Alaska Department of Transportation and Public Facilities

TSMO Strategic Plan

for ITS Alaska

TSMO Strategic Plan

What is TSMO

Transportation Systems Management and Operations (TSMO) is a broad set of strategies that aims to optimize the safe, efficient, and reliable use of existing transportation infrastructure.

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What is TSMO

- Intelligent Transportation Systems (ITS) are a common element in many TSMO strategies.

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What is TSMO

Traditional TSMO strategies include:

- work zone management
- road and weather management
- special event management
- traveler information systems
- traffic incident management

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TSMO Goals & Objectives

- ✓ Improve Safety
- ✓ Increase Reliable Travel
- ✓ Enhance User Experience
- ✓ Improve Resource Management
- ✓ Integrate TSMO into Alaska DOT&PF

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TSMO Goals & Objectives

Improve Safety

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TSMO Goals & Objectives

Increase Reliable Travel

- Automate information related to crashes, weather, and environmental events like avalanches and wildfires
- Integrate technology with the Transportation Operations Center
- Standardize signal performance measures across the State

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TSMO Goals & Objectives

Enhance User Experience

- Improve the availability and consistency of existing real-time traveler information to the public
- Develop public-facing dashboards for TSMO Strategic Plan performance measures
- Develop guidelines for sharing data with the public

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TSMO Goals & Objectives

Improve Resource Management

- Hire dedicated Information Technology staff
- Standardize technology, guidelines, and equipment inventory management while maintaining user needs
- Develop a Data Management Plan, including internal data sharing guidelines

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TSMO Goals & Objectives

Integrate TSMO into Alaska DOT&PF

- Improve the TSMO training and development of new & existing staff
- Define TSMO responsibilities throughout DOT&PF
- Incorporate TSMO in standards, manuals, and throughout the project lifecycle
- Develop maintenance and operations budgets for TSMO programs and assets

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Existing TSMO Strategies

SAFETY

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Existing TSMO Strategies: OPERATIONAL

Alaska Project Exchange Mapper (APEX)
Dynamic messaging signs
GIS route optimization for plowing and snowplow tracking
Signal preemption for snowplows in Northern Region
Adaptive signal control and networked signals
Mobile road condition reporting through 511 Enhance the Maintenance Decision Support System (MDSS) used by M&O
Limited Work Zone Data Exchange (WZDx)

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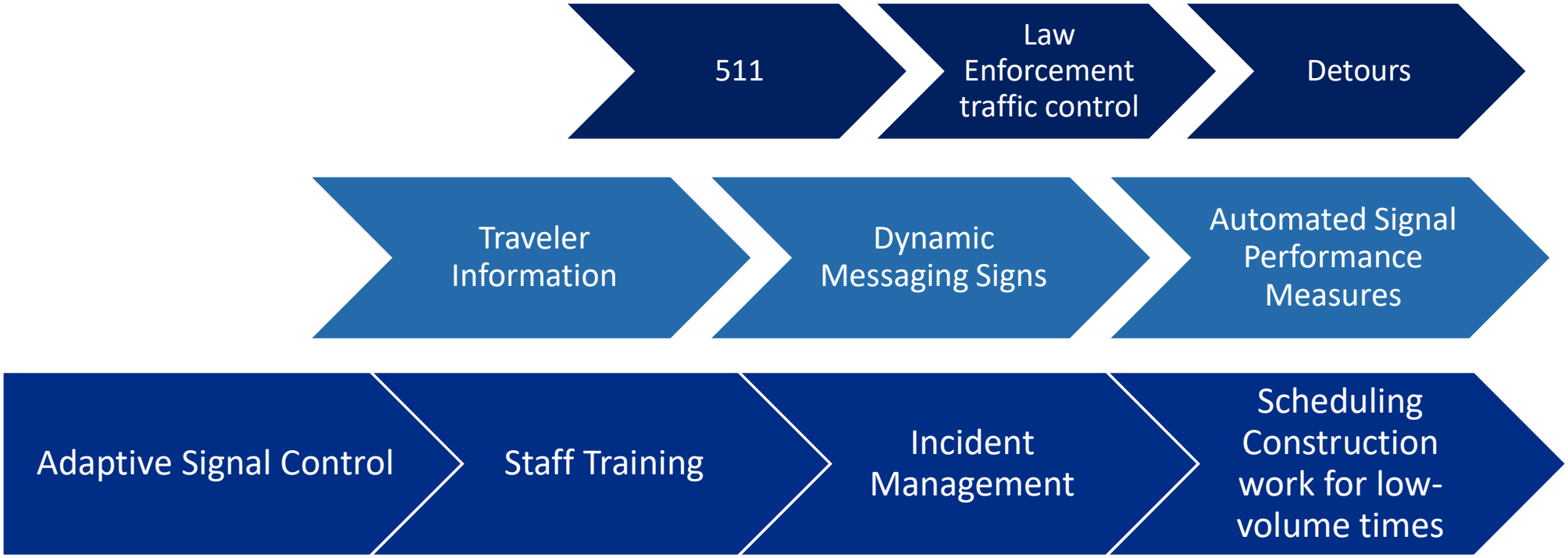
Existing TSMO Strategies for CONGESTION



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TSMO Strategy Recommendations

The recommended TSMO strategies are classified into nine categories which are based on the FHWA TSMO program areas and encompass a wide range of activities and applications.

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TSMO Strategy Recommendations

- Arterial Management
- Active Transportation and Demand Management
- Data Collection
- Traffic Incident Management
- Road Weather Management
- Work Zone Management
- Real-time Traveler Information
- Emergency Transportation Operations
- Workforce Development

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TSMO Program Recommendations

Research Needs to support the development and implementation of TSMO actions within the Department:

Developing TSMO Guidebooks
Testing and incorporating new technologies through Experimental Projects
Crowdsourcing Data to improve traveler information and operations

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TSMO Program Recommendations

Staffing Requirements

Understanding and identifying gaps in staffing in all departments that can support TSMO activities
Expanding staff as the TSMO program grows
Research new avenues to obtain and retain staff

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TSMO Program Recommendations

Budget Identifying budget needs for TSMO activities

- Maintenance and operations of existing assets
- Operating specific TSMO programs
- Budget for additional staffing

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TSMO Program Recommendations

Organizational Structure to support the mainstreaming and improving the effectiveness of TSMO within the agency.

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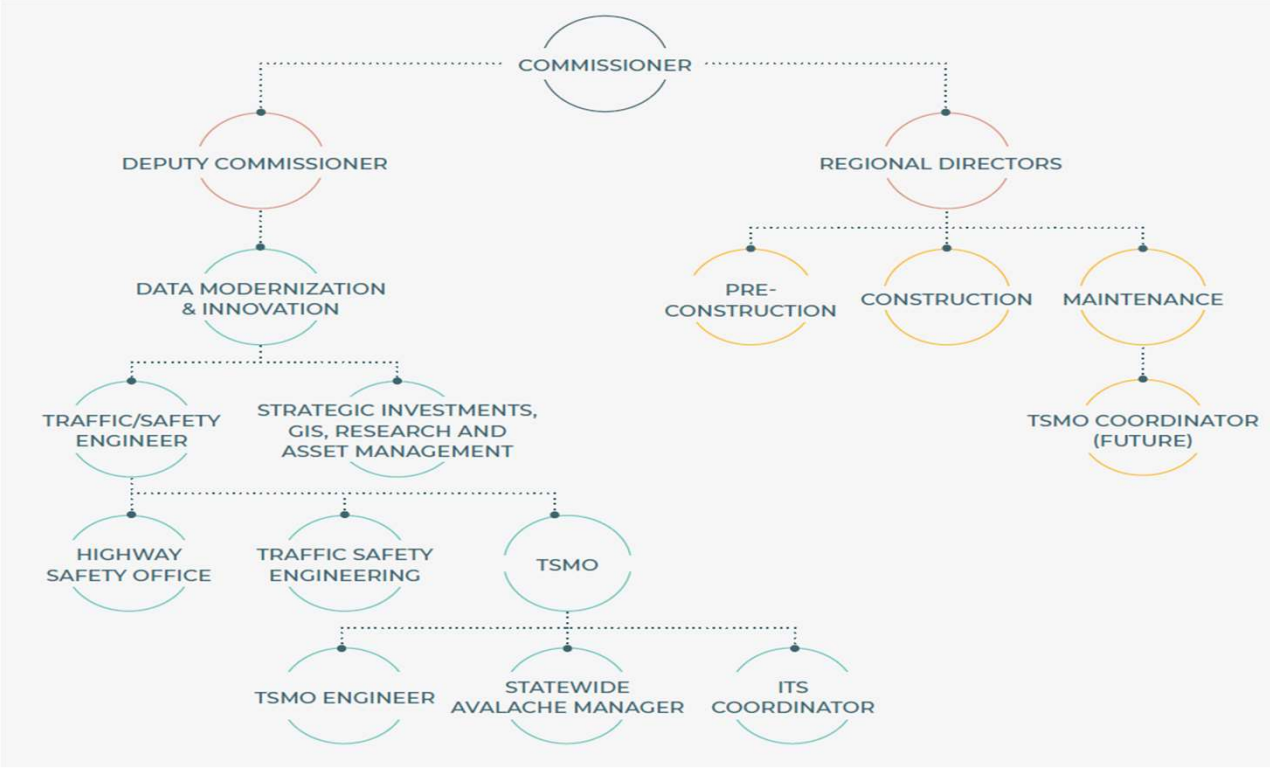
TSMO Program Recommendations: **Organizational Structure**



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TSMO Program Recommendations

Training Needs

- ✓ Statewide Cross-Training
- ✓ Regional & District Operations
- ✓ Traffic Incident Management (TIM) Training
- ✓ TSMO/ITS Technology Training
- ✓ TSMO Staff New Technology Training
- ✓ TSMO Outreach Training

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TSMO Program Recommendations

Policy and Procedures

- ✓ Planning & Project Development
- ✓ Standardized Data
- ✓ Standardized Communication Protocols
- ✓ Standardized ITS Equipment
- ✓ Continuity of Operations (COOP)

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Initial Implementation

Tier 1 – Start in the next 1 - 3 months

Create
A Fact Sheet

Existing/planned TSMO Project

Highlight benefits of the project

Review
Planning/Scoping
Practices & Policies

Guidance to support planning

for TSMO projects

for implementing TSMO elements in other projects

Review
Project Scoping
Documents & Guidance

Ensure that TSMO solutions are considered as alternatives to address transportation problems

Review
Project Development
Practices, Procedures & Documents

Ensure that TSMO elements are included in traditional projects

Establish
TSMO Coordinators

(temporary or interim)

For each Region while working toward creating permanent positions

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Initial Implementation: **Tier 2** – Start in the next 3 - 6 months

Develop or Implement TSMO Training

- NHI Courses on Planning for TSMO is a good example.
- The Operations Academy offers intensive training for some key staff.

Develop a Data Management Task Force

- Include teams focused on: Data collection, Data use, and Performance Measures.

Establish a Cross-Disciplinary Traffic Incident Management Team

- Statewide level focused on policy or pilot a local team.

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Initial Implementation: **Tier 2** – Start in the next 3 - 6 months

Develop Regional TSMO Plans

- Focus on project implementation.

Submit a BIL Grant Application with a TSMO Focus

- RAISE, ATTAIN, or SMART Grant
- e.g., a PROTECT grant, possible focus on severe storms, earthquake & tsunami preparedness.

Schedule and Hold a Statewide TSMO Meeting

- This would be a regular (annual or biannual) meeting.

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Initial Implementation: **Tier 3** – Start in the next 7 - 12 months

Develop a TSMO Guidebook focused on Alaska's unique needs

- Develop a catalog of TSMO solutions and possible funding sources.

Formalize a Task Force with the Department of Public Safety

- Determine the process to implement a joint operations center.

Identify & inventory existing TSMO equipment

- Develop an asset management framework.
- Determine which equipment should be standardized across the state.

Identify updates to the TSMO Plan

- as projects & programs are implemented including adding airports and ferries into the plan.

Develop Budget and Organizational Structures to support TSMO

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Questions