

Transportation Systems Management & Operations

A 21st Century Approach to Transportation Planning and Management

*Advances in technology and a better understanding of traffic congestion demonstrate the potential for **Transportation Systems Management & Operations (TSM&O) solutions** to make the most of existing roadway infrastructure to minimize delay and reduce congestion.*

TSM&O solutions can support necessary capacity additions through immediate improvements that may reduce the cost and scope of long-term enhancements. Improvements may include:

- **Traveler information systems**, enabling drivers to make choices about how and when they travel
- **Incident management systems**, which help reduce the impact of crashes and other incidents by providing immediate response
- **Smart work zones**, by providing real-time traffic information through variable message signs to alert drivers and encourage them to divert to an alternate route when there is congestion
- **Managed traffic lanes for high-occupancy vehicles**, including buses, to increase efficiency for all travelers
- **Synchronized signal systems or roundabouts** at intersections to improve traffic flow

*TSM&O strategies can address congestion that results from both **recurring and nonrecurring causes**, effectively expanding the solutions available for all traffic situations.*



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Collaboration is the key to gaining support for TSM&O strategies

While funding is important, relatively small investments can lead to significant improvements in traffic flow. Systems and data already in place and available can be used to support these strategies. Collaboration across transportation agency disciplines and with external partners can support strategies to reduce traffic disruptions. Encourage partner agencies—transportation, law enforcement, emergency responders, towing and recovery, traffic information media, and others—to capitalize fully on these strategies. Collaboration on practices and procedures as well as making decision makers aware of your partners' support can make a lasting impact.

Demonstrating results will lead to ongoing TSM&O support

Achieving higher levels of effectiveness—ultimately more efficient traffic flow—requires processes that are documented, performance driven, and supported by the transportation organization and other key stakeholders. Performance data is provided through implementation of TSM&O solutions. For example, road weather information systems have been shown to reduce traveler delays and lower crash rates. First identify the baseline for these measures before implementing an TSM&O solution, and then evaluate the impact on your local transportation network. Be sure to share these findings with your transportation colleagues and other key stakeholders to continue to strengthen support for these strategies.



Causes of Congestion

Inadequate Base Capacity	
Traffic Incidents	
Adverse Weather	
Work Zone	
Traffic Control Devices	
Special Events	

TSM&O Solutions

Congestion caused by inadequate capacity is typically addressed by adding pavement. However, there are other strategies that can improve the situation in the short term at a much lower cost. These solutions also address the other causes of congestion.

- Clear crashes and other incidents more quickly and safely
- Provide freeway service patrols for immediate assistance
- Implement technologies that alert drivers to the situation in advance
 - Message signs provide immediate information
 - Traveler information through smartphones and online resources allows travelers to plan ahead

Many agencies are taking advantage of some of these approaches. Collecting data before and after implementing a strategy will help demonstrate benefits as well as help target the right approach for a particular need.

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