverable 5.5a – Presentations/materials with draft data and assessment for PA 1.

(Meeting notes/feedback from pilot area advisory committees and/or project teams are already described under Task 2)

Task 6: Recommendations and Evaluation

The overarching goal of this task will be to consolidate the lessons learned from the development, testing and evaluation of the processes, methodologies, and results of applying the Smart Mobility Framework in the two planning efforts. Final products will present best practices, performance measures, and a replicable process for incorporating Smart Mobility into comparable efforts throughout the Department and partner agencies' work.

Subtask 6.1 Provide Material for PA1 I-680 CSMP

The purpose of this task is to compile the findings of this SMF/CSMP testing and evaluation and present it in a fashion that can be uses to guide future facility development. The management plan developed from this CSMP is only valuable if it is used by decision makers. Specifically, the Dowling Team will provide SMF advice, language, and content as needed for inclusion in CSMP.

Subtask 6.2 Briefing Paper

The Dowling Team will develop draft briefing paper with results and recommendations for SMF application in Pilot Area 1.

Deliverables:

- Deliverable6.1 – Memo documenting language/content provided to CSMP PA1.
- Deliverable 6.2 – Draft briefing paper with results and recommendations for Pilot Area 1.

Task 7: Share Results, Recommendations and "How to" Implement SMF

Subtask 7.1: Final Report

The final outcome of this task will be written products that present best practices, performance measures, and a replicable process for incorporating Smart Mobility into comparable efforts throughout the Department and partner agencies' work.

The Dowling Team will prepare a draft complete final report on Smart Mobility Framework Pilot Area 1 and 2 applications and recommendations for implementation. Specifically, the results of Pilot Area 1 study will be included in the final report. This report will evaluate the process and outcomes of the Smart Mobility Framework Pilot Implementation, including "How to" piece detailing process, methodologies outcomes, and recommendations. This report will be designed to provide useful steps toward implementation of the *Smart Mobility Call to Action* statewide.

The draft report will be revised based upon a single set of consistent comments provided by the Caltrans SMF contract manager.

Subtask 7.2 : Briefings

The Dowling Team will conduct up to 6 final briefings or presentations to groups identified for final briefings in Task 2. These briefings/presentations fall within the total numbers of meetings described under Task 2. Develop and provide study information and outreach materials for dissemination.

Deliverable:

- Deliverable 7.1a – Draft Final Report that includes process, methodologies, results, recommendations, evaluation, and literature review.
- Deliverable 7.1b – Final study report evaluating the process and outcomes of the Smart Mobility Framework Pilot Implementation, including "How to" piece detailing process, methodologies outcomes, and recommendations. This report will be designed to provide useful steps toward implementation of the *Smart Mobility Call to Action* statewide.
- Deliverable 7.2 – Presentation and outreach materials for briefings.
    - For PA1, we will contribute its findings on best practices/recommendations for applying SMF tools in the 680 CSMP to its overall evaluation report.

Meeting notes deliverables for each briefing/call/meeting are described under Task 2.