



TSM&O

Transportation Systems Management
and Operations

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WHY IS TSM&O A RELEVANT TOPIC TODAY?

What is TSM&O? “*The Definition*”

- Transportation Systems Management and Operations (TSM&O)
 - “integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.”

Source(s): -1.) MAP-21, the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141), Title 23 U.S.C. Sec. 101. Definitions and declaration of policy, (30)

What are some of the TSM&O Strategies?

- Work Zone Management
- Traffic Incident Management
- Service Patrols
- 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

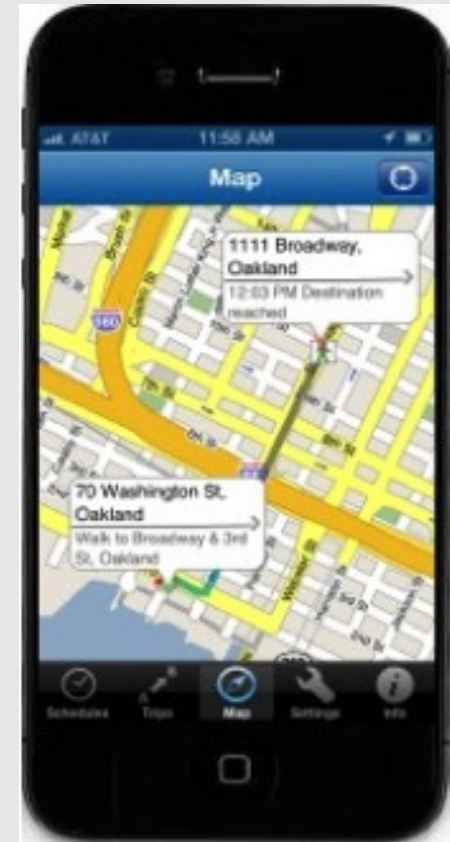
Source(s): -1.) Institutional Architectures to Improve Systems Operations and Management, SHRP2 Strategic Highway Research Program, SHRP2 Reliability Research, Report S2-L06-RR-1, -2.) Investment Opportunities for Managing Transportation Performance Through Technology. Intelligent Transportation System Joint Program Office, U.S. Department of Transportation, 2009, -3.) Benefits of Using Intelligent Transportation Systems in Work Zones: A Summary Report,. FHWA, April 2008

TSM&O – What makes it a relevant topic TODAY?

- Challenges brought about by the changing transportation environment and MAP-21
- How “operations” and supporting technologies can help address these challenges
- The importance of “mainstreaming” operations into the regional planning and programming processes
 - “Planning for Operations” – an objectives-driven, performance-based approach

The Transportation Environment is Changing

- Increased reliance on information and technology
- Increasing customer needs and expectations
- Growing emphasis on measuring performance
- Reduced financial resources
- Technology also offers opportunities – multiple operations strategies and regional integration of various modes



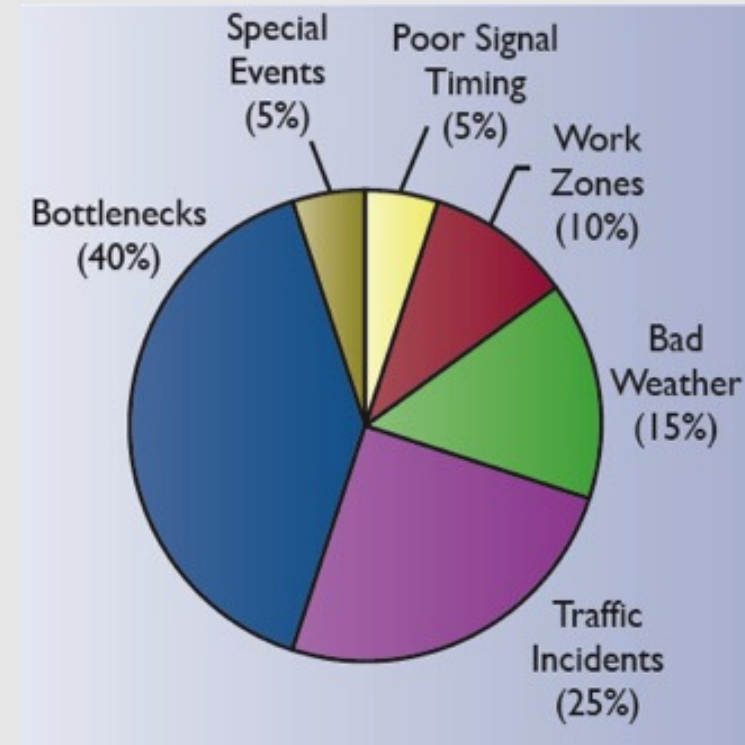
From 511SF website

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, 2005)

Mainstreaming Operations

“Planning for Operations” – a joint effort between planners & operators to merge operations into traditional planning and programming

- Develop and program operations strategies based on regional goals, objectives & performance measures
- Enhance the process so that operations investments are on par with construction & preservation funding.
- Help meet requirements of MAP 21 (i.e., “promote efficient operations”)



Operations Can Help Address These Challenges

- Leverage technology
- Preserve and maximize existing capacity
- Enhance safety
- Promote mobility and customer outreach
- Improve reliability for commuters and freight
- Manage bottlenecks
- Monitor performance
- Strategies implemented quickly at relatively low cost



Providing Effective, Safe and Reliable Transportation

- Building the necessary infrastructure
- Keeping in a state of good repair (maintenance & reconstruction)

Core attributes of planning process (LRTP, TIP); have been for decades

- Operating and managing the infrastructure on a day-to-day basis


Operations should be integrated into the traditional planning & programming processes

“Mainstreaming”

New construction will continue to be important.
But we can't build our way out of congestion!

Help Mainstream Operations into the Planning Process

Traditional Focus

- Long term
 - Capital investment
 - Project orientation
 - Capacity deficiencies
 - Link improvements
 - Environmental impacts
 - Recurring congestion (from forecasts)
- 

Needed (In Addition)

- Significant collaboration
- Consideration on non-recurring congestion & operations
- An objectives-driven approach
- Performance based focus on outcomes
- Network and region-wide applications
- Include on-going costs for operations & maintenance

Summary

- Operations is a critical component for managing the transportation network on a daily basis.
 - Enhance mobility, reliability, safety, and environment
 - Provide a sustainable transportation network
 - Support a performance-based approach, focusing on outcomes
 - Achieve quick and cost-effective implementation
- To be successful, operations need to be “mainstreamed” into the regional planning and programming processes and documentation

You have an important role to play in this regard.



TEXAS DEPARTMENT OF TRANSPORTATION

STRATEGY TO IMPROVE STATEWIDE TRAFFIC MANAGEMENT CAPABILITIES

Joint Initiatives Led by TxDOT

- **Statewide TSM&O Guidelines**

- Under an existing engineering services contract between the Texas Department of Transportation (TxDOT) and Atkins North America, Inc., statewide Transportation Systems Management and Operations (TSM&O) guidelines are being developed through a work authorization managed by the TxDOT Traffic Operations Division.



- **Transportation Management System (TMS) Planning at the District Level**

- Additionally, there is a joint initiative which involves the Traffic Operations Division (TRF) and the Information Management Division (IMD) at TxDOT supporting districts and MPOs to plan improvements in traffic management systems and operations throughout the State. Consulting firm Boston Consulting Group (BCG) is assisting with this initiative.



TSM&O Guidelines – Development Schedule

▲ Major Milestone ■ Time Duration

Weeks	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17
<i>Work Item</i>													
▪ Kick-off Meeting	▲												
▪ State of TSM&O Practice Assessment	■												
▪ Outreach Events*			■										
▪ CMM Assessments*				■									
▪ Surveys for Guidance Document Input						■							
▪ Consultant Recommendations							■						
▪ TSM&O Guidance Document (initial draft)							■						
▪ Comments on <i>Draft</i> Guidance Document								■					
▪ Revised Guidance Document									■				
▪ Finalized Guidance Document											■		
▪ Guidance Document Roll-out/Training												■	

* - Concurrently, BCG to follow-up with metro districts and MPOs – Recommendations for FY18 UTP

TSM&O Outreach Events

- Serve the purpose of providing education and promoting TSM&O concept while at the same time gathering input from the participant stakeholders for the statewide TSM&O guidance document.
- 30 participants expected for each half day outreach event
- Invitation letters currently being drafted and will be sent to all of the districts, some of the divisions, MPOs and various partner agencies.
- There will be a separate and optional TSM&O training session conducted at the 2016 ITS Texas Conference in Richardson, TX on November 9, 2016.

TSM&O Outreach Events - Schedule

- El Paso - October 17, 2016
- Dallas-Fort Worth – November 2, 2016
- Houston – November 3, 2016
- San Antonio – November 4, 2016
- Austin – November 17, 2016

- As part of this initiative, there will be a separate TSM&O training session conducted at the 2016 ITS Texas Conference in Richardson, TX on November 9, 2016.



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