Enterprise Transportation Systems Management and Operations (TSMO) Initiative

Request for Information #2019-01

May 29, 2019
Webinar Purpose

- Review NYSDOT’s objectives for the RFI
- Clarify Service Areas
- Fielding respondent questions
- Walk through RFI Process and Schedule
- RFI documents: https://www.dot.ny.gov/doing-business/opportunities/consult-opportunities
RFI Overview Timeline

• Initial Questions Due: May 1, 2019
• Answers to Initial Questions: May 21, 2019
• Informational Webinar #1: May 29, 2019
• Informational Webinar #2: To be scheduled if sufficient parties express interest
• RFI Response ‘Window’ Closes: June 30, 2019
• Follow-up Sessions: As needed with RFI Responders.
Notes

• This is not an RFP
• This is not a request for a single solution
• Information collected from the RFI may be used to inform NYSDOT’s pre-procurement planning
• The timeline for any RFP has not yet been determined – parties who expressed interest in this RFI will receive e-mail notifications as any RFP gets readied for release.
Motivations of the RFI

- Desire to have economies of scale in terms of TSMO system development across the agency
- Greater consistency in collecting, management and sharing of TSMO-related data for various operational, planning purposes
- Ability to rapidly adapt systems and technologies to take into account changing markets and customer expectations
NYSDOT Regional Map

NYSDOT Regions

5/29/2019
Evolving TSMO Program

Transportation System Management and Operations (TSMO) Activities Currently Underway

<table>
<thead>
<tr>
<th>Transportation Management Centers (TMCs)</th>
<th>Arterial Traffic Management</th>
<th>Work Zone Management &amp; Drivers First</th>
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</thead>
<tbody>
<tr>
<td>Traffic Incident Management</td>
<td>Traveler Information</td>
<td>Emergency Transportation Operations</td>
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<tr>
<td>Maintenance Support for Operations</td>
<td>Special Events Management</td>
<td>Demand Management</td>
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Cross-Cutting NYSDOT Programs

| Highway & Bridge Maintenance Program      |
| Traffic & Safety Programs                |
| Construction Management                  |

GOAL: Coordinated, Focused, Optimized TSMO Program
Key to TSMO in NYS

Maintain Regional Leadership and Flexibility

Support Enterprise level needs that add value

Identification of common pain points and developing enterprise-level solutions is critical to TSMO Strategy.

1. Sharing Data
2. Managing Assets
3. Situational Awareness
4. Communicating to Travelers
5. Measuring Performance
TSMO Program Outcomes

Optimizing the Present

Learning from the Past
- What can we stop doing?
- Where is the private sector stepping up?

Planning for the Future
- Getting NYSDOT ready for future technology developments
- Moving to modern data management practices
- Connected Vehicle/Automated Vehicle Considerations

Focus of the RFI
- Greater efficiencies in programming and project development
- Development of enterprise TSMO systems that support operations
RFI - TSMO Service Areas

Service Area #1
- Situational Awareness Tools and Event Recording Systems

Service Area #2
- Next Generation traveler information systems/511 System

Service Area #3
- An integrated TSMO data brokerage platform ("TSMO Engine")

Combined Service Area
- System Integrator Approach

5/29/2019
Service Area #1 Situational Awareness

- Continually monitor ongoing operations and road conditions
  - Incidents
  - Weather / Special Events
  - Construction and maintenance / Road closures
- Describe and schedule planned events
- Describe impacts and update ongoing events
- Integrate data feeds from upstream systems including TSMO Engine
- Alert stakeholders and generate data feeds for downstream systems including 511NY and internal NYSDOT users
Service Area #1 Situational Awareness

• Many different tools used currently to monitor and report conditions across the State
  – Openreach, RSDA, IIMS, Regional ATMS,…

Recommendations on developing and supporting evolution of these tools to operate effectively across the State (via limited context).

Recommendations to include emerging innovations occurring in TSMO, open source software, crowd-sourcing, data brokering and connected/automated vehicle technology?
Service Area #2 -- 511NY

- Provides transportation information via phone, website, app, text alerts, and data feeds available for external consumers
- One-stop service for travel information about NY state on website map

Recommendations for developing and maintaining a modern public-sector travel information system that adds value in the current and emerging travel information marketplace.

Business models or partnerships to deploy, market, operate and maintain current and future travel information services?
Service Area #3 – TSMO Data Broker Platform

- Exchange platform for NYSDOT data to/from all Regional systems, data to/from external sources (API Manager)

- Intended to organize NYSDOT data across multiple operational systems

**TSMO Engine Processes**

1. Collect and manage raw data
   - 1.1 Dynamic system and vehicle feeds (real time)
   - 1.2 Static Data (planned / inventory)
   - 1.3 Field Reporting (periodic / near real time)
   - 1.4 Manual Entry (as needed)

2. Access and transform to standard format
   - 2.1 Extract and transform

3. Access and Provide Services [*]
   - 3.1 Services
     - Multimodal trip planning
     - Performance analytics incl AI, forecasting, etc.
     - Dashboard
   - 3.2 TSMO Systems (TBD)

4. Distribute data to subscribers and users
   - 4.1 Public Facing NYS11 Website, IVR, Portal, Special Portals TDM Services
   - 4.2 Internal NYSDOT ICM
   - 4.3 Internal NY Stakeholder Other ATMS

[*] External / downstream applications that consume TSMO Engine APIs
Service Area #3 – TSMO Data Broker Platform
Recommendations on tools or approaches to develop the TSMO Engine/Data Broker Platform

Industry current & emerging state-of-practice in developing data brokerage systems for TSMO
Service Area #4 - System Integrator Approach

1. What are the advantages/disadvantages of combining multiple efforts? Identify the specific Service Areas that benefit from a combined procurement.
2. Is there a different approach, business model, platform/infrastructure, allocation of functionality or other strategy that would be more optimal with the integrated enterprise TSMO Services?
3. What would be the recommended roadmap and timeline for the combined effort?
RFI Emphasis

- Understanding developments and emerging practices in TSMO Information Management
- Preference for Open-Source Solutions
- Ability to interface with legacy systems and data sources
- Ability to implement effective, agile and adoptable methods over time
Next Steps from RFI

• Additional Webinars
• Receive and consider RFI responses
• Individual follow-ups with selected responding parties
  – On-site demonstration
  – Technical discussions
  – Clarifications of response
• Canvass non-responding parties who expressed interest in participating in RFI process