California Transportation System Management and Operations (TSM&O)

Maturing Transportation System Management and Operations for an efficient Transportation System

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Division of Traffic Operations
Office of Strategic Development
TSM&O Kick Off Meeting Sacramento

March 28, 2014
Overview

• What are TSM&O and CMM
• Vision for TSM&O in California
• TSM&O Implementation Plan
• Progress to Date
• Next Steps
• Strategies – Now and Future
Transportation System Management and Operations (TSM&O)

What is TSM&O?

- **Integrated strategies** to optimize performance
  - Multimodal / Intermodal
  - Cross-Jurisdictional systems
- Uses Systems, Services and Projects
  - Preserve Capacity
  - Improve Security, Safety and reliability
What is the Capability Maturity Model

- Capability Maturity Model (CMM)
  - Evaluates key business processes
  - Business processes
  - Systems and technology
  - Performance management
  - Culture
  - Organization and workforce
  - Collaboration
- End goal is full maturity in all activities
Vision for TSM&O in California

- **System Management**
  - Current State: Separated
  - Future State: Integrated

- **Systems Tools and Functions**
  - Current State: Historical
  - Future State: Real-Time

- **Data & Information**
  - Current State: Reactive
  - Future State: Proactive/Predictive

- **Decision & Business Process**
  - Current State: Static Assignment
  - Future State: Dynamic Assignment

- **Resources**
  - Current State: Planning → Design → Operations
  - Future State: Planning & Design with Ops & Maintenance

- **Capital Process**
<table>
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<tr>
<th>TSM&amp;O Vision for California</th>
<th>Current CMM Level</th>
<th>Next CMM Level</th>
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</thead>
<tbody>
<tr>
<td>Business Processes</td>
<td>(1) Performed- Silo approach</td>
<td>(2) Managed Consensus statewide approach</td>
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<tr>
<td>Systems and Technology</td>
<td>(1) Performed/ Ad Hoc approaches to implementation</td>
<td>(2) Managed- ITS Architecture Updated</td>
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<tr>
<td>Performance Measurement</td>
<td>(2) Managed- Real time data still being developed</td>
<td>(3)- Integrated real time data; B/C Analysis ; Outcome Driven</td>
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<tr>
<td>Culture</td>
<td>(2) Managed – Senior Mgmt supports TSM&amp;O</td>
<td>(3) Integrated – Policy/Program; wide public visibility</td>
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<td>Organization/Staffing</td>
<td>(2) Managed- TSM&amp;O clarified within HQ</td>
<td>(3) Integrated- TSM&amp;O core positions identified in Districts</td>
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<td>Collaboration</td>
<td>(2) Managed- Objectives aligned with key entities</td>
<td>(3) Integrated- Clear Partnership/ Sharing of Responsibilities</td>
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Business Processes Implementation Actions

CCM Workshop Suggested Actions

• Reconcile/coordinate guideline and planning documents
• Work with MPOs to introduce TSM in regional planning
• Introduce performance/accountability for discussion with Executive Board.
• Develop consistent TSM assessment methodologies
• Develop a uniform understanding of the payoff of TSM statewide
• Ensure inclusion for TSM options at all stages of project development
<table>
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<tr>
<th>Action</th>
<th>Suggested Steps to Implement Actions</th>
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<tbody>
<tr>
<td>Establish Caltrans role with Connected Corridors partners</td>
<td>- Define and develop consensus on roles of key players in corridor planning</td>
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<tr>
<td>Desired Outcomes</td>
<td>- Clarify Caltrans’ specific role in both planning and programming</td>
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<tr>
<td>Clear concept of Caltrans’ role in collaborative Connected Corridors planning context</td>
<td>- Identify and reconcile priorities and develop cooperative agreement concept for: planning; programming; operations; and management.</td>
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Action
Develop Standardized Connected Corridors planning and Programming process

Desired Outcomes
Guidance for Caltrans in Connected Corridors Program planning

Suggested Steps to Implement Actions
- Review existing guidelines and planning documents related to planning, prioritization, and project selection
- Identify implications of planning, programming, and procedures in a Connected Corridors context
- Consider implications of including strategic alternatives as well as capital, operating and maintenance costs.
- Develop simulation and evaluation tools and processes
- Develop guidelines for future Connected Corridors planning related to Caltrans’ role
- Develop approach to continuing cooperative programming
## Consultant Implementation Plan with Connected Corridors / ICM Focus

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<th>Action</th>
<th>Desired Outcomes</th>
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<td>Develop TSM&amp;O Business case for senior executives</td>
<td>Business Case and marketing materials focused on Connected Corridors</td>
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- Introduce performance and accountability as an item for discussion and consideration for the Steering Committee and Executive Board
- Establish cross-disciplinary working group to develop TSM&O specific business case
- Review peer experience with TSM&O business case development
- Identify promising formats and communication strategies for business case
- Develop communication materials based on the TSM&O and Connected Corridor Business Cases
Systems and Technology

Workshop Actions to Advance to the Next Level

• Conduct review of regional and HQ architectures
• Capitalize on related review at FHWA Division Office (attempting to overcome consultant architecture updates that are not integrated)
• Engage and build relationships with IT personnel on purpose and benefit of projects;
• Create a “two-way communication document” to market/explain goals of operations/ITS
• Develop decision support system for asset management, including partners
Consultant Implementation Plan with Connected Corridors / ICM Focus

**Action**
Review and update systems engineering state of practice in Caltrans for Connected Corridors

**Desired Outcomes**
Program of priority improvements in ConOps, architecture and standards focused on Connected Corridors development

- Review current state of the practice regarding systems engineering at each stage in the project development process
  - Identify critical issues impacting efficiency of process and effectiveness of outcomes.
- Evaluate current ITS architecture related to Connected Corridors
- Incorporate FHWA Division Office review and peer state experience.
- Identify critical hardware, communication, and software standards for consistency
- Develop program and timeline for updates of standards, architecture, and migration plans appropriate for Connected Corridors
Consultant Implementation Plan with Connected Corridors / ICM Focus

**Action**
Develop cooperatively streamlined approval process for Connected Corridors IT working with State Technology Agency (IT)

**Desired Outcomes**
Streamlined process for IT approvals and joint MOU

- Develop joint working group with CA IT Agency and Caltrans to review key IT issues impacting Caltrans procurement and projects.
- Define terms to clarify all parties’ key concerns by type of project.
- Prepare document and conduct dialogue to clarify Caltrans perspective regarding challenges in upgrading technology and achieving consistency.
- Identify interagency strategies for better communication streamline project approval with the IT group.
- Develop and establish specific approval process for implementation at staff level
- Secure top management buy-in.
- Develop MOU with CA IT regarding streamlined approval process for Connected Corridors.
Progress to Date

- Provide an update and overview of current Caltrans efforts to Plan for Operations –
  - 2013 Transportation Management System Business Plan Goals
  - MAP-21 Performance Based Management
  - Caltrans 2013 Strategic Plan Update – New Goal!
  - Director’s Policies/Deputy Directives Updates
  - Connected Corridors Program – Integrated Corridor Management
  - Organizing for Corridor/System Management
  - Tools and Funding
    - System Management Maturity Capability Model
    - 2014 SHOPP Changes
    - California Transportation Infrastructure Priorities (CTIP)
Caltrans Director’s Policies and Deputy Directives related to System Management

➢ To be Revised in Fall 2013 – coordinated with DOTP and DRISI
  • Policy/Deputy Directive
  • DP-08 Freeway System Management
  • DP-26 Intelligent Transportation Systems
  • DD-43 HOV (now Managed Lanes Systems)
  • DD-57 Route Information for Oversize/Overweight Vehicles
  • DD-70 Transportation Management Systems
  • DD-78 Traveler Information
Next Steps

- Finalize Draft Implementation Plan (IP) with Local Core Technical Assistance Team
- Review IP with TSM&O Consultant
- Present IP to Caltrans TSM&O Steering Committee and Caltrans TSM&O Sponsor Committee for Approval and Support
- Present Plan to FHWA to Receive Implementation Assistance Grant
- Begin Implementation Strategies
TSM&O Strategies – Now and Future

- Focus on actions items in TSM&O IP
- Utilize FHWA and AASHTO Products and Support
  - Training
  - Workshops and working meetings
  - Peer Exchanges
  - Technical Assistance
  - Collaboration
  - Tactical Assessments
- Follow up briefings for senior agency leaders to help sustain momentum
- Bring TSM&O and CMM To Districts and Local Partners
- Reassess California TSM&O after two year IP period
Thank You!

Joan Sollenberger, Chief
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Caltrans Division of Traffic Operations