

Transportation System Management & Operations

Presentation to ITS Alaska

September 11, 2017



OVERVIEW

- **TSM&O – Introduction and Definition**
- **Motivation and Problem Addressed**
- **AASHTO Operations Guide**
- **How State DOT's are responding**

The Reality: Operations Today

- **Surface transportation systems are made up of several independent networks**
 - Freeways, bus/rail transit, arterials, etc.
- **Most efforts to reduce congestion have focused on optimization of individual networks**
 - Agency/facility/mode – specific ITS systems & strategies
- **Minimal cross-network management in response to increased demand / reduction in demand**

WHAT DO OUR TRAVELERS WANT?

- **Safe, seamless, and reliable travel across modes and jurisdictions**
- **Information about current travel conditions**
- **Timely information to make mode & route choices**
- **Efficient and reliable goods movement**

Consistency across modes & jurisdictional boundaries

TSM&O - DEFINITION

→ **Transportation Systems Management and Operations**

A set of activities and strategies to manage transportation systems and resources in order to optimize system operation, improve safety, and anticipate and manage traffic congestion and impacts to system reliability.

→ **Examples:**

- Traveler information services
- Commercial vehicle operations
- Traffic incident management
- Road weather management
- Work zone management
- Intelligent Transportation Systems

MOTIVATION AND PROBLEM ADDRESSED

→ Increasing emphasis on need for TSM&O capabilities to address:

- Agency efficiency
- Sources of non-recurring congestion or disruption
- Impacts to system reliability and safety

→ Why?

- Sustain and enhance existing TSM&O strategy benefits
- Make better investment decisions under tightening fiscal constraints
- Proactively serving travelers in the state
- Addressing future system safety and reliability issues
- Accommodating evolving technology applications and system demands

Transportation System Management & Operations



TRANSPORTATION SYSTEM MANAGEMENT & OPERATIONS



SUPPORTING BETTER TSM&O

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



TSM&O PROGRAM

→ Characteristics:

- A set of goals, actions, and priorities that establishes TSM&O as a formal, critical activity in the state
- Sets out what TSM&O is, what it is meant to accomplish, and with what levels of agency capability
- Capabilities include appropriate institutional, organizational, collaborative, and technical capacities
- Includes setting objectives, planning, executing, managing, sustaining, and improving TSM&O strategies in a clear and deliberate manner
- Priority on par with traditional DOT programs (e.g. capital construction, bridge or pavement management)
- Often guided by a **TSM&O Program Plan**

TSM&O CAPABILITY DIMENSIONS

- **Organization & Staffing**
- **Culture**
- **Collaboration**
- **Business Processes**
- **Systems & Technology**
- **Performance Measurement**

PROCESS & INSTITUTIONAL DIMENSIONS OF CAPABILITY FOR TSM&O



“Capabilities”

*Business and technical
processes support
strategies*

*Organization
and relationships
support processes*



AASHTO OPERATIONS GUIDE

→ Need sprang out of focus on TSM&O within State DOTs

- Need for guidance on operations related activities
- Guidance on operations related project development
- Explore implications to highway design standards
- Operational strategies that should be “standard features”

→ Objectives

- Investigate focus and topics for Operations Guide
- Develop a plan and roadmap for activities leading to the Guide

Transportation Operations Guide

- Chapter 1 - Introduction

→ TSM&O Program

- Chapter 2 - TSM&O Description
- Chapter 3 - TSM&O Foundational Components
- Chapter 4 - Internal Processes to Support Operations (Capabilities, not Technical Expertise)
- Chapter 5 - Incorporating Operational Strategies into the Project Development Process (Process Oriented)
- Chapter 6 - Incorporating Operational Strategies into the Project Development Process (Project Oriented)
- Chapter 7 - TSM&O Funding Source Overview

→ Tactical Layer

- Chapter 8 - Fundamental Tactics
- Chapter 9 - Active and Advanced Tactics
- Chapter 10 - Emerging Tactics



Roadmap for Developing Operations Guide

