Advancing Transportation Systems Management and Operations (TSMO) in Rural Areas

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Why Rural TSMO?

- Opportunities in rural areas
- TSMO’s connection with safety
- Importance of travel time reliability, especially with the freight community
An integrated set of 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.

23 U.S.C. 101(a)(30)(A)
TSMO Strategies

- Work Zone Management
- Traffic Incident Management
- Special Event Management
- Road Weather Management
- Transit Management
- Freight Operations
- Traffic Signal Coordination
- Traveler Information
- Ramp Management
- Congestion Pricing
- Active Transportation and Demand Management
- Integrated Corridor Management
- Access Management
- Improved Bicycle and Pedestrian Crossings
- Connected and Automated Vehicle Deployment
Paradigm Shift

- Operating completed projects
- Static and reactive
- Average travel time, level of service
- Adding capacity
- Integration throughout the project life cycle
- Responsive, proactive, and predictive
- Travel time reliability
- Preserving and restoring existing capacity
Paradigm Shift

• Focus on individual facilities and jurisdictions

• Moving the car/truck from point A to point B

• Individual strategies

• Entire transportation system

• Moving the person/cargo from point A to point B

• Integrated strategies
## Urban vs. Rural Congestion

<table>
<thead>
<tr>
<th>CAUSE OF DELAY</th>
<th>CONTEXT</th>
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<tbody>
<tr>
<td></td>
<td>Large Urban Areas &gt; 1m</td>
</tr>
<tr>
<td><strong>RECURRING CAUSES</strong></td>
<td>29-37%</td>
</tr>
<tr>
<td>Demand greater than capacity</td>
<td>4-5%</td>
</tr>
<tr>
<td>Poor signal timing</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL RECURRING</strong></td>
<td><strong>33-42%</strong></td>
</tr>
<tr>
<td><strong>NON-RECURRING CAUSES</strong></td>
<td></td>
</tr>
<tr>
<td>Crashes</td>
<td>35-36%</td>
</tr>
<tr>
<td>Breakdowns</td>
<td>6-7%</td>
</tr>
<tr>
<td>Work zones</td>
<td>8-19%</td>
</tr>
<tr>
<td>Weather</td>
<td>5-6%</td>
</tr>
<tr>
<td>Special events, other</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL NON-RECURRING</strong></td>
<td><strong>58-67%</strong></td>
</tr>
</tbody>
</table>
Incidents

Source: Washington DOT

Source: Wisconsin State Patrol
I-25 CLOSED TO LIGHT HIGH PROFILE VEHICLES
WIND GUSTS 55+ MPH

Source: FHWA
Work Zones

Source: FHWA

Source: FHWA
Special Events

Source: Minot Air Force Base

Source: FHWA
Feedback on Rural TSMO

• Based on feedback in various workshops and venues
• General approach
• Making the business Case
• Data and information
• Incident management
• Staffing

Source: Wyoming DOT
General Approach

- Ad hoc approach to non-recurring congestion
- Statewide vs district focus
- Participation by rural districts
- Local governments
- Corridor coalitions
Making the Business Case

- TSMO provides value in rural areas
- No Recurring Congestion

Source: Tracy Scriba, FHWA
• The benefit-cost of investing in performance measurement and data collection systems

• Technology not warranted for rural roads/remote areas

• Need to further educate rural staff on the benefits and purpose of TSMO strategies
Data and Information

- Need for information in rural areas
- Need for more cameras
- Connectivity in the rural areas

Source: FHWA
• Rural response agencies are small with limited resources

• Response time can still be an issue in the rural areas of the state

• Coordination challenges with rural/remote responders

www.respondersafety.com
Incident Management

- Collaboration challenges with land use and access management
- Limited options for collaborating on alternate routes
- Tow Incentive and Recovery programs

Source: Oregon DOT
Staffing

• Capacity of rural groups

• Staff retention

• The re-organization of State DOT districts toward TSMO

• Citizen Reporter Program
Other Feedback

- Intelligent Transportation Systems (ITS) test runs

- Geographic Information Systems (GIS)

- Community outreach

Source: FHWA
I-35 Work Zone Traveler Interface

Credit – Tom Kearney, FHWA
Questions to ask in Advancing TSMO

• Who owns what routes in the transportation system? (freeways, arterials, local roads)

• Are we coordinating with the right stakeholders? (State/local DOT’s, cities, counties, metropolitan planning organizations, transit authorities, first responders, etc.)

• Is TSMO integrated into current processes, such as planning and project development?

• Do we have goals and objectives for TSMO in our State or region? Are they reflected in our existing plans and processes or will new ones need to be developed?
• Does our staff have the right skill sets to advance TSMO?

• How are we tracking and monitoring the performance of our transportation system?

• How can we best utilize the data and metrics we have?

• What technology needs should we address to advance TSMO? Is our technology interoperable with other related systems and jurisdictions?

• Do senior leadership and other departments understand TSMO?
What is TSMO?

The following list of questions relates to TSMO.

- What is Transportation Systems Management and Operations (TSMO)?
- What is meant by "an integrated set of strategies"?
- What is meant by "the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects"?
- What are examples of TSMO strategies and solutions?
- Why should I consider TSMO?
- Does TSMO replace capacity building projects?
- Does TSMO only include technology-based strategies?

TSMO

An integrated set of 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.

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Questions?

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