



# Mainstreaming Transportation Systems Management and Operations (TSMO) into Performance-Based Transportation Planning

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# Changing Transportation Environment

- Challenging fiscal and physical environment limits opportunities for increasing road capacity.
- Heightened customer expectations.
- Increased reliance on information and technology.
- Growing emphasis on measurable outcomes and performance-based management and investment.
- Needs for rebuilding and modernizing infrastructure.
- Emerging technology and data offer opportunities to enhance operations.

A strong foundation for  
TSMO is critical.



# What is TSMO?



## **Transportation Systems Management and Operations**

“[A set of] integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects” (MAP-21, (a) (30)).

“Integrated strategies” means:

- Regional integration
- Intermodal coordination
- Interagency collaboration
- Technical integration



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# How do you describe TSMO?

- Optimizing use of existing facilities.
- Maximizing performance of the system.
- Buying the most mobility for the least cost.
- Treating capacity as an asset to manage.
- Getting you there – people and goods.
- Targeted solutions to congestion causes.
- Complement to capacity projects.
- Flexible approaches to match demand to supply.



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# Example TSMO Strategies and Approaches

- Work Zone Management
- Traffic Incident Management
- Special Event Management
- Road Weather Management
- Multimodal Coordination
- Freight Management
- Traffic Signal Coordination
- Traveler Information
- Ramp Metering
- Managed Lanes
- Active Traffic Management
- Integrated Corridor Management

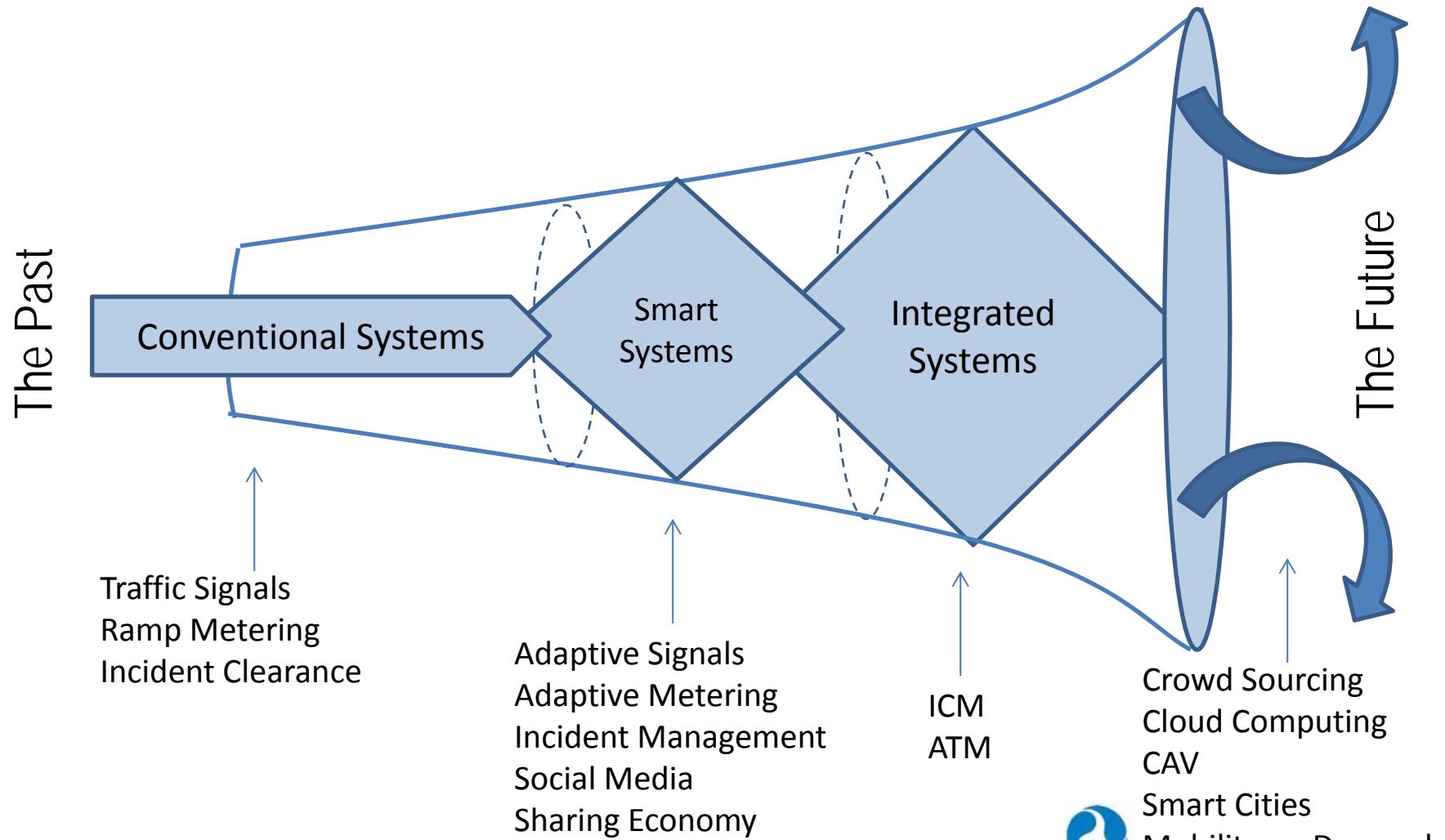
Implemented and operated by transportation agencies (State DOT, transit agency, local DOT) on a day-to-day basis.



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# Evolution of TSMO Strategies



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# Characteristics of Effective TSMO

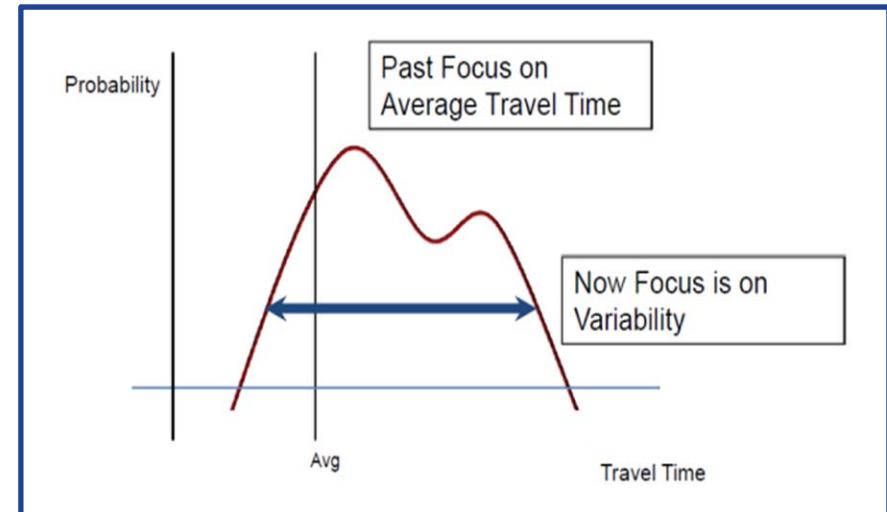


Typical Activities	Formal TSMO Program
<ul style="list-style-type: none"><li>• Fuzzy mission</li><li>• No formal program budget</li><li>• Ad-hoc processes depend on champions</li><li>• Changing technology</li><li>• Lack of outcome-based metrics</li><li>• Stove-piping</li><li>• Reactive</li></ul>	<ul style="list-style-type: none"><li>• Clear mission</li><li>• Program/plan/budget</li><li>• Processes standardized</li><li>• Inoperable technology</li><li>• Clear performance metrics</li><li>• Clear roles and responsibilities</li><li>• Proactive</li></ul>



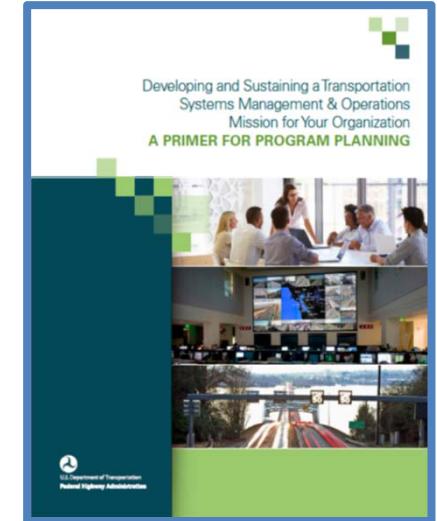
# Value of Travel-Time Reliability

- Customers care about predictability of travel.
- Agencies need tools to better understand and identify strategies to improve travel-time reliability.



# TSMO Program Planning

- How to develop, integrate, and sustain TSMO as a core program.
- Three main elements:
  - Strategic
  - Programmatic
  - Tactical
- Looks at:
  - How does TSMO currently fit into my agency?
  - What steps can I take to orient my agency toward TSMO?
  - How do we get there and who needs to be involved?
  - How do we establish and sustain it?
- More than 10 developed by States/MPOs/regions, and about 10 more underway.



# How is TSMO Helping?

- Better understanding of the importance of reliability.
  - New ways to display data to better communicate.
- Greater ability to diagnose causes of congestion issues.
- Modifying processes to integrate TSMO.
  - Integrating travel-time reliability into planning – project and strategy analysis, and investment decisions.



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# What This Means For You?

- Does your agency's culture support TSMO?
- Does your agency have a readily identifiable TSMO program?
- Are you ready to communicate the value of TSMO?
- Can you effectively make the case for TSMO investments?
- Are you positioned to provide TSMO capabilities to your DOT customers to fill the gap?
- Has your region built the necessary partnerships?
- Have you tried SHRP2 products to help with this?



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# Websites and Contact Info

- FHWA Planning and Organizing for Operations  
[ops.fhwa.dot.gov/plan4ops/index.htm](http://ops.fhwa.dot.gov/plan4ops/index.htm)
- National Operations Center of Excellence  
[www.transportationops.org](http://www.transportationops.org)
- Tracy Scriba, FHWA Office of Operations  
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