

NJDOT - TSMO Communications Plan

ITS-NY Presentation
December 2020



NJDOT TSMO Communications Plan

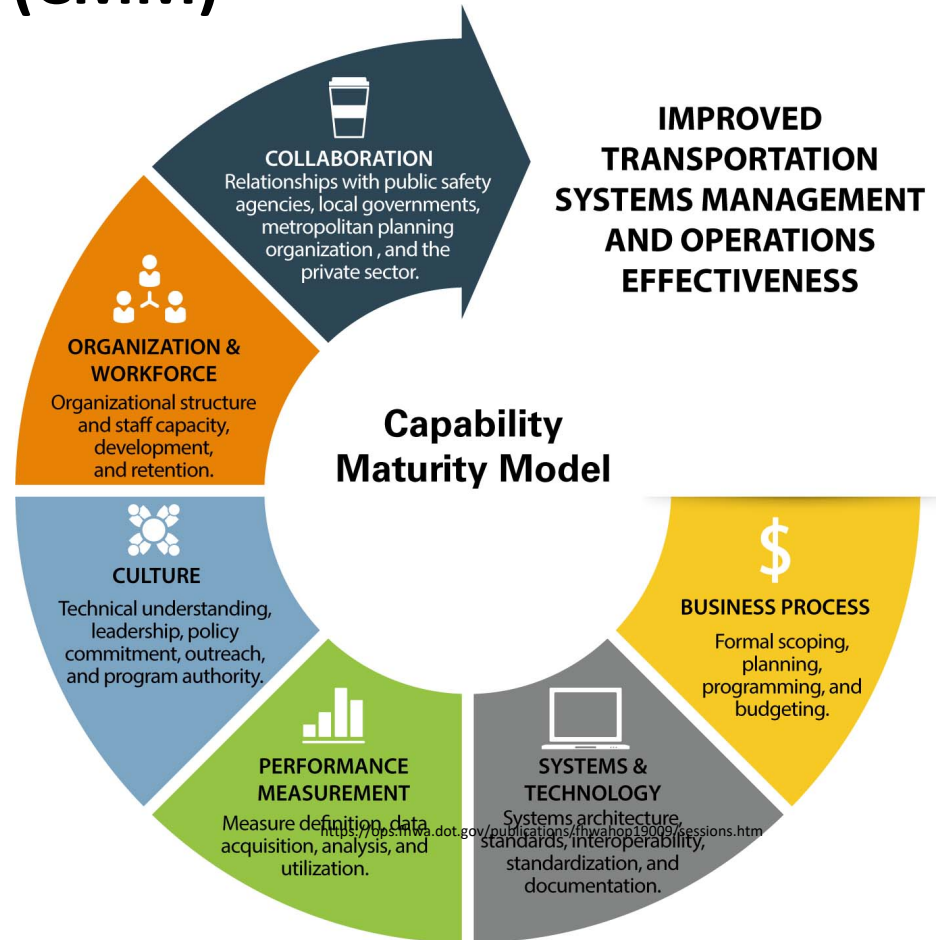
- Using Capability Maturity Model (CMM)
- The Plan
- The Audience
- Plan Goals and Strategies
- Implementation and Steps Towards our Goal
- Continuous Improvement



NJDOT TSMO Communications Plan

Capability Maturity Model (CMM)

- CMM – defines six key dimensions to help transportation agencies improve the effectiveness of their TSMO activities.
- CMM Assessment – helps the agencies identify actions to improve TSMO capabilities





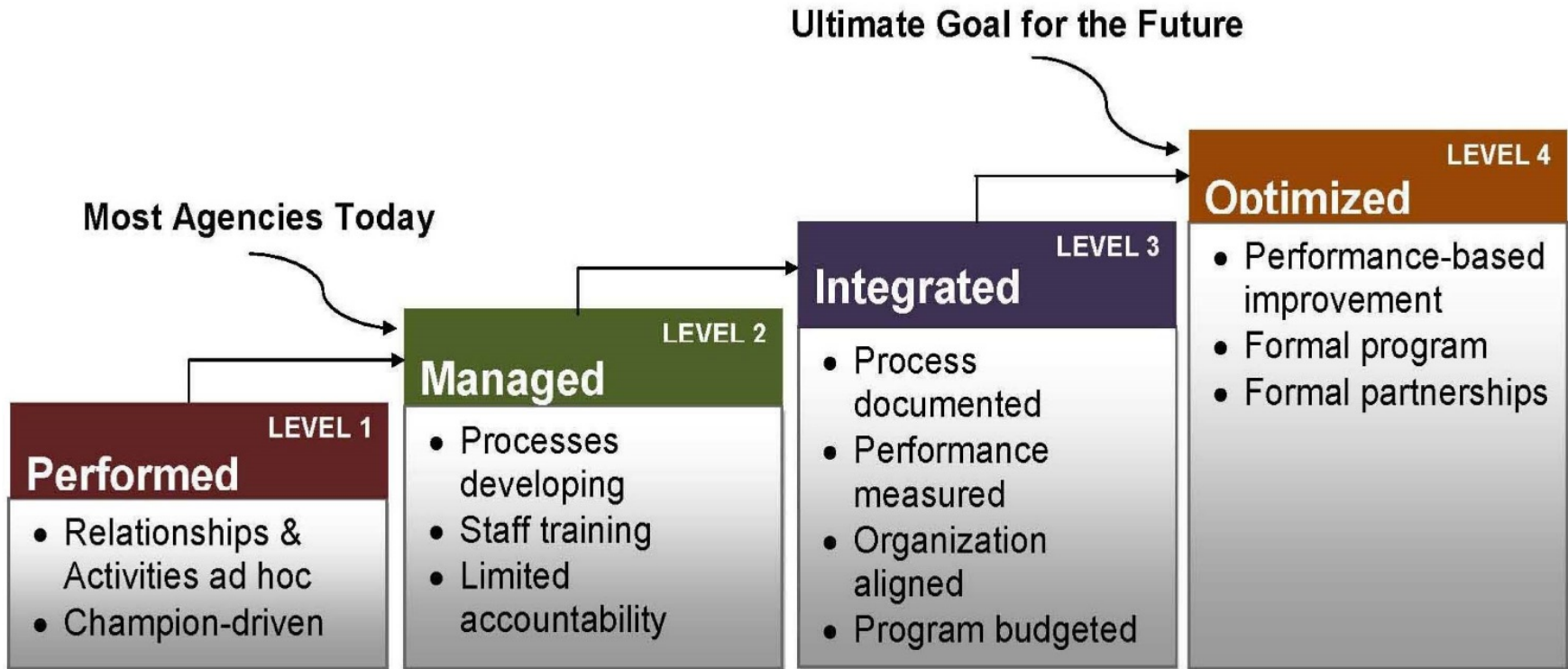
Capability Maturity Framework Tenets

- Process matters: projects fail or do not achieve desired functionality for variety of reasons unrelated to the technology;
- Prioritizing the rights actions is important: is an agency ready, how do they know, and what should they do next;
- Focus on the weakest link: what is holding the agency back in becoming a leader in a particular area.



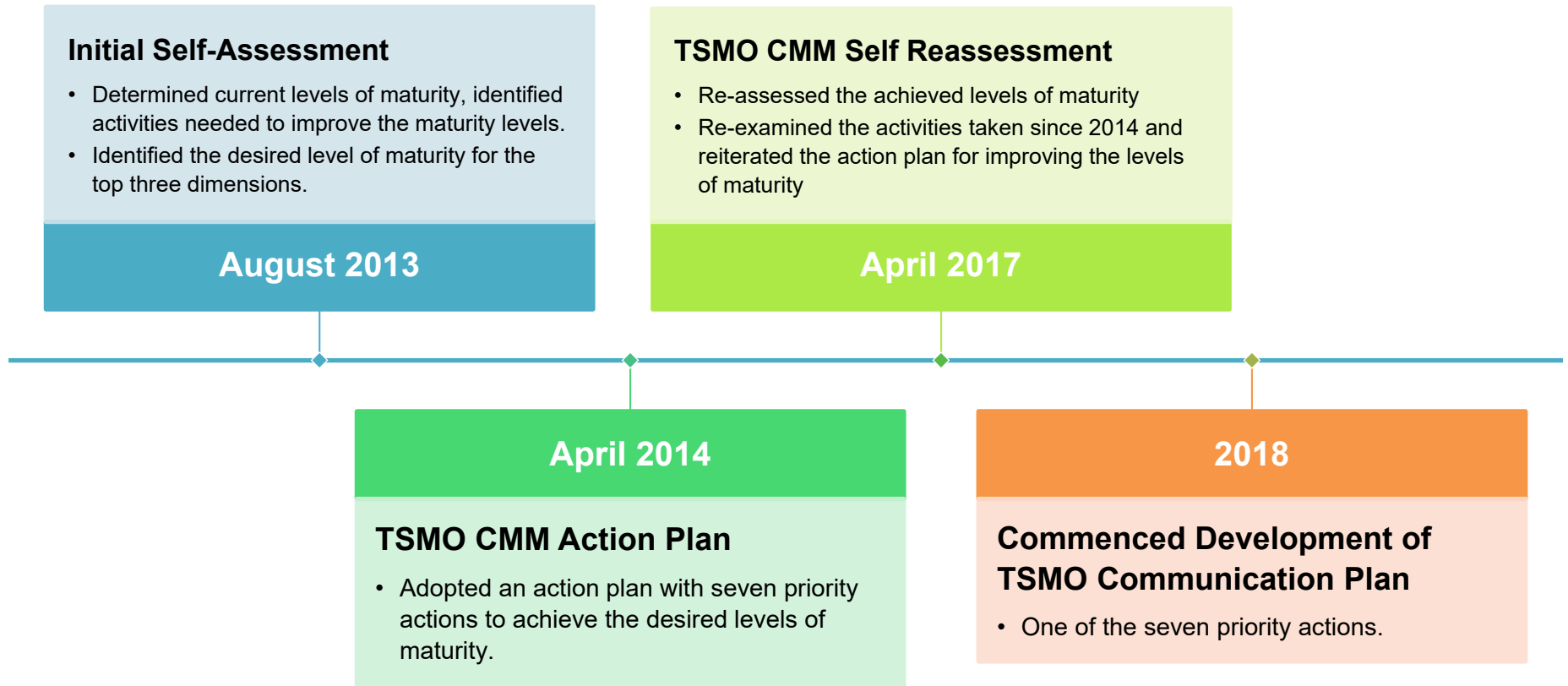
NJDOT TSMO Communications Plan

CMM – Levels of Capability Maturity

















New Jersey TSMO CMM Background





NJDOT TSMO Communications Plan

TSMO CMM Levels, 2013 – 2017

DIMENSIONS	LEVEL 1 PERFORMED	LEVEL 2 MANAGED	LEVEL 3 INTEGRATED	LEVEL 4 OPTIMIZED
Planning & Programming		 → 		
Systems & Technology		 		
Performance		 		
Culture		 ← 		
Organization/Staffing			 → 	
Collaboration			 	



NJDOT TSMO Communications Plan

CMM Level in TSMO Business Process

(Self-assessment, April 2017)

DIMENSION: Business Processes (Planning and Programming)				
Level Criteria	LEVEL 1 — PERFORMED	LEVEL 2 — MANAGED	LEVEL 3 — INTEGRATED	LEVEL 4 — OPTIMIZING
		Each jurisdiction doing its own thing according to individual priorities and capabilities	Consensus regional approach developed regarding TSMO goals, deficiencies, B/C, networks, strategies and common priorities	Regional program integrated into jurisdictions' overall multimodal transportation plans with related staged program
Consensus (2013)	1.5			
Consensus (2017)		2		
Actions to Advance to the Next Level				
<ul style="list-style-type: none"> Coordinate and develop a statewide TSMO plan incorporating regional/multimodal stakeholders' inputs suitable for inclusion into State-wide LRP and STIP. Including a process to maintain and update this plan. Develop business case document for TSMO actions/investments. Utilize existing performance data to project outcomes/benefits and document success stories for external presentation. Develop Communications Plan (and business case) for use as an education platform for regional/county/municipal policymakers/entities to obtain buy-in on including operations projects (from the TIP and STIP) and for use with state policy makers and the public. Continue pushing forward with ICM project, build off of momentum and capture learning regarding processes and collaborations for use in other projects. Get and take advantage of maximum support/incentives from FHWA. 				



NJDOT TSMO Communications Plan



ITS Resource Center | 

TECHNICAL MEMORANDUM

**Transportation Systems Management and Operations (TSM&O)
Capability Maturity Model (CMM) Implementation**

Development of TSM&O Communications Plan

Technical Memorandum No.1: Best Practices Review and
Recommendations
(DRAFT)

Prepared by:
New Jersey Institute of Technology
Fitzgerald & Halliday, Inc.

Prepared for



STATE OF NEW JERSEY
Department of Transportation

July 2018



NJDOT TSMO Communications Plan



- Define relevance and audiences
- Review best practices of TSM&O communications across the country
- Review TSM&O applications and communications in New Jersey
- Present communications strategies:
 - Purpose
 - Format and content
 - Implementation



NJDOT TSMO Communications Plan



- Review TSM&O communications experience.
- Identify best practices.
- Create realistic, near-term actions.
- Internal
- Partner agencies
- Interest groups
- Traveling and general public
- Elected officials



Nationwide Best Practices

Examples from:

- 13 state DOTs
- 3 municipal/county governments
- FHWA
- NoCoE – National Operations Center of Excellence

Covering:

TIM
511
Managed lanes
Active traffic management
Active TDM
ICM
Road and weather
Work zone safety
Adaptive signal control
Connected vehicle applications
Automated vehicle systems



NJDOT TSMO Communications Plan

Videos

STATE OF NEW JERSEY
DEPARTMENT OF TRANSPORTATION
 Phil Murphy, Governor | Sheila Oliver, Lieutenant Governor

Site Index | Search: NJ Home | NJDOT

PULASKI SKYWAY
 REHABILITATION

THE PULASKI SKYWAY
 A New Jersey Treasure

Videos

The New Jersey Department of Transportation (NJDOT) will occasionally create and distribute videos to help the public understand the project or specific aspects of the project as it advances. Videos will be available on the NJDOT project web site and will be posted to the [NJDOT YouTube channel](#).

Websites

MDOT
 Michigan Department of Transportation

MDOT / PROJECTS AND PROGRAMS / TSMO

Transportation Systems Management and Operations

Tired of Sitting in Traffic? Us too.

The Michigan Department of Transportation (MDOT) works to maintain our roads, but we also work to make the roads safer with less congestion. Through our Transportation Systems Management and Operations (TSMO) program, we are adding advanced technologies and partnerships to our traditional practices - from construction to clearing crashes to plowing snow - increasing mobility, reliability and safety along the way. Some TSMO benefits include:

- Efficient commutes** - Optimally timed traffic lights help vehicles move more smoothly through intersections. Harmonizing traffic lights can reduce travel times by 8 to 20 percent.
- Clear routes** - Michigan Traffic Incident Management Effort (Mi-TIME) provides important training on quickly and safely clearing traffic incidents. So far, Mi-TIME has trained more than 5,600 responders.
- Safer construction zones** - Technologies to safety manage construction zones help decrease the number of work zone crashes, injuries and deaths.

Explore to see more information: [MDOT's TSMO website provides 24/7 traffic and](#)

Newsletters

DISTRICT SIX HOSTS INCIDENT MANAGEMENT TRAINING COURSE

FDOT District Six hosted its annual Incident Management "Seminar" training for incident management and operations staff. The event, held on March 29 and 30, was held at the District's Road Ranger, Incident Response Vehicle (IRV) operations and Transportation Management Center (TMC) operations staff to review and discuss projects to date.

The goal of these sessions is to develop and refine best practices and implement innovative strategies for incident management. The program, originally the session topic to provide the same level of education for all members of the team. The goal also able to collaborate with the other team members to discuss lessons learned, suggestions, and new strategies.

INCIDENT MANAGEMENT AT A GLANCE
 January 1, 2016 - March 31, 2016

ROAD RANGER STATS

13,726	23,441	9:57
Total Responses	Total Alerts	Average Response Time

DYNAMIC MESSAGE SIGN POSTS

25,367	3,728
Static Messages	Other Agency Incidents

RISC STATS

8	14	63	143
Incidents	Alerts	Responses	Clearances

87,949 TOTAL MESSAGES POSTED

LANE BLOCKAGE EVENTS & AVERAGE RESPONSE TIMES**

I-95	I-95	SR-826
480 Events	259 Events	276 Events
9:49 Avg. Response	8:45 Avg. Response	10:39 Avg. Response
I-75	I-195	I-395
21 Events	38 Events	39 Events
8:07 Avg. Response	14:16 Avg. Response	11:21 Avg. Response

For more information on FDOT District Six Incident Management Program, please visit: [www.surfguide.info](#)

Posters

Overview | The Law | Public Awareness Materials | Videos

THE NEW JERSEY MOVE OVER LAW

Slow Down Move Over

MOVE OVER MOVE OVER

when you see stopped emergency or service vehicles

It's the Law!
[www.MoveOverLaw.com](#)

Protect Those Who Serve You!

Fact Sheets

Traffic Incident Management *Because Time Matters*

Traffic Incidents...

- Jeopardize the safety of motorists and responders
- Every minute a lane is blocked, creates 4 extra minutes of delay. Every minute you're stuck in traffic increases your risk of being rear-ended.
- ...is a leading cause of unexpected highway congestion
- ...is costly
 - Americans burn more than 2.8 billion gallons every year stuck in incident-related traffic.¹
 - Commutes lose nearly a full workweek (16 hours) sitting in traffic congestion each year.²
 - Costs associated with traffic incidents due to medical bills and lost wages have jumped 85% in only five years.³

Traffic Incident Management

Traffic incidents are the #1 cause of death of EMS responders.⁴

Traffic incidents create unsafe situations, put lives at risk, and cause delays.

Know your role:

1. Move your car to a safe place - out of the travel lanes - if you are involved in an incident, and there are no injuries.
2. When you see flashing lights ahead of you, you need to slow down and/or move over. You can be ticketed for failing to do this!
3. Help keep your loved ones safe and avoid a ticket. Tell your friends and family about these laws.

Sources:
¹ U.S. DOT, Highway Report 2010-10-2011, April 10, 2012.
² U.S. DOT, Highway Report 2010-10-2011, April 10, 2012.
³ Cambridge Consultants, Inc. 2011. Cost of Congestion: What the Costs Really Are. www.cambridgeconsultants.com
⁴ Highway Emergency Safety Council (HESC), Construction and Emergency Public Safety, October 2013, www.hesc.org



NJDOT TSMO Communications Plan

Plan Goals

- Awareness of TSM&O strategies and benefits
- Appeal to multiple audiences
- Clear and compelling communication
- Variety of media
- Consistency of messaging

Plan Strategies

- Internal TSM&O Newsletter
- External TSM&O Website (with NJDOT employee portal)
- Fact Sheets/Brochures
- Posters & Videos
- Social Media



NJDOT TSMO Communications Plan

Implementation



An overall champion is needed

Agency partnering is crucial

Work out information-sharing legalities

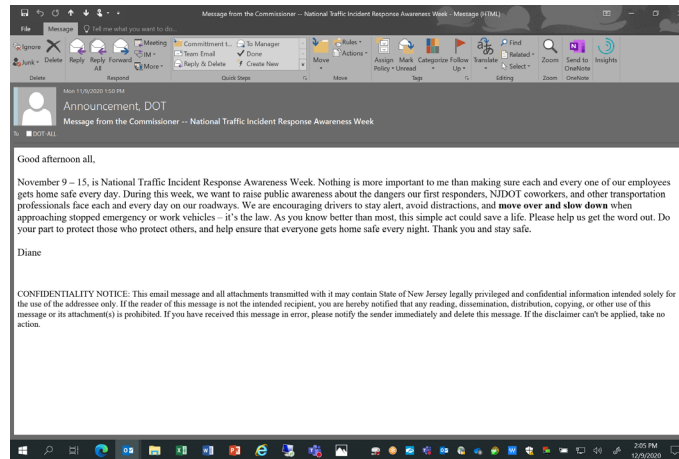
Agree on key issues:

- Tone
- Words vs. images
- Understanding audiences



NJDOT TSMO Communications Plan

Steps Towards Our Goal

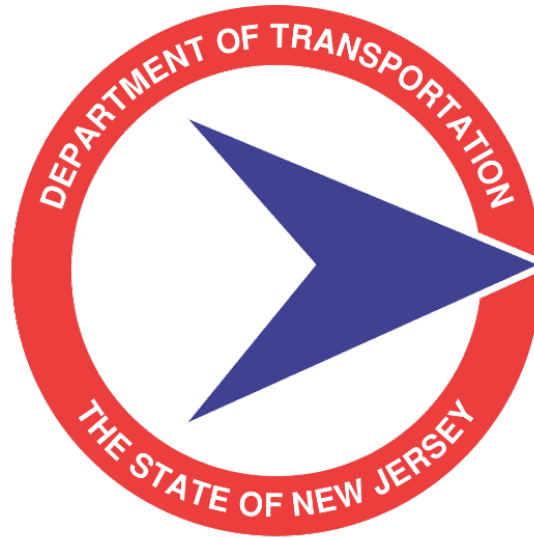




NJDOT TSMO Communications Plan



- Decision for stand-alone website
- Keeping up with retirements
- National Day of TSMO?
- Recurring CMM (not one and done)
- Brown Bag Talks at Agencies
- Preach the word!



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ANDREW M. CUOMO
Governor

NYSDOT's Strategy for Transportation System Management and Operations

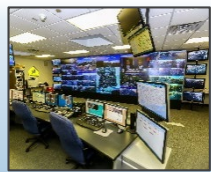
ITS-NY 2020 Annual Meeting

John Bassett

December 10, 2020

Moving from diverse activities...to a coordinated program

Transportation System Management Operations (TSMO) Activities Currently Underway



Transportation Management Centers (TMCs)



Regional Traffic Signals



Work Zone Management



Traveler Information



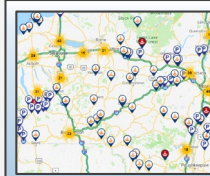
Traffic Incident Management



Winter Maintenance



Special Events Management



Demand Management

Cross-Cutting NYSDOT Programs



Emergency Transportation Operations



Safety Programs



Construction Management



GOAL: Coordinated, Focused, Optimized TSMO Program

Agency-wide Responsibilities

		Regions						Main Office				
		Traffic Safety and Mobility	Transportation Maintenance	Construction	Planning and Programming	Local and Modal Programs	Design	Traffic Safety and Mobility	Transportation Maintenance	Construction	Planning and Programming	Modal Programs
TSMO Activities	Transportation Management Centers	●	○					○	○			
	Arterial Management	●	○			○	○	○				
	Work Zone Mgmt. and Drivers First	○	●	●		○	○	○	○			
	Traffic Incident Management	●	●					○				
	Traveler Information	○	○	○		○		●		○	○	
	Emergency Transportation Ops	●	●					○	○			
	Maintenance Support for Operations	○	●					○	○			
	Special Events Management	●	●		○			○		○		
	Demand Management	○			●	○				●	○	
Cross-Cutting NYSDOT Programs	Highway and Bridge Maintenance	○	●					○	○			
	Traffic Safety Programs	●				●		○				
	Construction Management			●			○		○		○	

● Primary Responsibility ○ Supporting Responsibility



GOAL

- Create economies of scale
- Increase deployment of TSMO strategies
- Improve coordination across the agency
- *Improve ability to adapt to emerging priorities*

Current Challenges

Maintaining and Modernizing TSMO Equipment and Systems

Staffing and Workforce Constraints

Connecting and Integrating Systems and Technology

Limited Integration of TSMO with NYSDOT Business Processes

Capability to Leverage Data for TSMO is Still Emerging

Varying Capacity to Monitor and Report System Condition and Status

Managing Public Expectations and Communications about Travel Conditions

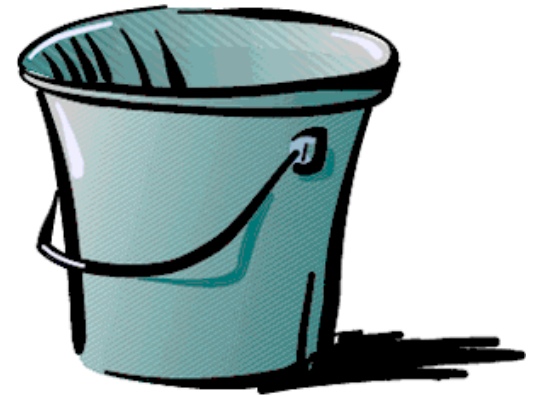
Motivation for Strategic Plan

Create Enterprise-level
Solutions for Common
Requirements

Increase Deployment
of Proven TSMO
Strategies

Improve Ability to
Respond to Unplanned
Events and Emerging
Priorities

Improve Ability to
Share Information as
NYSDOT's Responses
to Events Increase in
Scale and Complexity



TSMO Strategic Plan

- ➔ Available for review
- ➔ Agency TSMO Steering Committee established

CONTENTS

- Need for TSMO Strategy
- The Strategic Plan for TSMO
 - Vision
 - Goals and Priorities
- Delivering the TSMO Program
- Near-Term Implementation Priorities

Transportation Systems Management and Operations Strategic Plan

March 2020
FINAL









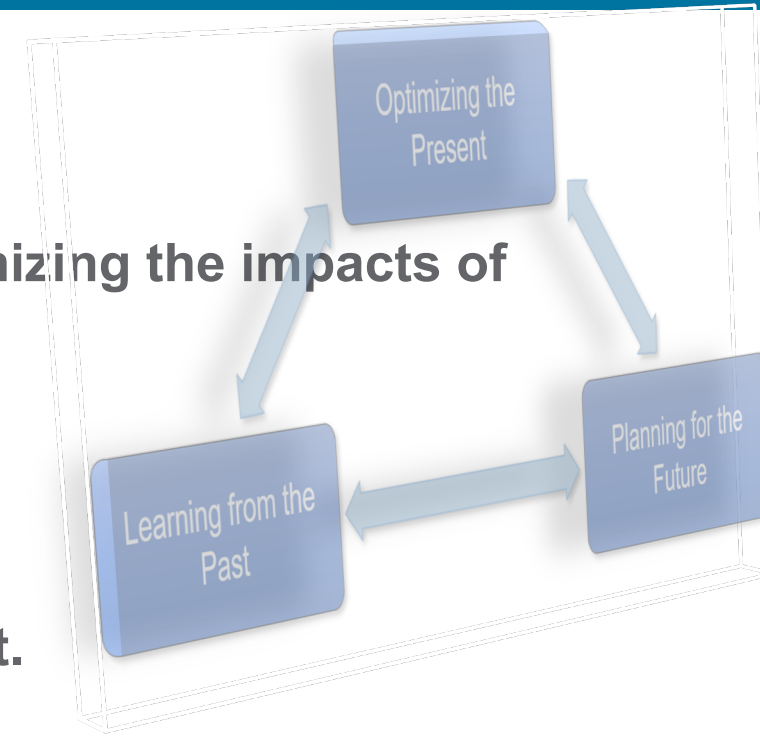
Vision for TSMO

“Enhance travel safety, reliability, and efficiency throughout New York State.”

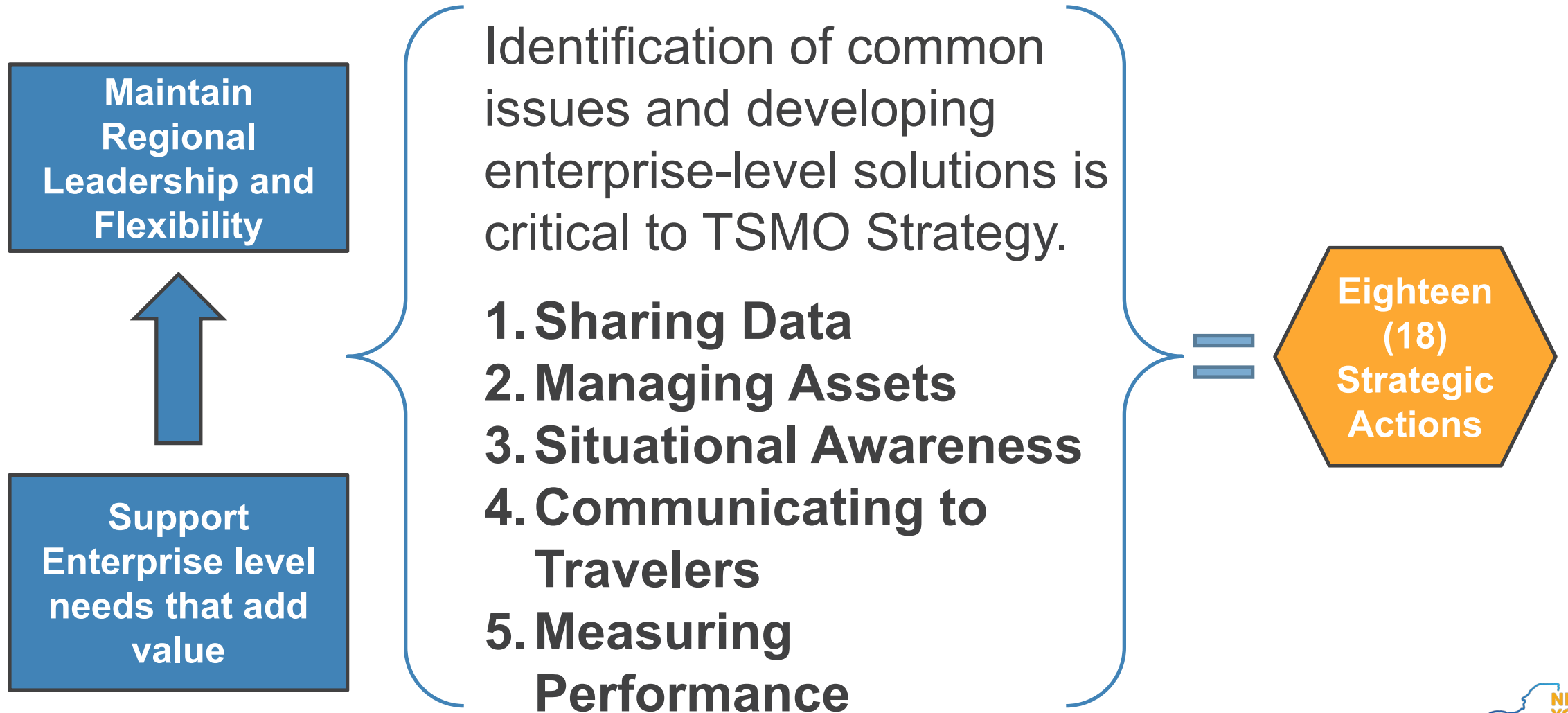
...Solving The Mobility, Reliability & Safety Challenge

TSMO Program Goals

-  **Goal 1: Enhance system safety and reliability by minimizing the impacts of travel disruptions.**
-  **Goal 2: Move people efficiently.**
-  **Goal 3: Support reliable and efficient freight movement.**
-  **Goal 4: Serve as a trusted source of multimodal travel information.**
-  **Goal 5: Strengthen partnerships with internal and external stakeholders.**
-  **Goal 6: Support enterprise-level systems and data for a performance-driven approach to TSMO.**



Key for success



Strategic Plan Actions

...In Progress

Establish a NYSDOT TSMO steering committee for project funding and decision-making

Support and implement a program to reduce bridge hits in New York State

Develop next-generation of traveler information systems

Start TSMO inventory and develop transition plan to enterprise asset management systems

Expand work zone management programs and practices

Strengthen and advance capabilities of Regional Traffic Incident Management (TIM) efforts

Strategic Plan Actions ...Under Development

Expand and enhance
situational awareness
tools

Implement ICM in
Selected Corridors

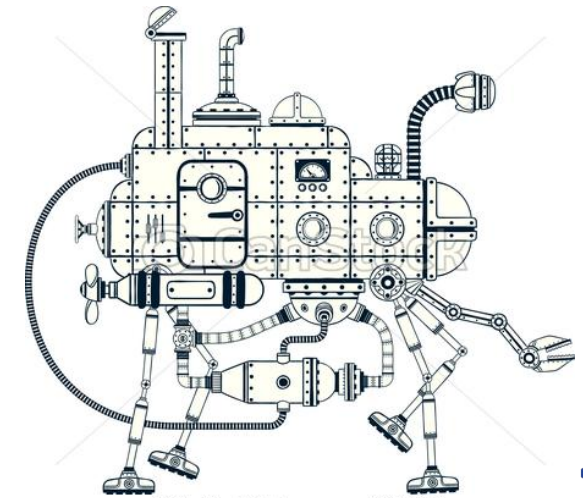
Enable Snow and Ice
Operations and Weather
Responsive Traffic
Management (WRTM) in
the Agency

Create opportunities to
link NYSDOT's TSMO
related programs and
data with transit
providers in New York
State

Support statewide traffic
signal improvement and
optimization program

Define performance
measures and
dashboards for TSMO

Develop and deploy an
integrated data
environment for TSMO,
a "TSMO Engine"



© CanStockPhoto.com - csp58214853

Strategic Plan Actions ...in the Future

Integrate TSMO into
NYSDOT's planning and
project development

Improve NYSDOT and
Partner Agency's
Emergency
Transportation
Management
Capabilities

Conduct a cybersecurity
vulnerability assessment
for TSMO

Expand Public
Information Officer (PIO)
engagement and role in
TSMO

Support Connected and
Automated Vehicles
(CAV) Readiness
Assessment

Questions?

John Bassett – NYSDOT

John.Bassett@dot.ny.gov

518-457-2384

ADVANCING TSMO: Making the Business Case

presented by

Federal Highway Administration, Office of Operations / Resource Center – Operations Team



U.S. Department of Transportation
Federal Highway Administration

December 10, 2020



Why ~~What is~~ TSMO?

“Transportation Systems Management and Operations (TSMO) is a set of strategies that focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed.”

From the FHWA “What is TSMO?” Web site, available at:
<https://ops.fhwa.dot.gov/tsmo/index.htm>



U.S. Department of Transportation
Federal Highway Administration

The Importance of Advancing TSMO

- ▶ Most agencies already employ TSMO strategies, but these strategies may be **ad-hoc** and vulnerable to stagnation and disruption.
- ▶ Benefits of advancing TSMO from ad-hoc to institutionalized:

  Decreased travel time and delay

  Improved collaboration

  Improved reliability

  Better agency efficiencies

  Reduction in crashes

  Lower implementation costs

  Lower vehicle operating costs

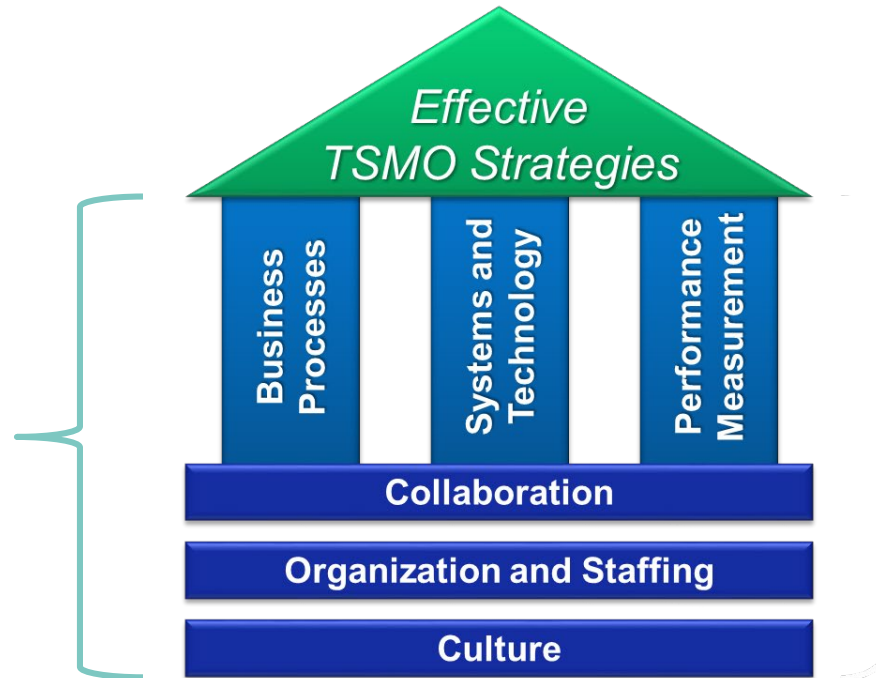
  Faster implementation timelines



Why are Institutional, Organizational, & Procedural Changes Important to Advancing TSMO?

- ▶ Advancing TSMO effectiveness is tied to IOP arrangements that support TSMO, rather than budgets or technology alone.

The six CMM dimensions (largely IOP arrangements) for effective TSMO



Why Make the Business Case for IOP Changes?

► Change is hard!

- » Institutional, Organizational, & Procedural (IOP) changes are often less tangible and/or effect a large number of staff.

► Resources are limited.

- » Why should TSMO be prioritized?

► Change management.

- » What is the end goal for these IOP changes?
- » What should staff expect?



Why Make the Business Case for IOP Changes? (continued)

The business case is a well-formed argument that is based on compelling qualitative and anecdotal information as well as technical analyses that rationalize and justify the need for the IOP changes to advance TSMO.



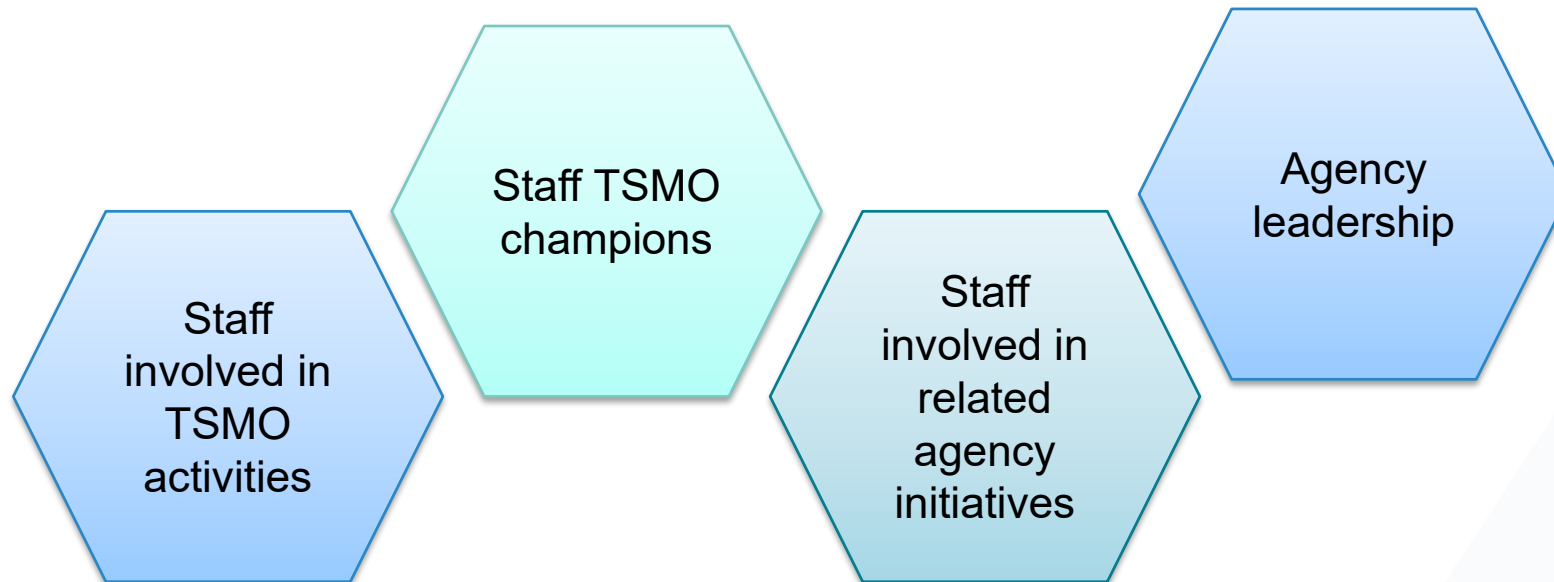
Characteristics of an Effective Business Case

- A. Tailoring the business case to local priorities.
- B. Illustrating how TSMO can augment the effectiveness of all agency programs.
- C. Specifying the strategic changes needed.
- D. Identifying external and internal benefits.
- E. Describing the required levels of effort and resources.
- F. Identify relationships between costs, benefits, and risks.
- G. Targeting the business case to specific audiences.



Who Should Make the Business Case?

- ▶ Staff with a good understanding of the agency's TSMO capabilities, activities, plans, and challenges.
- ▶ These individuals may be:



Tailoring the Business Case

- ▶ Important to gain the support of a variety of stakeholders.
- ▶ Should tailor the business case to a variety of internal and external audiences, for example:
 - » Agency leaders.
 - » Technical management and staff.
 - » Transportation partners.
 - » Legislators.
 - » The general public.



What is TSMO?

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U.S. Department of Transportation
Federal Highway Administration

TSMO Program Planning Resources

- ▶ “Developing and Sustaining a Transportation Systems Management & Operations Mission for Your Organization – a Primer for Program Planning” – FHWA Office of Operations
- ▶ “Advancing TSMO: Making the Business Case for Institutional, Organizational, and Procedural Change” – FHWA, Office of Operations
- ▶ TSMO Program Planning Workshops, Peer Exchanges, and Technical Assistance
- ▶ FHWA “What is TSMO?” Web site - <https://ops.fhwa.dot.gov/tsmo/index.htm>
- ▶ FHWA Support Team:
 - » Tracy Scriba, tracy.scriba@dot.gov
 - » Joe Gregory, joseph.Gregory@dot.gov
 - » Jim Hunt, jim.hunt@dot.gov
 - » Ralph Volpe, ralph.volpe@dot.gov



Transportation Systems Management and Operations

Ontario Ministry of Transportation (MTO)

December 10, 2020

Objective:

MTOs Journey towards TSMO

1. Ontario Ministry of Transportation (MTO) at a glance
2. An interpretation of TSMO
3. MTO Transformation
4. Examples of TSMO/ITS
 1. Emerging Transportation Management Concept
 2. Predictive Transportation Management
 3. An Innovation Corridor
 4. Incident Management

Ministry of Transportation at a Glance

Major Transportation Assets:

- Over 16,900 centreline-km or 40,000 lane-km of highways
 - Operate 3 tolled King's Highways (407 East, 412 and 418)
 - Approximately 108 lane-km managed lanes (High Occupancy Vehicle/Toll lanes)
- Approximately 3,000 bridges
- Over 2000 structural culverts
- Support for 11 ferry services and 4 ferry terminal buildings
- 29 remote northern airports including 30 km of paved/unpaved runways
- 15 tunnels
- 81 carpool lots

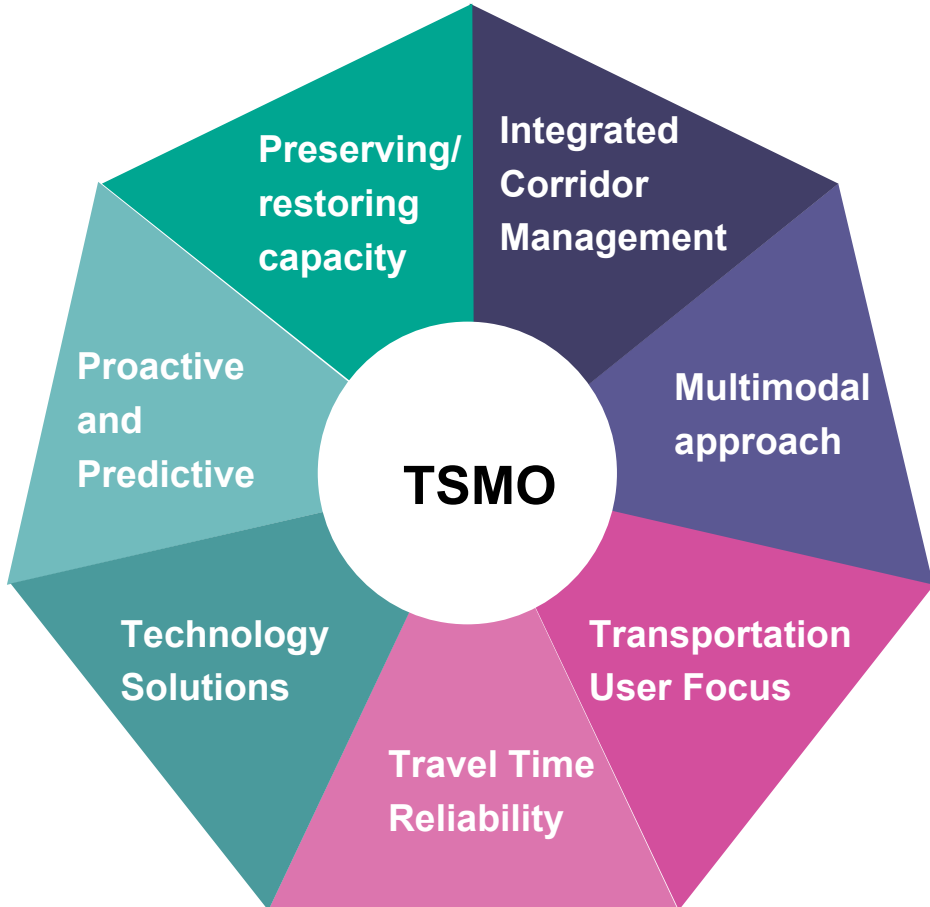


Intelligent Transportation System Assets

- 450 CCTV cameras for incident detection and traffic management
- 1157 Vehicle Detection Stations and 128 Non Intrusive Detectors
- 140 Over-Head VMS, 75 Pole-mounted VMS, 190 PVMS
- 11 Ramp Metering Stations
- 800 Km Fibre Optic Network
- 4 permanent Queue end warning systems
- 175 Bluetooth readers for travel time messaging
- 511 Traveller Information System
- 152 + 26 RWIS stations
- 5 Traffic Management Centres



Transportation Systems Management and Operations



TSMO is a set of strategies that focus on operational improvements that can maintain and even restore the performance of the existing transportation system before extra capacity is needed.



Traditional Method	TSMO
Adding Capacity	Preserving and Restoring Existing Capacity
Static and Reactive	Responsive, Proactive, and Predictive
Average Travel Time, Level of Service	Travel Time Reliability , Mobility
Focus on Individual Facilities and Jurisdictions	Multimodal, multijurisdictional approach
Moving the Car/Truck from Point A to Point B	Transportation User Focus
Individual Strategies	Integrated Approach, Integrated Corridor Management



Work Zone Management	Incident Management	Road/Weather Management
Transit Management	Signal Coordination	Traveller Information
Active Transportation	Integrated Corridor Management	Demand Management
Access Management	Ramp Metering	Pedestrian and Cyclist crossings

MTO Transformation - the beginning (MTO ONE)

One Transportation System



We manage transportation as an interconnected system so users can enjoy a seamless and accessible transportation experience.

User-Focused



We are guided by diverse user perspectives and needs so the transportation system works for everyone..

Success Through Partnership



We deliver on our mandate collaboratively with and through others to achieve our shared goals.

Future Ready



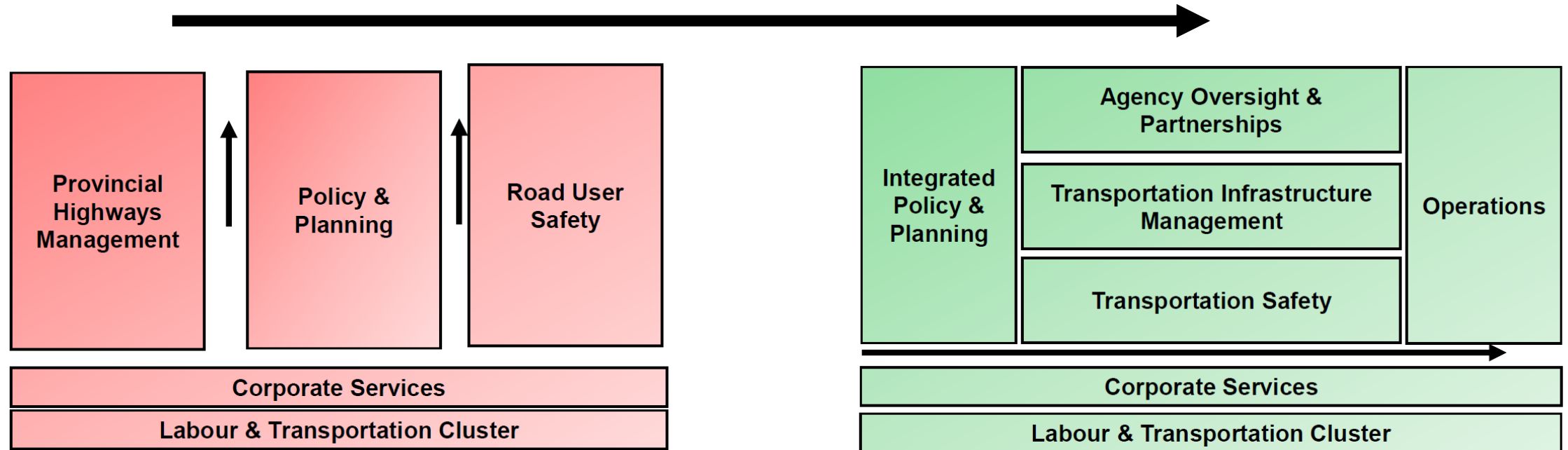
We are forward looking to meet the mobility needs of tomorrow so that Ontario is ready to deal with the changing transportation landscape.

One Strong Ministry



We work as one cohesive, high-performing team in an organization where staff are supported, processes are lean, and work is collaborative.

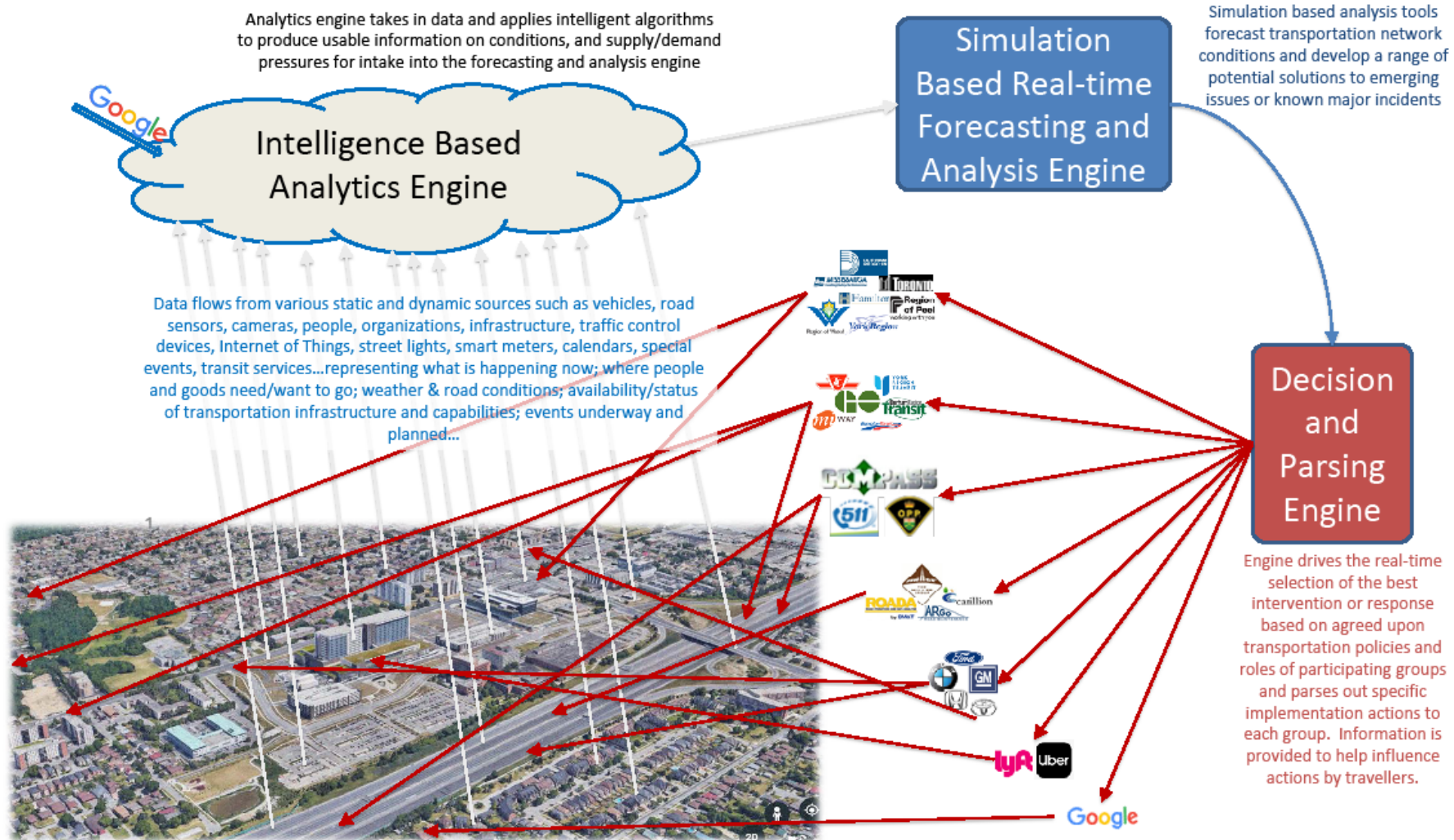
MTO Transformation – A New Organizational Structure



- Divisions not well integrated
- Siloes slow down planning and delivery of an integrated transportation system
- Decision-making processes are siloed and at times slow
- Organization not as flexible and agile as new transportation system reality requires
- Deploying resources to new priorities often means creating ad hoc units and minor reorganizations

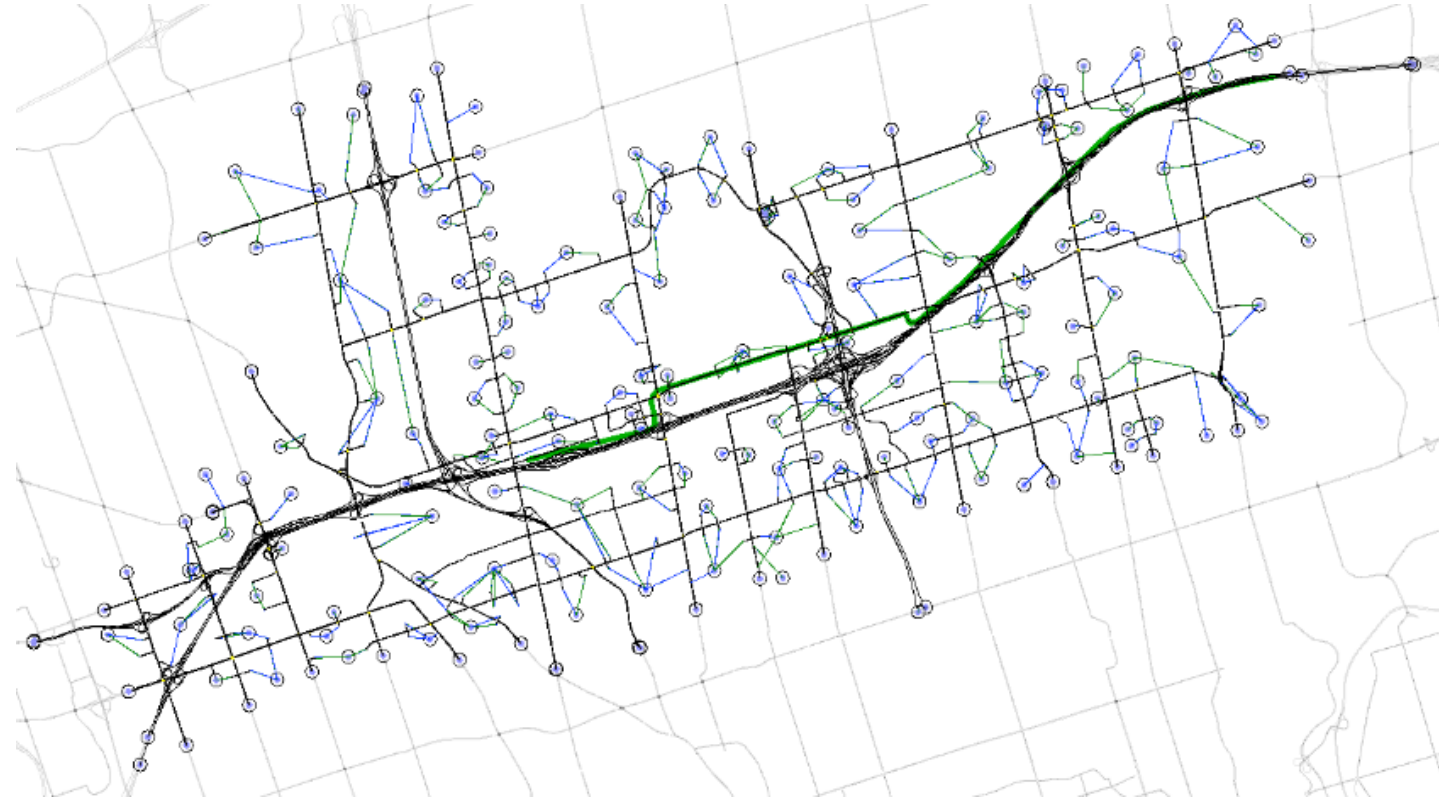
- Separate Policy, planning, engineering and construction from Operations of the network
- Strengthen Policy and Planning Capacity
- Reduce Siloes and Improve Collaboration
- Increase agency oversight and new Transit Priority Projects
- Integrate Infrastructure Financial Management across the Ministry
- Develop and Nurture Stakeholder Relationships

Emerging Transportation Management Concept



Predictive Transportation Management

- Partnership among MTO Traffic Modelling & Analysis, MTO ITS, CIMA+, Aimsun
- Phase 1 → Proof of Concept:
 - Demonstrate concepts and benefits
 - Support partner development
 - Allow opportunity to learn
 - Facilitate preparation of tools
- Simulation based Forecasting Tool – Aimsun Live
- Uses historical offline data sources
- Sub Section of Freeways and Arterials in Toronto approx. 100 Sq km
- 15, 30, 45, 60 min forecasts
- Testing event avoidance and response optimization



Innovation Corridor – ITS, Smart Mobility, CAV Testbed



- ✓ Ongoing HOT Pilot (including Bluetooth Detection Testing)
- ✓ Ramp metering
- ✓ Bluetooth network
- ✓ Constrained right-of-way
- ✓ Multiple large municipalities
- ✓ Parallel regional transit and rail (commuter) corridor
- ✓ Full fibre optic communication network
- ✓ Fully electrified
- ✓ Extensive planned capital works

Incident Management



- Issues raised in Ontario wrt the Towing Industry
 - Crime and Fraud
 - Consumer Protection
 - Road User and Operator Safety
 - Impact of Delays in Clearing Major Freeway Incidents
- Consideration being given to Provincial Licensing and Regulation of the industry
- MTO Considering Exclusive Tow Zones contracts
 - One Heavy Tow and Recovery Operator with exclusive rights within a section of Highway
 - Integration with emergency responders and part of incident command structure
 - Published rates for services



Thank You!