



Transportation Systems Management & Operations (TSMO)

Enhancing Quality of Life for All Texans

Go to www.menti.com and enter 34 69 6

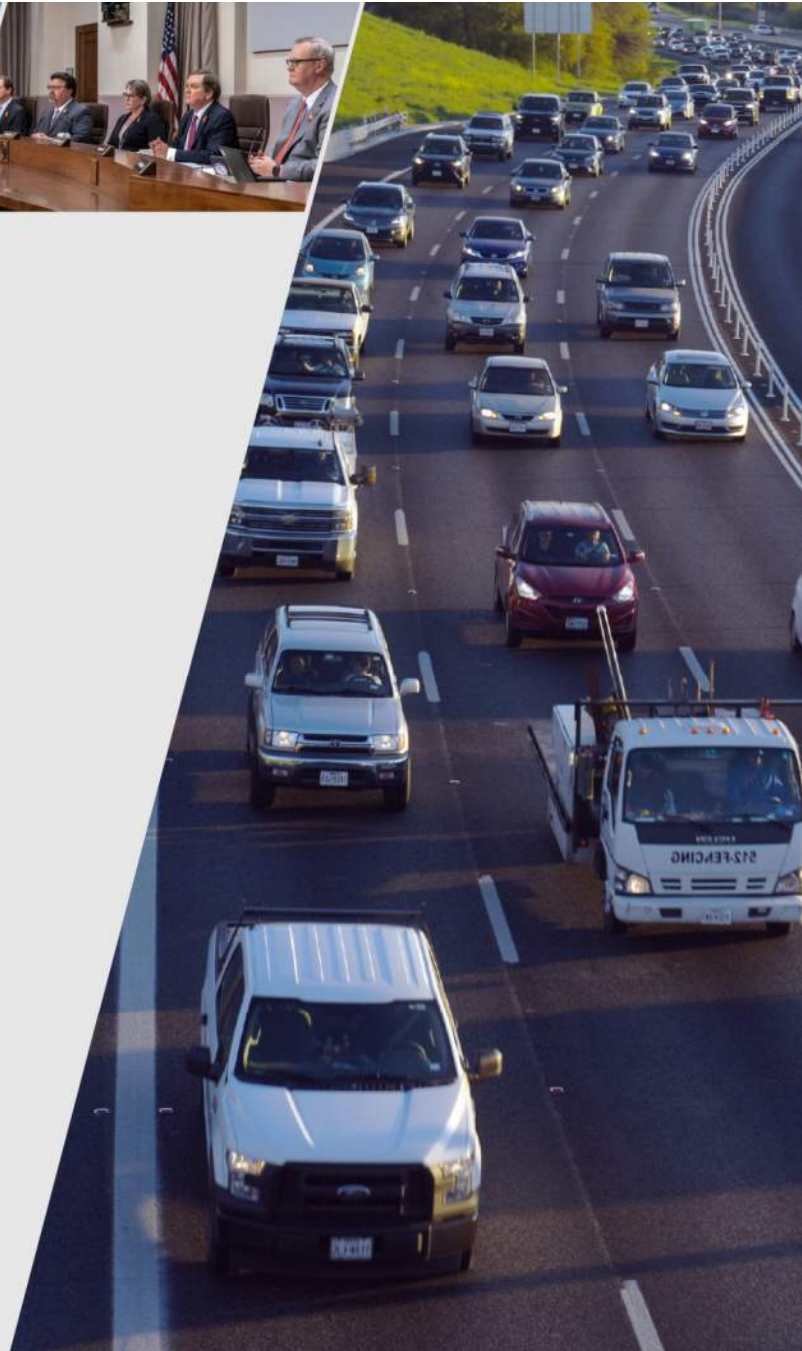


Table of Content



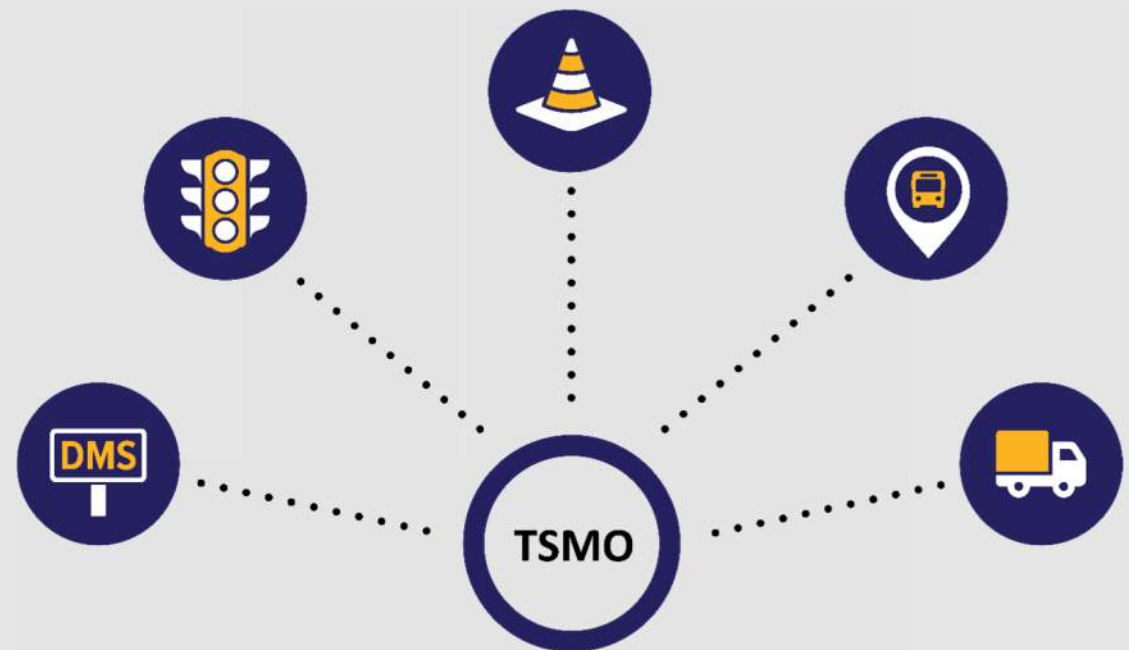
1	What is TSMO?	3
2	Why TSMO?	5
3	Safe System Approach	10
4	TSMO Strategies	11
5	Keys to TSMO	13
6	TSMO Mindset	15
7	Workshop	16

What is TSMO?



A Shift in the Management of Transportation Systems to Optimize Existing Infrastructure

- Prioritizes Road User Quality of Life
- Strategies that Focus on Safety and Maintenance of the Overall Transportation System
- Advocates for Funding for Mobility Strategies thru Cost-Saving Coordination
- Performance-based practical design



What is TSMO?



- **Vision Statement:** Improve Safety and Mobility for All Modes of Transportation by **Integrating Planning, Design, Operations, Construction, and Maintenance** Activities and Acknowledging All Opportunities for Innovation
- **Mission Statement:** Through Innovation, Collaboration, and **Performance-Based Decision Making**, Transportation Facilities are Developed, Constructed, Maintained, and Operated Cost-Effectively, with the End User in Mind

Goals



Why TSMO?



Why Do We **Need** TSMO?

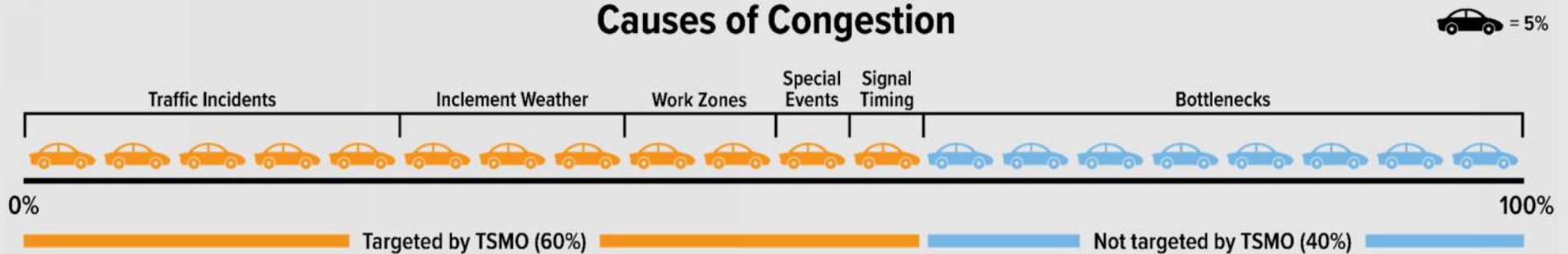




Congestion

- Travel Delay per Year is 8.8 Billion Hours
- 54 Hours Lost per Commuter per Year
- Cost of Gridlock is \$166 Billion per Year

Causes of Congestion



TSMO strategies could help reduce **60%** of all traffic congestion

Source: FHWA Traffic Congestion and Fatality Report
www.tinyurl.com/fhwacongestionreport



Economic & Environmental Viability

- Nationwide Truck Congestion Cost is **\$20.5 Billion** Annually
- **3.3 Billion Gallons** of Fuel is Wasted per Year in Stalled Traffic



Houston Lost **\$4.5 Billion** in 2017 Due to Lost Productivity and Wasted Fuel with Each Commuter Spending **75 hours** Sitting in Traffic

Source: TTI, 2019 Urban Mobility Report. Available at: <https://static.tti.tamu.edu/tti.tamu.edu/documents/mobility-report-2019.pdf>



New Construction will Continue to be Important, But We Can't Build Our Way Out of Congestion!



Source: Kevork Djansezian/Getty Images

Why TSMO?



- 3,588 Fatalities on Texas roadways in 2019
- 10 People Killed per Day on Average
- November 7, 2000 - Last Deathless Day on Texas Roads
- 12,161 Serious Injury Crashes in 2018
- 249,241 Injury Crashes in 2018



Mission Zero

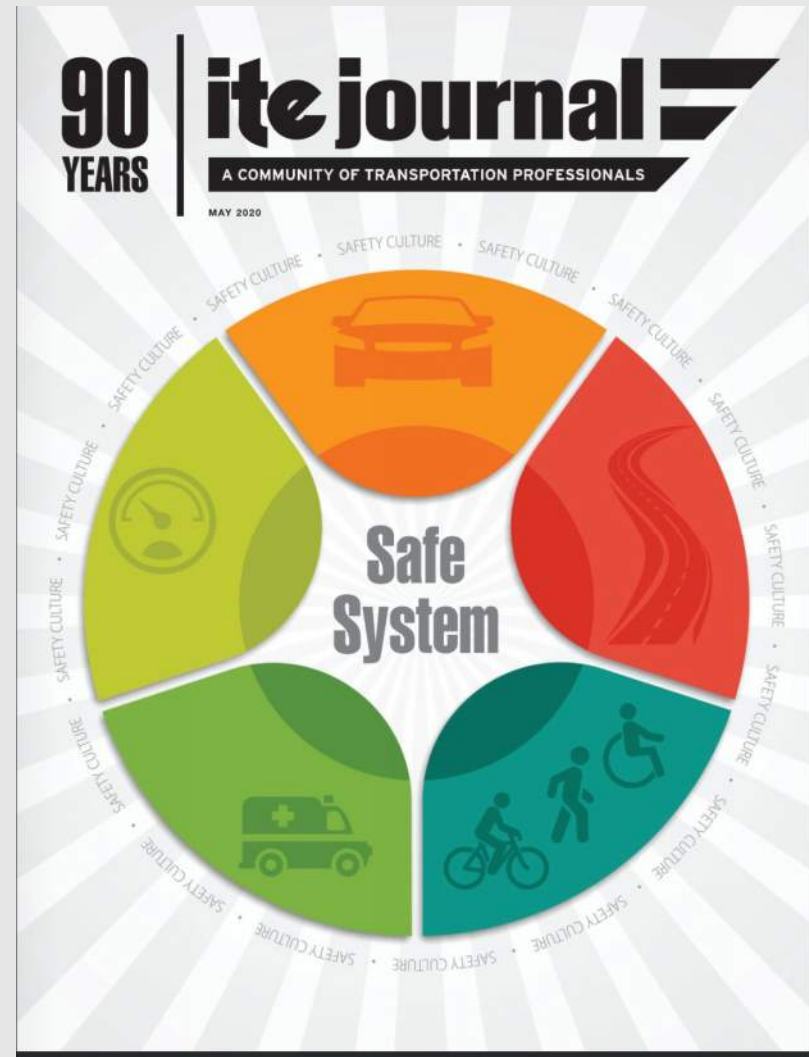


- The Texas Transportation Commission Adopted a Formal Goal to Achieve **Zero Fatalities** on Roadways by 2050 and Cut Fatalities in **Half** by 2035

Source: TxDOT (http://ftp.dot.state.tx.us/pub/txdot-info/trf/crash_statistics/2018/01.pdf)



TSMO Strategies are
part of the
Safe System Approach!!





TSMO Statewide Strategic Plan

Work Zone Management

Special Event Management

Access Management

Road Weather Management

Freight Management

Transit Management

ITS Architecture

Traffic Signal Coordination

Integrated Corridor Management

Active Transportation Management

Rural Emergency Response & Service Patrols

Asset Management

Traffic Incident Management

Capability Maturity Model

Stakeholders / Collaboration



TIM has reduced annual delay by **129.5 MILLION HOURS** saving the public **\$2.5 BILLION**

TIM reduced secondary crashes by **69%**

Road Weather Information Systems lower crash rates by up to **83%**



Connected Truck Platooning could reduce fuel costs by **20 - 25%**



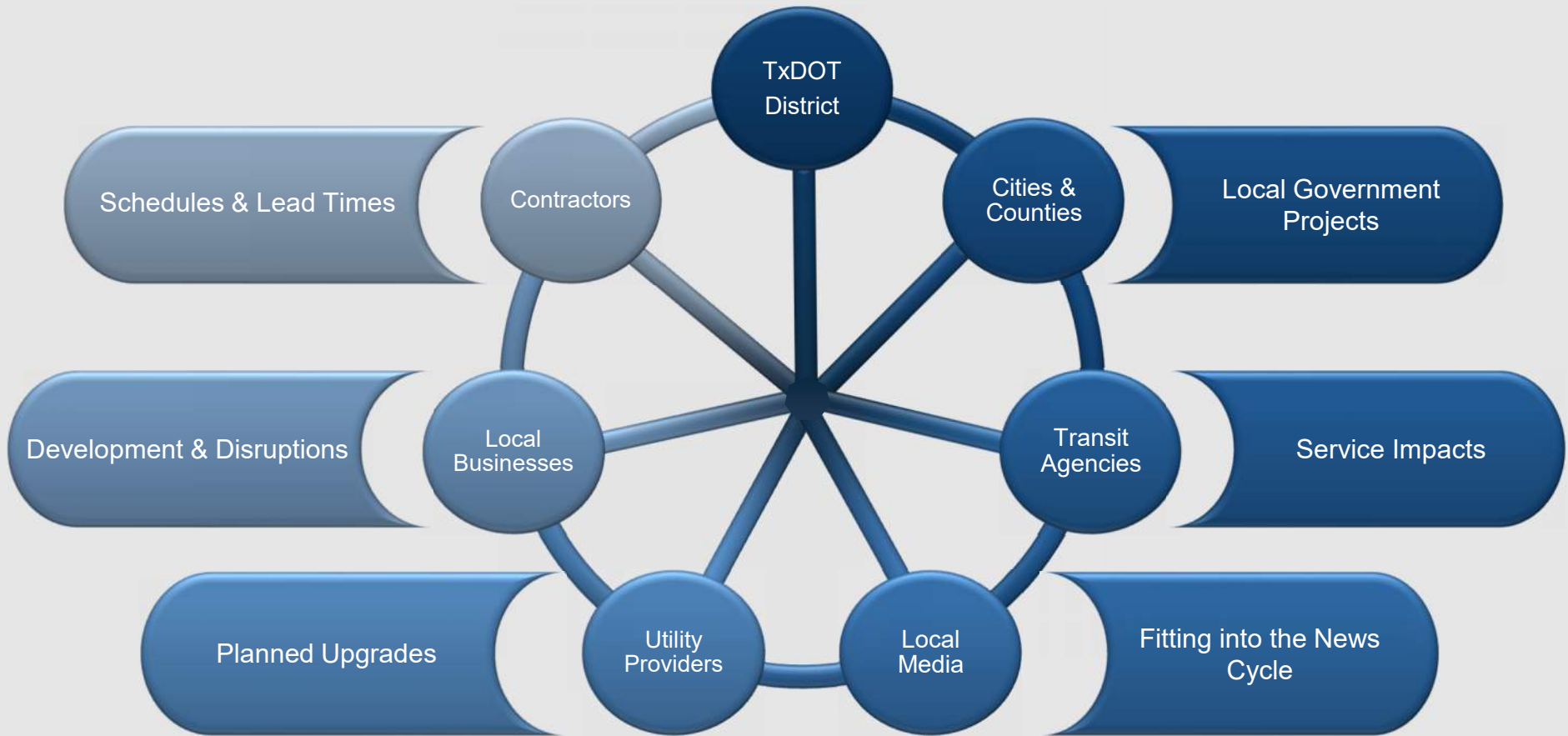
Active Work Zone Management reduces crashes by **18 - 45%**

Source: TTI, Commercial Truck Platooning (<https://static.tti.tamu.edu/tti.tamu.edu/documents/0-6836-1.pdf>); FHWA, TIM Quick Clearance Laws (https://ops.fhwa.dot.gov/publications/fhwahop09005/role_relevance.htm); FHWA, Road Weather Management Program (<https://ops.fhwa.dot.gov/weather/overview.htm>) ARTBA Work Zone Safety Consortium (https://www.workzonesafety.org/files/documents/training/courses_programs/rsa_program/RSP_Guidance_Documents_Download/RSP_EndOfQueueWarning_Guidance_Download.pdf)





Keys to TSMO – Coordination



IDEAS TO SHIFT TO A TSMO MINDSET



Traditional Method	TSMO
Operating Completed Projects	<ul style="list-style-type: none"> •Integration throughout the Project Life Cycle Planning •Project Development •Construction •Maintenance
Static and Reactive	Responsive, Proactive, and Predictive
Average Travel Time, Level of Service	Also Travel Time Reliability
Adding Capacity	Preserving and Restoring Existing Capacity as an asset to manage
Focus on Individual Facilities and Jurisdictions	Entire Transportation System
Moving the Car/Truck from Point A to Point B	Moving the Person/Cargo from Point A to Point B
Individual Strategies	Integrated Strategies



How Would You Deal With Your Given Scenario?

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Scenario #1 – Incident on a Freeway



- Metropolitan District – Large City
- 2 of 4 Lanes Blocked
- Additional Information
 - Parallel Continuous Frontage Roads
 - Crosses 2 municipalities



Source: <http://www.startgrouptraining.com/images/Traffic%20Incident%20Header.jpg>

Scenario #2



- Multimodal Center Development
 - Multiple Concurrent Projects
- City Project with Federal Funding
- TxDOT to Build Elevated BRT Lanes
 - Connecting to Nearby Freeway
- Transit Transfer Center
 - Existing Bus System
 - Transit Agency has Future Light Rail Plans
- Nearby Development
 - Developers Considering Potential Transit-Oriented Development
- Metro District – Large City





■ Take Home – Action Items

- Coordinate With a TSMO Champion from your Organization
- Think of Ways to Implement TSMO Strategies for Each Project That You Work On to create redundancy.
- Remember the **Three Keys to TSMO!!**





QUESTIONS??

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