

# INTRODUCTION WEBINAR TO DISTRICT 11 REGIONAL OPERATIONS FORUM

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April 5, 2016

# Objectives

- Discuss what to expect during the Regional Operations Forum (ROF) and how it is critical to the missions of the various agencies involved
- Provide an Overview of Transportation Systems Management and Operations (TSMO)
- Provide an Overview of the TSMO Capability Maturity Model (CMM)
- Explain how to conduct the TSMO CMM Self-Assessment

# Purpose of ROF/CMM

- Provide the audience with information and tools for the advancing Transportation Systems Management and Operations (TSMO) for the future
- Identify and Leverage each agencies' perspectives on the capabilities and partnership for the I-805 Corridor and the San Diego Region
- Explore ways to get the most out of the resources (staff, funding, transportation facilities)

# Regional Operations Forum

- **April 12**

- National and Statewide Perspective on TSMO and CMM
- I-15 and I-805 Corridors
- Results of CMM homework
- Communicating the Value of TSMO
- Systems Engineering

- **April 13**

- Performance Measurement
- Planning for TSMO
- Organizing for Operations
- Traveler Information
- Corridor Management
- Traffic Incidents and Emergency Management

# CMM Self - Assessment Workshop

- **April 14**

- Facilitated Discussion
- Regional Perspective
- Strengths and Weaknesses in CMM Dimensions
- Rating on Consensus
- Next steps to advance in CMM Dimensions

# ROF Presentations

- <http://www.dot.ca.gov/hq/traffops/rof.htm>

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When We Talk About TSMO....

# What is TSMO?

## Transportation Systems Management and Operations

- “Integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects” (MAP 21)
- Regional integration an important consideration
  - Many strategies are multi-modal
  - All require inter-agency collaboration, including coordinating with enforcement and first responders

# The Transportation Environment is Changing

- Increased reliance on information and technology
- Technology also offers opportunities – enhanced operations and regional multi-modal integration
- Increasing customer needs and expectations
- Growing emphasis on outcomes and performance measurement
- MAP 21 requirements
- Reduced financial resources



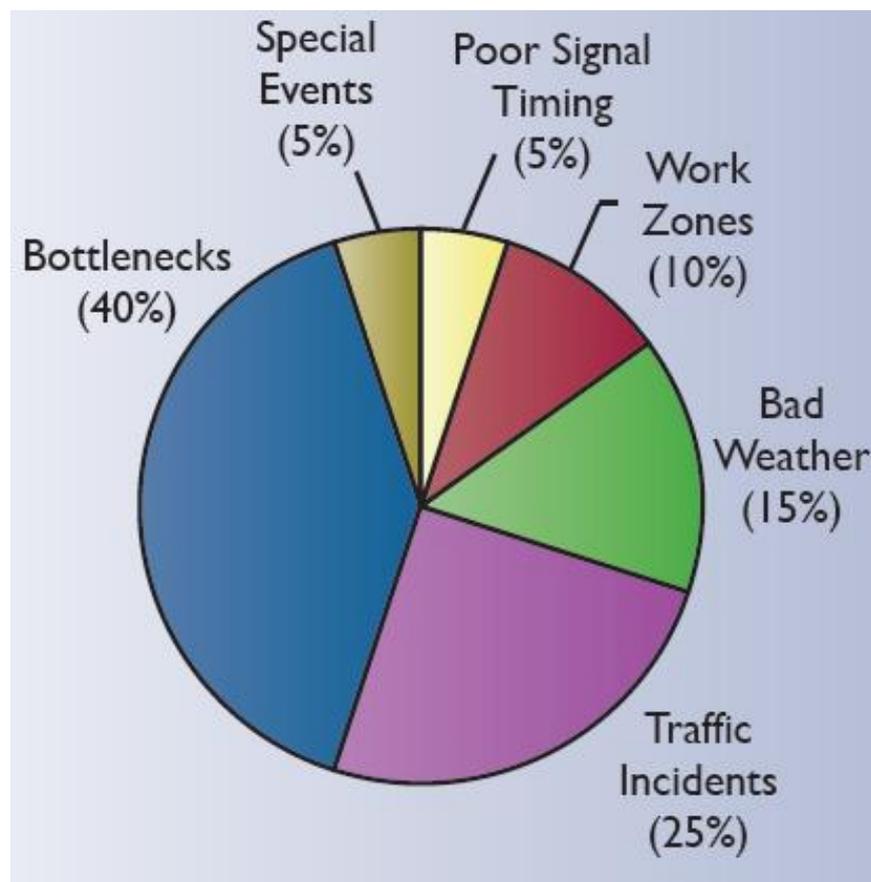
# Traditional Approach to Managing Transportation

- Predict future (long range) traffic volumes
- Fund major capital projects to provide additional capacity

**This only addresses 40% of the congestion problem**

- Also becoming more and more difficult to provide new capacity

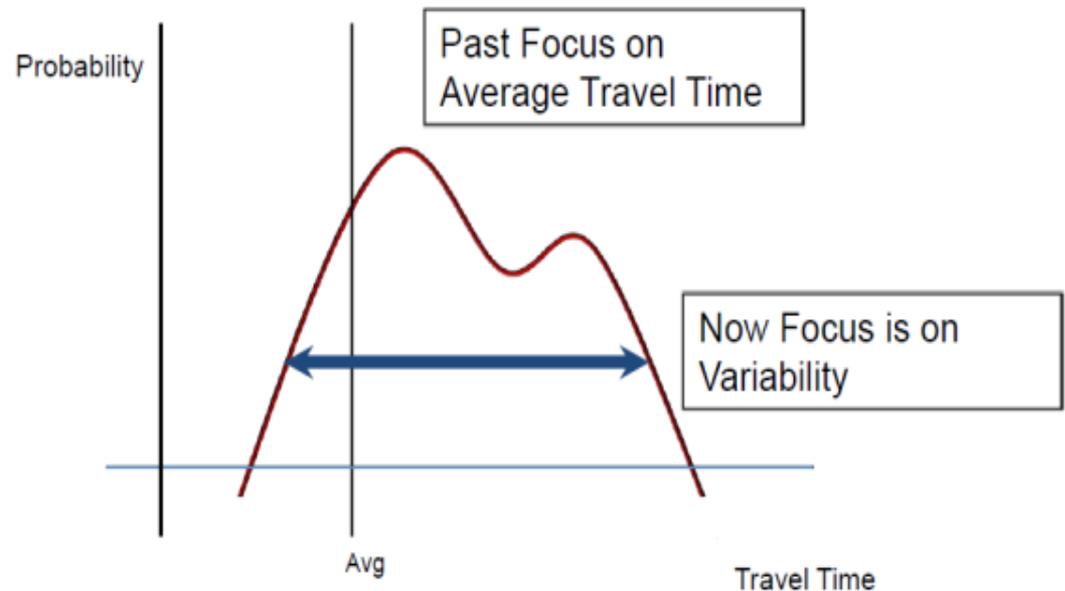
Causes of Congestion  
(Source: FHWA)



# What is “Reliability”?

- Consistency or dependability in travel times
  - As measured from day to day, or across different times of day
- Less tolerance for unexpected delays

- Planning for travel variability has costs for users, including individuals, transit operators, freight and their end users



# Transportation System Management & Operations



# Transportation System Management & Operations



# Example TSMO Strategies and Solutions

- Work Zone Management
- Traffic Incident Management
- Special Event Management
- Road Weather Management
- Transit Management
- Freight Management
- Traffic Signal Coordination
- Traveler Information
- Ramp Management
- Managed Lanes
- Active Traffic Management
- Integrated Corridor Management

Implemented and operated by transportation agencies (State DOT, transit agency, local DOT) on a day-to-day basis.

# Supporting Better TSMO

- System Operations
- System Maintenance
- Partnerships
- Training and Capacity Building
- Project Planning
- Internal/External Coordination



# The “Dimensions” of Capability

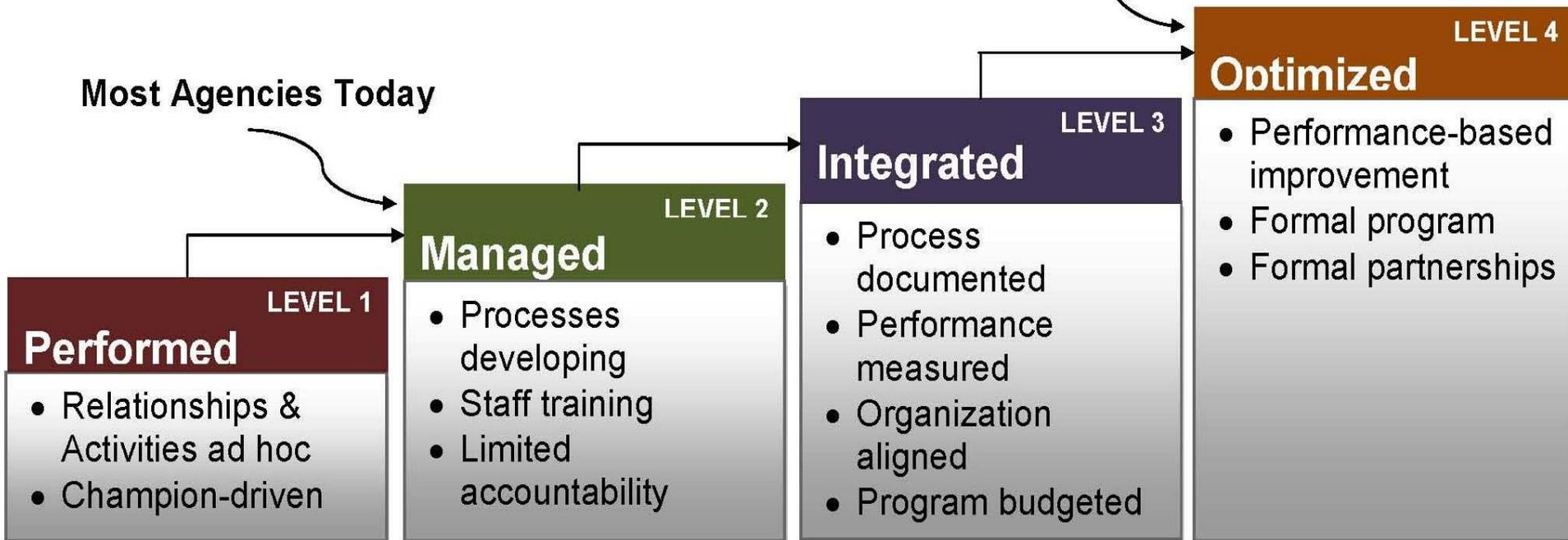


- All (6) dimensions are:
  - Essential
  - Interrelated
- Requires executive support and leadership
- Objective is continuous improvement of operations and reliability

# Levels of Capability Maturity

Ultimate Goal for the Future

Most Agencies Today



# The Capability Maturity Model

Capability Level Self Evaluation Structure				
DIMENSIONS	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZING
Business Processes		X		
Systems & Technology			X	
Performance Measurement	X			
Culture			X	
Organization/ staffing		X		
Collaboration			X	

Lowest level is constraint

# Active Transportation and Demand Management (ATDM)

Broad operational philosophy – an integrated approach for dynamically and pro-actively managing and influencing travel demand and traffic flow

Uses a combination of the real-time operational strategies:

- Those previously noted
- Managed Lanes
- Active Traffic Management
- Integrated Corridor Management
- Dynamic pricing



# Transit Management



## Example Benefits

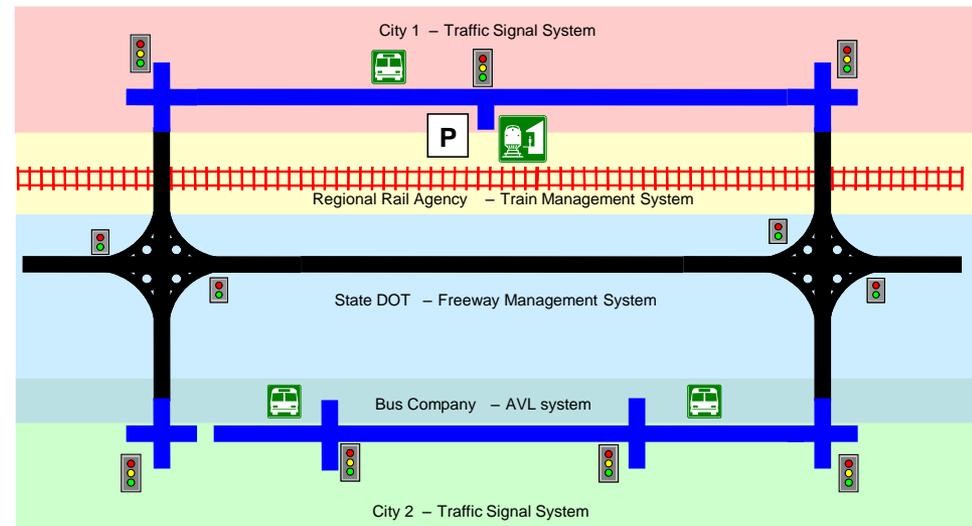
- AVL / CAD improved schedule adherence by 9 – 23%
- TSP improved bus travel times by 2 – 15% (minimal impact on side street traffic)

- Automated Vehicle Location (AVL)
- Computer Aided Dispatch (CAD)
- Automatic Passenger Counting (APC)
- Bus Rapid Transit (BRT)
- Transit Signal Priority (TSP)
- Transfer Connection Protection
- Automated Fare Media



# Integrated Corridor Management

- Corridors offer opportunities to optimize the entire system
- ICM is the operational coordination of multiple transportation networks and cross-network links
  - Integrated traveler info
  - Operational efficiency of network junctions
  - Cross-network route & modal shifts
  - Capacity and demand



## Example Benefits

- ICM along I-15 in San Diego: estimated B/C ratio of 9.7:1
- Simulation of ICM: B/C ratios of 7.1:1 to 25.1:1

# Connected Vehicles and the Future

- Vehicles “reading” the roadway and one another
- Collisions reduced; reliability improved
- Smarter operational decisions (possibly predictive)



## The Future?

- Technology transformation changes mobility
- What might be the impact of autonomous vehicles?
- DOT role in supporting development

# CMM Homework

- Conduct your own CMM self-assessment for your agency
  - AASHTO TSMO CMM Guidance website
  - <http://www.aashtotsmoguidance.org/>
- Email your scores
  - Joseph.gregory@dot.gov

# Guidance for Web Tool

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## What Is Transportation Systems Management and Operations (TSM&O)?

Transportation Systems Management and Operations (TSM&O) is a set of strategies to anticipate and manage traffic congestion, and minimize the other unpredictable causes of service disruption, delay, and crashes. This website is an online tool that uses self-evaluation and best practice experience that managers can use to identify key program, process and institutional preconditions to achieve more effective TSM&O. [Learn More >](#)

GUIDANCE TO IMPROVE THE EFFECTIVENESS OF YOUR TSM&O PROGRAM

 One-Minute

# EXAMPLE

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