



NYSDOT's Strategy for Transportation System Management and Operations

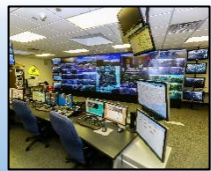
Focus on Reliability



**Department of
Transportation**

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



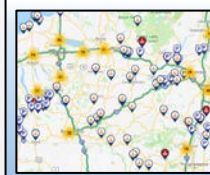
Traffic Incident
Management



Winter
Maintenance



Special
Events
Management



Demand
Management

Cross-Cutting NYSDOT Programs



Emergency
Transportation
Operations



Safety
Programs



Construction
Management



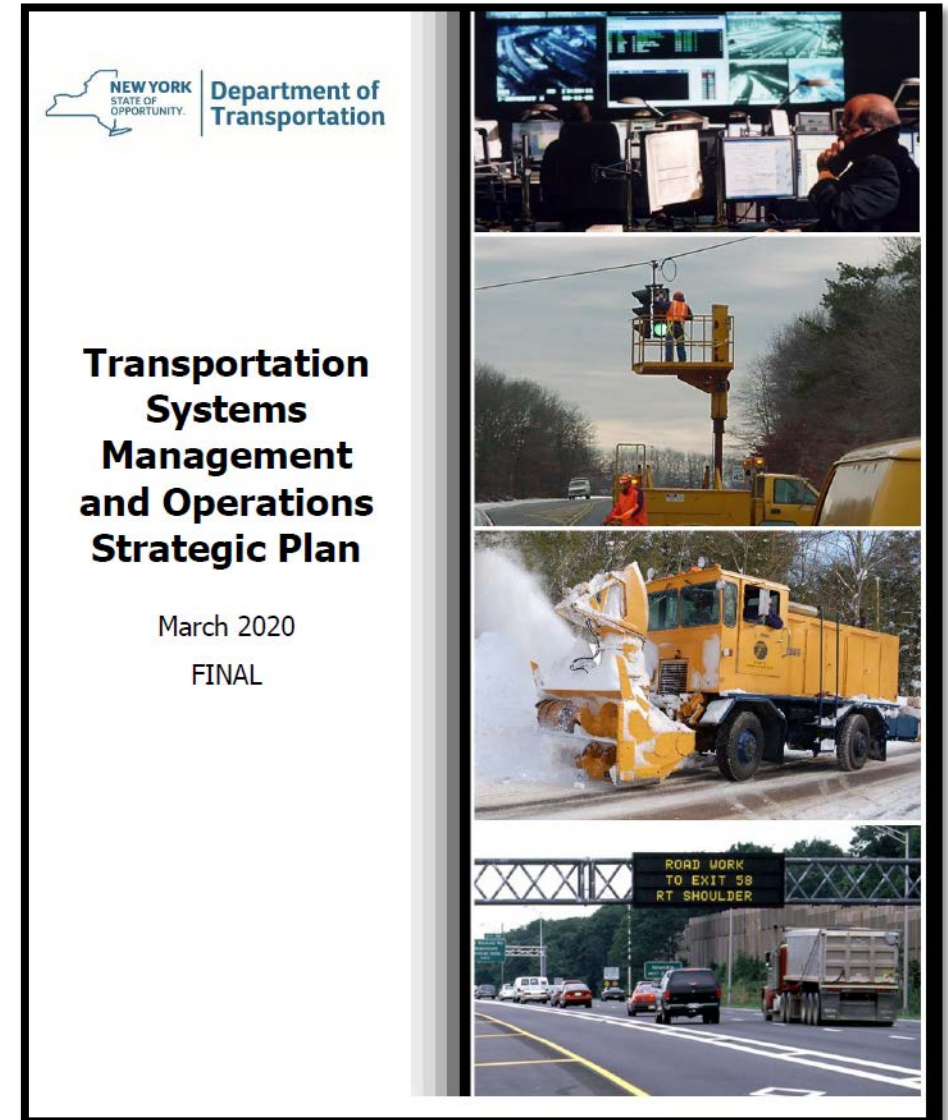
GOAL: Coordinated, Focused, Optimized TSMO Program

TSMO Strategic Plan

- 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





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.

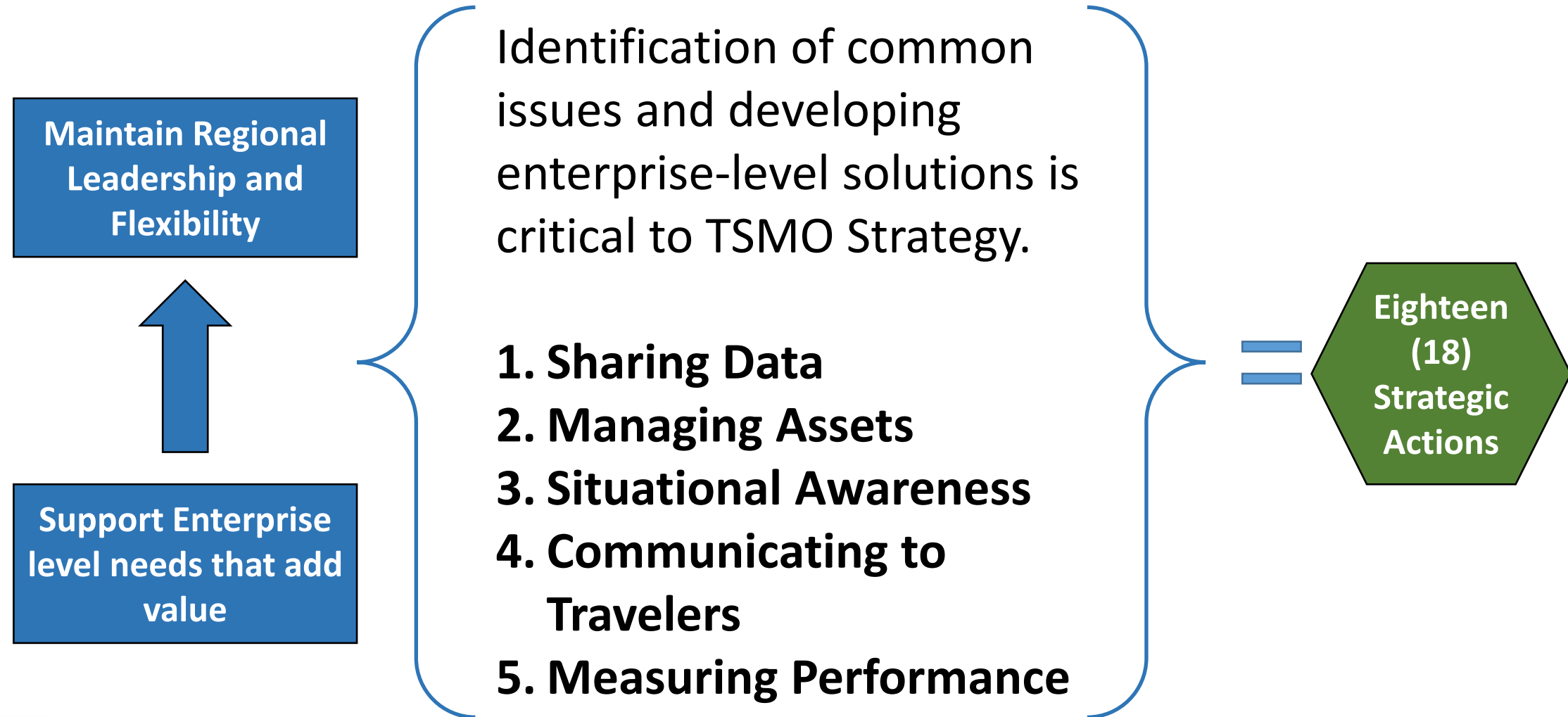


Goal 5: Strengthen partnerships with internal and external stakeholders.









Goal 6: Support enterprise-level systems and data for a performance-driven approach to TSMO.

Key for success



Strategic Plan Near Term Actions

Near-Term Priority Action	Goal 1 	Goal 2 	Goal 3 	Goal 4 	Goal 5 	Goal 6 
Expand and enhance situational awareness tools	✓					✓
Support statewide traffic signal improvement and optimization program		✓			✓	
Expand work zone management programs and practices	✓					
Strengthen and advance capabilities of regional Traffic Incident Management (TIM) efforts	✓				✓	
Support and implement a program to reduce bridge hits in New York State	✓		✓			
Improve NYSDOT and partner agency's emergency transportation management	✓				✓	✓
Develop next-generation of traveler information systems		✓	✓	✓		
Develop and deploy an integrated data environment for TSMO, a "TSMO Engine."	✓					✓
Start TSMO inventory and develop transition plan to enterprise asset management systems					✓	✓
Enable Snow and Ice Operations and Weather Responsive Traffic Management (WRTM) in the Agency	✓					✓
Define performance measures for TSMO and develop performance dashboards						✓
Implement Integrated Corridor Management (ICM) in selected corridors		✓		✓		
Establish a statewide TSMO Steering Committee for project funding and decision-making					✓	✓
Create opportunities to link NYSDOT's TSMO-related programs and data with transit providers in New York State		✓		✓	✓	
Conduct a cybersecurity vulnerability assessment for TSMO						✓
Integrate TSMO into NYSDOT's planning and project development					✓	✓
Expand Public Information Officer (PIO) engagement and role in TSMO	✓				✓	
Support Connected and Automated Vehicles (CAV) Readiness Assessment	✓	✓	✓			

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

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

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

Define performance measures and dashboards for TSMO

Support statewide traffic signal improvement and optimization program

Measuring TSMO Performance



Dashboards

- Analyze and visualize information in an actionable and time-efficient way.
- Consolidates tabulated data, charts, and graphs on a single screen
- Consistently updated



Reporting

- Standard reporting summarizing overall operational data over time
- Accomplishments and trends at Statewide, Regional and project levels

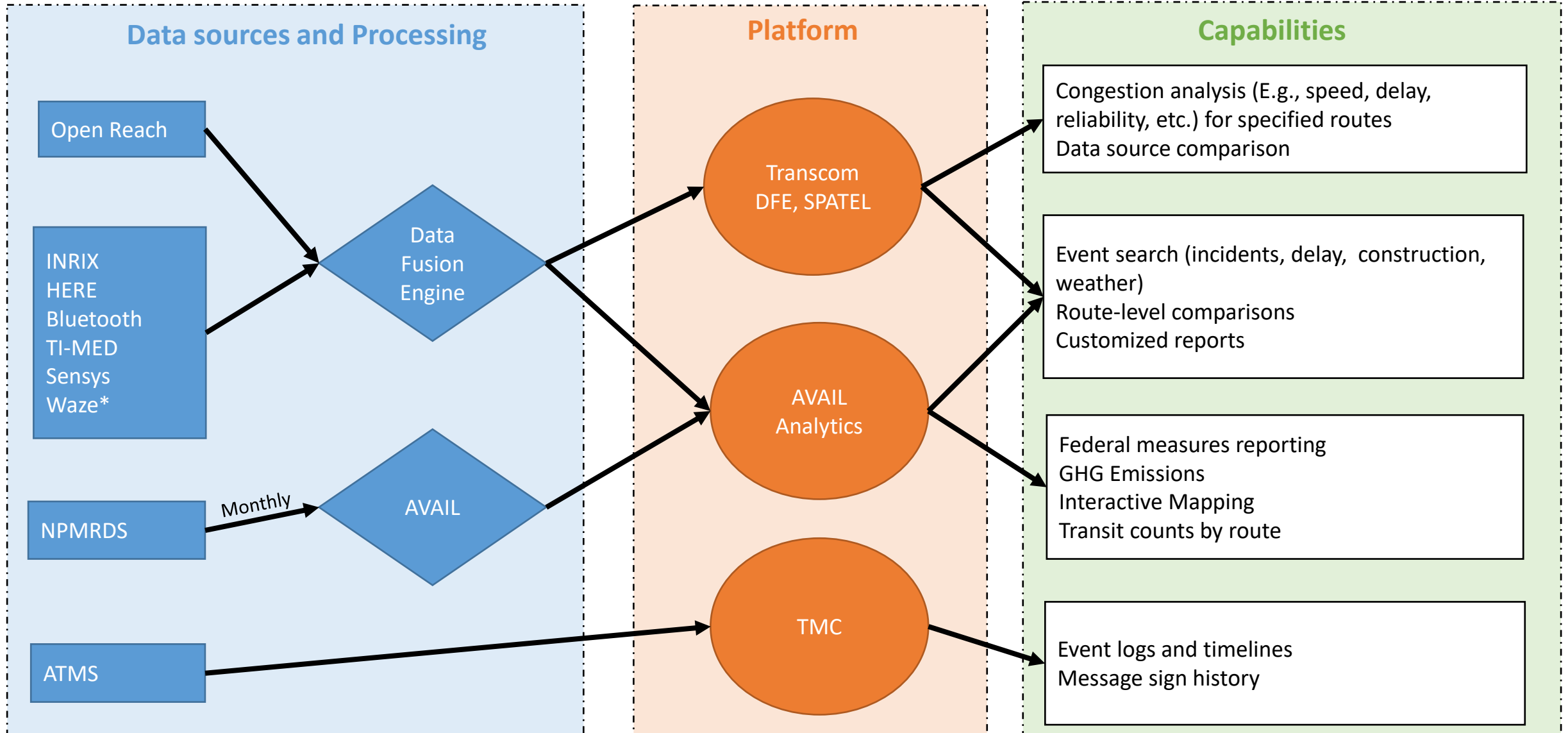


Analytics

- Allow for deep-dives, after action reviews, corridor analysis of performance
- Allow custom studies, evaluation of projects

Increasing maturity, consistency and quality of TSMO data being collected and reported across NYS

NYSDOT As-Is Architecture



TSMO Performance Measurement Data Needs



Develop consistent incident-related classification definitions of types, involved personnel and conditions.



Support consistent reporting of the event (incident/work zone) timeline.



Fuse diverse data sets that are presently fragmented.



Develop standard repeatable approaches to quantify benefits









Translate operational outputs to outcomes (like GHG emissions) are still evolving



Support consistent documentation of data regarding project timelines for before-after analysis.

Develop TSMO Performance Measurement Strategy

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

Reporting Objectives

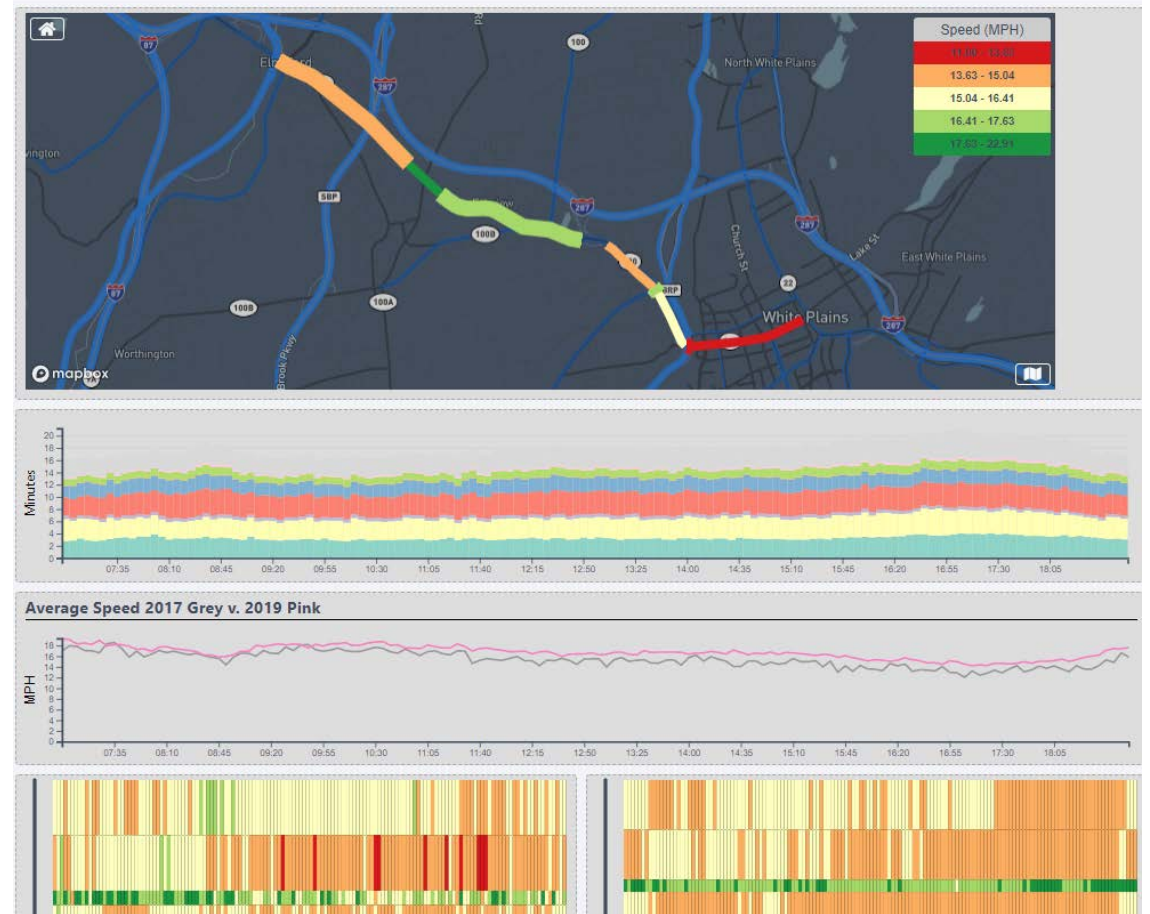
- **Develop templates TSMO Performance Reporting**
 - Identify spatial, temporal congestion bottlenecks
 - Identify impacts to freight
 - Including MAP-21 measures
 - Showcase key program outcomes

Support common analytic platforms - consistent measurement and evaluation

▪ Leverage and enhance tools:

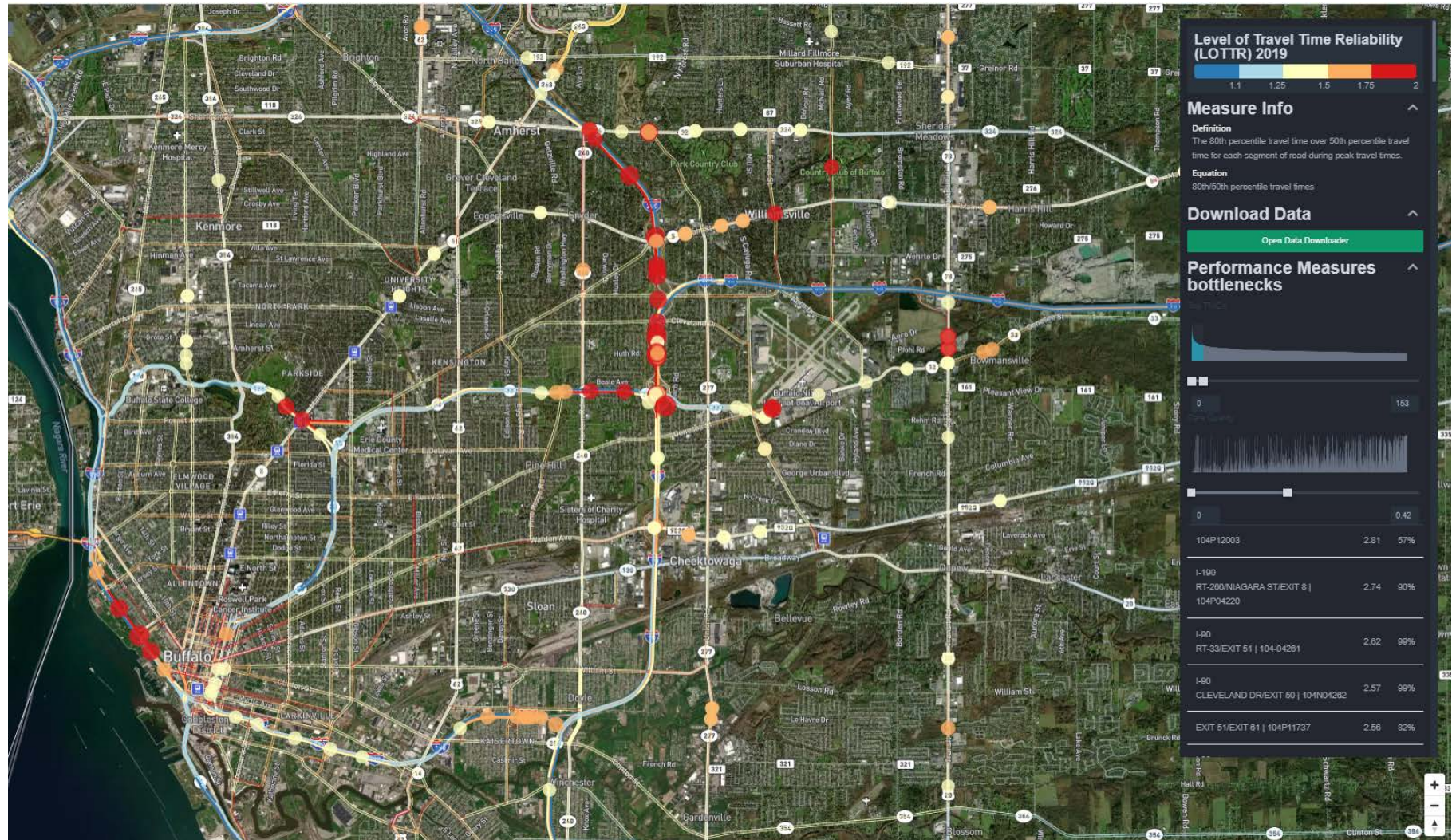
- After Action Review
- Before/After studies
- Project Assessment Reports
- Incident Impacts/Delays
- Traffic modeling

119 Westchester Signal Optimization Corridor



Improving Analytic Capabilities for Reliability

Regional Bottleneck Analysis Travel Time Reliability



Data Improvement Focus

- **Priority Action: Improve statewide data quality and reporting consistency.**
 - Consistent and improved traffic incident/event timeline across the agency
 - Improve incident related metrics - allow for better reporting of TSMO related performance in incident response
 - Standardized work zone data following evolving national specifications
 - Will make collection, distribution of work zone information easier
 - Leverage 3rd party probe and crowdsourced data to support TSMO strategies and results
 - NYSDOT has access to HERE and WAZE data already along with historical NPMRDS data. Incorporate this data routinely into projects and systems.

TSMO Performance Working Groups

- **Weather and Emergency**
- **Traffic Incident Management (TIM)**
- **Construction coordination and communication**
- **Congestion – complex multi-modal corridors (ICM)**
- **Communication of Outcomes - value of TSMO strategies**

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