Transportation System Management & Operations

Presentation to ITS Alaska





#### **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**



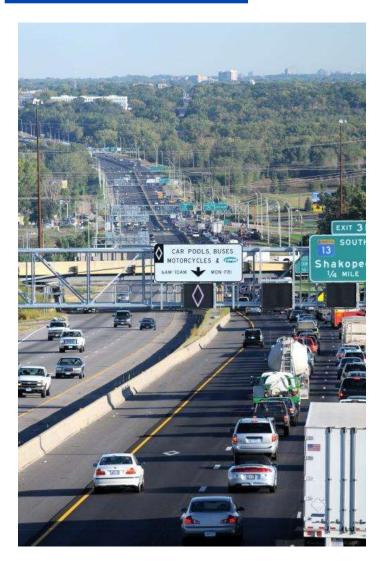








# TRANSPORTATION SYSTEM MANAGEMENT & OPERATIONS









# **SUPPORTING BETTER TSM&O**

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









#### **TSM&O PROGRAM**

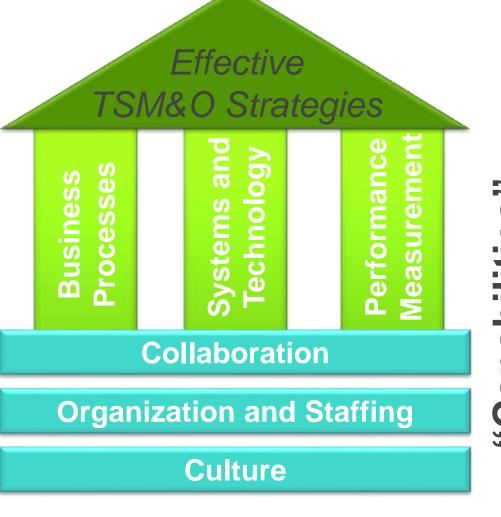
#### → Characteristics:

- 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

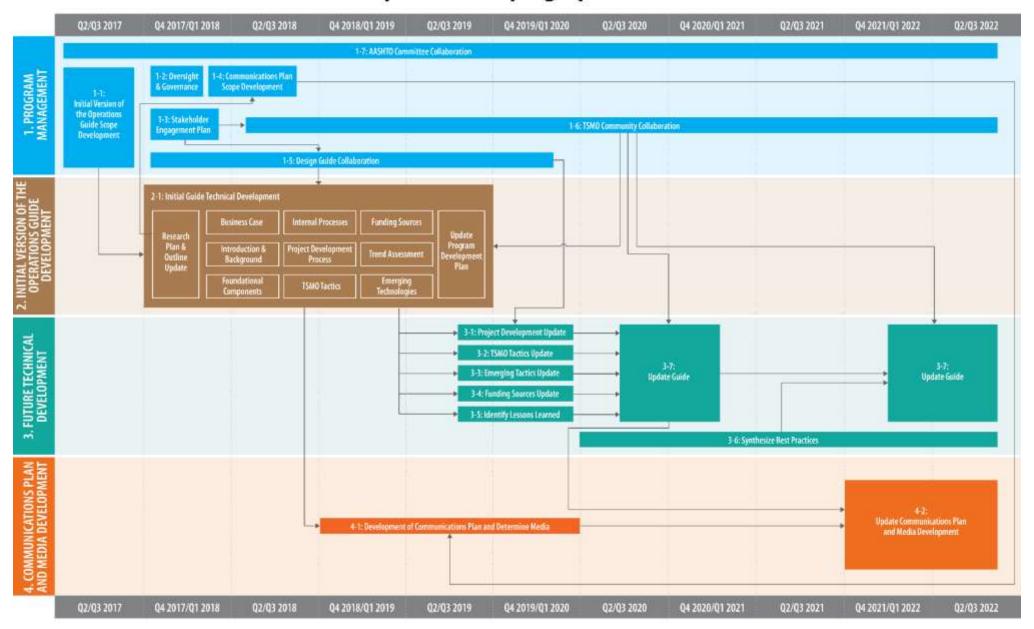
- Chapter 2 TSM&O Description
- Chapter 3 TSM&O Foundational Components
- Chapter 4 Internal Processes to Support Operations (Capabilities, not Technical Expertise)
- Chapter 5 Incorporating Operational Strategies into the Project Development Process (Process Oriented)
- Chapter 6 Incorporating Operational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





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