ADVANCING TSMO IN CALIFORNIA – IMPROVING CALTRANS’ TSMO CAPABILITIES

By: California Department of Transportation

IN THIS CASE STUDY YOU WILL LEARN:
1. Caltrans has been using SHRP2 products to advance their TSMO program.
2. Initial capability maturity model (CMM) workshops determined that given California’s size, a concentrated or tailored TSMO approach would be needed for regional implementation.
3. The identification of strategic corridors helped advance TSMO strategies in the state.

BACKGROUND
The California Department of Transportation (Caltrans) directly manages more than 50,000 lane miles of state and federal highways that require a heavy emphasis on daily operational needs. California is working to adapt to technology as it advances, however, that comes with a set of opportunities and challenges as technology is changing and improving rapidly in both rural and urban areas of the state.

Transportation Systems Management and Operations (TSMO) is the essential response in an era when “you can’t build your way out of congestion.” Instead, fix-it-first and non-roadway expansion strategies are deployed due to the high cost of adding capacity and a desire for less auto-centric travel, especially in California’s high-density urban corridors including Los Angeles, San Francisco, San Diego, and Sacramento.

TSMO PLANNING, STRATEGIES AND DEPLOYMENT
Caltrans is using the Strategic Highway Research Program (SHRP2) products: Regional Operations Forums (ROFs) for Advancing Systems, Operations, Management, and Reliability; Institutional Architectures to Advance Operational Strategies/ Capability Maturity Model (CMM) Assessment to advance TSMO; and Integrated Corridor Management (ICM) in California.

The California Connected Corridors Program is a statewide program involving the most highly congested, unreliable corridors in California. A main goal is to lead ICM in partnership and collaboration with others, and make it easily replicable across California and elsewhere.

We started with a desire to manage the considerable existing transportation infrastructure in California to improve efficiency of the state’s transportation system, improve the effectiveness of our decisions, and ensure a multi-modal, multi-jurisdictional approach to TSMO.

In addition, a statewide ROF and CMM Assessment lead by the Federal Highway Administration (FHWA) in 2013 that highlighted statewide organizational gaps and the size and diversity of California, required a more concentrated/tailored approach for statewide implementation.

We also had assistance from FHWA to modify and refine existing SHRP2 L36 and L06 products as we piloted them in California which were the following: Caltrans D12 Orange County, Caltrans D4 Oakland, and Caltrans D8 San Bernardino. The ROFs provide a platform to discuss the challenges of today while looking toward the future of transportation operations to strategize, implement, and evaluate the integration of TSMO into the agency.
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COMMUNICATIONS PLANNING AND EXECUTION

Caltrans Draft Director’s Policy DP-08 states in part that “Caltrans manages the freeway system to maximize the public’s return on investment in California's transportation infrastructure...The freeway system is a major element of a total transportation system, and represents a considerable investment of public resources. It is essential that the freeway system, both urban and rural, be managed to realize its full potential. Caltrans, with its partners, employs management strategies that maximize the capacity to move people, goods and information through the freeway system by the safest and efficient methods.”

In addition, the 2015/2020 Caltrans Strategic Management Plan includes TSMO as a key part of the strategic direction and implementation of the plan, tied to tangible goals and outcomes for performance to assess the success of policies.

Key elements to advance TSMO and ICM were the following: The creation of a list of the Top 25 strategic corridors across California; conducting a Connected Corridors Pilot – an ICM Pilot on the I-210 Corridor near Pasadena in Los Angeles; the creation of a statewide Connected Corridors Program and the creation of a 3-day corridor-level ROF/CMMs that focuses on corridors, includes all involved local partner agencies, and result in corridor-level implementation plans that lead to improved coordination, cooperation, and more efficient and effective TSMO in those corridors. Recently, Caltrans headquarters and district staff worked closely with FHWA, local and regional agencies, California Highway Patrol, fire agencies, coroners, stakeholders, and consultants to plan for and conduct the 3-day ROFs and CMM Self-Assessments throughout the state of California to work through barriers for successful integration of TSMO.

OUTCOME, BENEFIT AND LEARNINGS

- Conducted corridor-level ROF/CMMs in each of Caltrans’ 12 districts across California
- Over 150 trained in California
- 12 corridor-level implementation plans
- Plans for continued training in more corridors

The outcomes exceeded expectations by bringing stakeholders together in one setting to have an open-dialogue to communicate what is working and where improvements can be made.

To support ongoing TSMO implementation Caltrans has a dedicated “TSMO Regional Operations Forums” webpage with information from each of the ROFs including presentations with session information for: Traffic Incident Management, Safety, Work Zones, Corridor Issues and Challenges, Planning and Programming for Operations, Freight and Connected Vehicles, and CMM Self Evaluation. The webpage is continuously updated as new materials are identified.

CMM DIMENSIONS

Each of the following CMM Dimensions were improved through the strategies mentioned above and in coordination with other efforts:

- Business Processes
- Systems and Technology
- Performance Measurement
- Staffing and Workforce
- Culture
- Collaboration

Development of the TSMO Program Plan is currently underway by Caltrans with a team represented by the Division of Transportation Planning and Traffic Operations to improve Caltrans processes and accept more operations projects throughout the state of California. This plan is scheduled for completion in mid-2019.