



# Mainstreaming TSMO through Policies and Processes

## FHWA/ NOCoE Webinar

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**Subrat Mahapatra**

Director, Asset Management  
(former Deputy Director, TSMO)

**Mohammed Raqib**

Chief, Mobility Planning & Engineering  
Office of Transportation Mobility & Operations


# Mainstreaming TSMO in Maryland



- **TSMO Executive Directive**
- **Organizational Structure**
  - TSMO Executive Committee
  - Dedicated TSMO Management Team
  - TSMO Task Forces
  - Organizational Changes
- **Formalizing TSMO Plan and Programming**
  - TSMO Master Plan
  - TSMO Project Funding
- **Communication and Outreach**
  - Website, Newsletters, Videos, Workshops
  - Regional Ops Forums

# TSMO Directive

- Directive from The Administrator's Office went out on July 1, 2020.
- Promotes the integration and implementation of a sustainable, organization wide TSMO Program
- Focus to incorporate TSMO as a routine and integral element of all planning, engineering, construction, operations, and maintenance decisions and activities
- Developed in coordination with cross-disciplinary Business Process & Policy task force



Larry Hogan  
Governor  
Boyd K. Rutherford  
Lt. Governor  
Gregory Slater  
Secretary  
Tim Smith, P.E.  
Administrator

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**EXECUTIVE MEMORANDUM**

**TO:** ALL MDOT SHA  
**FROM:** ADMINISTRATOR TIM SMITH *Tim Smith*  
**SUBJECT:** TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS (TSMO) DIRECTIVE  
**DATE:** JUNE 17, 2020

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**PURPOSE:**

The purpose of this Directive is to mainstream the Transportation Systems Management and Operations (TSMO) Program across MDOT SHA to achieve following objectives:

1. Establish an integrated approach to programmatic optimization of planning, engineering, construction, operations, and maintenance in implementing new and existing multi-modal systems, services, and projects to preserve capacity and improve the security, safety, and reliability of our transportation system.
2. Effectively manage and operate existing facilities and systems to maximize their potential and provide safe, efficient, and innovative solutions.
3. Provide solutions and strategies that address capacity limitations due to recurring and non-recurring congestion (crashes, incidents, severe weather, work zones, special events, and other factors) through business processes, ITS technologies, and collaboration.
4. Promote the integration and implementation of a sustainable, organization-wide TSMO Program guided by the most recently approved TSMO Strategic Plan and Implementation Plan.
5. Provide a methodology by which these principles can be incorporated into all planning, engineering, construction, operations, and maintenance activities.

**BACKGROUND:**

TSMO has emerged as a formal discipline for transportation agencies throughout the country, with the intent of effectively managing and operating existing and new facilities and systems to maximize their service potential. TSMO is not a new concept for Maryland - MDOT SHA has a strong management and operations foundation through the Coordinated Highways Action Response Team (CHART) Program and other multimodal programs. Related efforts such as mobility and reliability programs, transportation performance management, and recent customer-focused organizational modernization initiatives also make up the foundation for the TSMO Program. MDOT SHA adopted its first TSMO Strategic Implementation Plan in August 2016, and a completely revamped Strategic Plan in October 2018.

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# TSMO Directive contd..

*Provide **TSMO Implementation Guidance** and performance-based strategies for planning, engineering, construction, operations, and maintenance.*

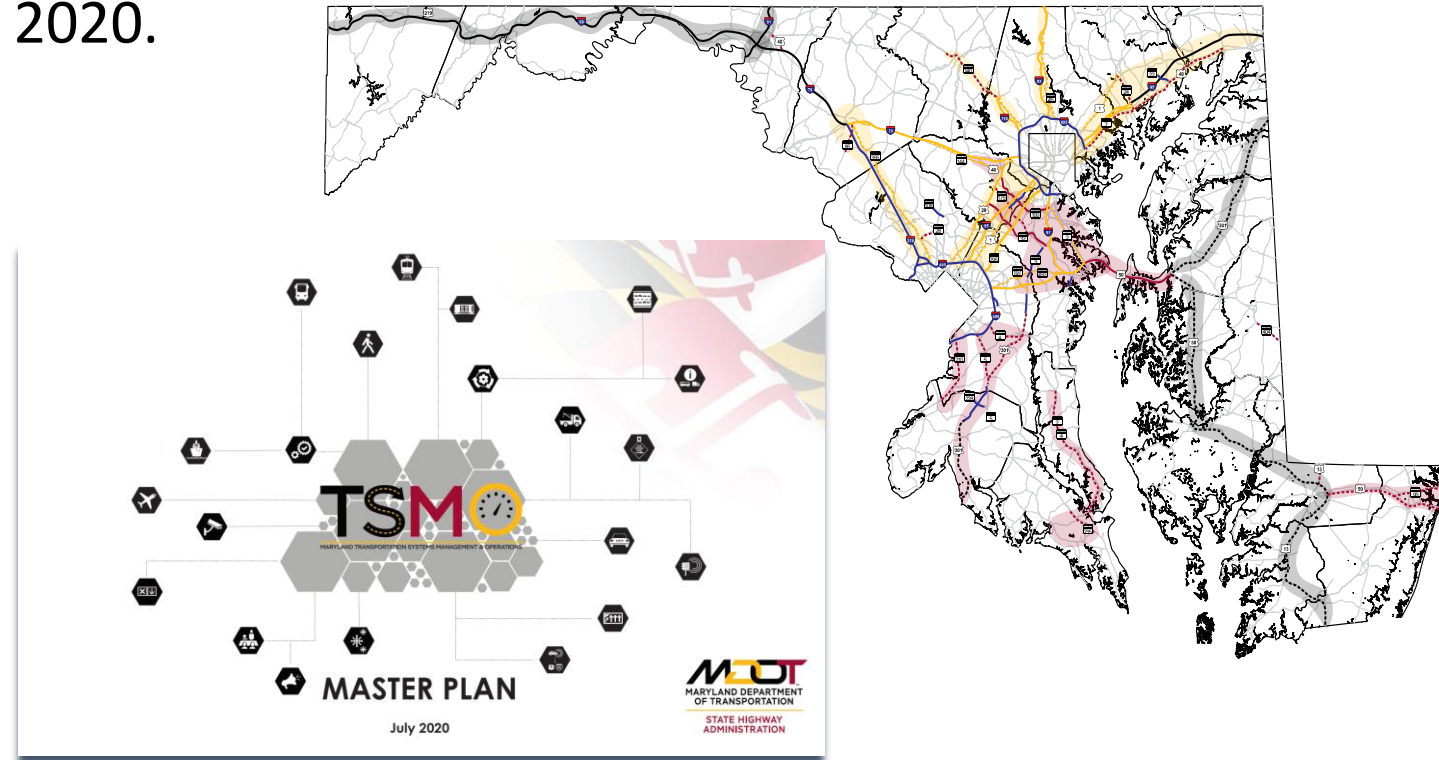
*Include **TSMO as a routine and integral element** of all planning, engineering, construction, operations, and maintenance decisions and activities in accordance with the TSMO Implementation Guidance.*

*All MDOT SHA employees, contract employees, contractors, and consultants are required to evaluate the feasibility of TSMO strategies and solutions for all applicable transportation projects in accordance with the TSMO Implementation Guidance.*

# Formalizing TSMO Plan and Programming - TSMO Master Plan

- TSMO Master Plan released early July 2020.
  - TSMO Systems and Sub-Systems
  - Tiered Set of Recommendations
  - Design, Construction and O&M Costs
  - Accompanying GIS Portal

## NEXT GEAR System of Systems



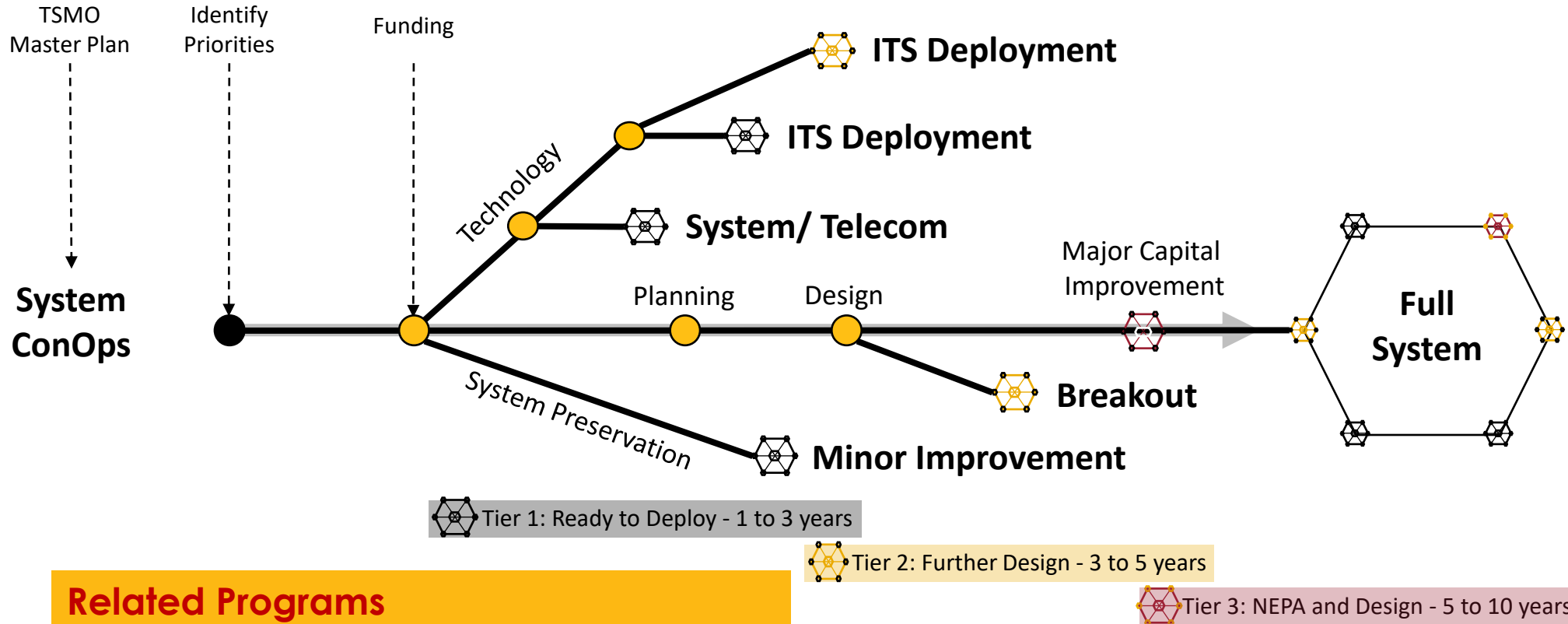
## Tiered Deployment

**Tier 1 - OPS**  
ITS / Signals/ Comm.

**Tier 2 – OPS/ Districts**  
ATMS/System. Pres.

**Tier 3 – OPPE/ OHD**  
Major Improvement

# Formalizing TSMO Plan and Programming - Funding, Project Development and Delivery



## Related Programs

- CHART Program
- Spot Mobility & Accessibility Projects
- Traffic Management
- MAJOR PROJECTS

# Modernizing Organizational Process for TSMO (Technology Deployment Projects)

## Statewide Operations Center (SOC) Reconfiguration

- Lead Office: OTMO
- Technology refresh and physical reconfiguration to enhance its operational efficiency.
- \$5 Million Construction Contract



## US-1 Innovative Technology Corridor

- Lead Office: OTMO
- Arterial Traffic Management and CAV
- \$5.7 Million Construction Contract



**CRASH ON I-95 NB  
AT EXIT 43  
USE ALT ROUTE**



## TSMO Systems 4, 8, & 16 – Eastern Shore Traffic Operations

- Lead Office: OTMO
- Project limits on US-50 from the Annapolis Bay Bridge to Ocean City, MD
- Deploy TSMO technologies to ease recurring and non-recurring congestion
- \$9 M Estimated Construction Contract Value



# Modernizing Organizational Process for TSMO (Major Capital Improvement Projects)

## I-270 Innovative Congestion Mgmt. (ICM) Project

- Lead Office: OHD
- Project limits on I-270 from I-495 to I-70
- Geometric improvements complete
- ITS device (DSA, QW, etc.) deployment (**Discontinued**)
- Ramp metering activated on September 15, 2021



## I-695 TSMO Project

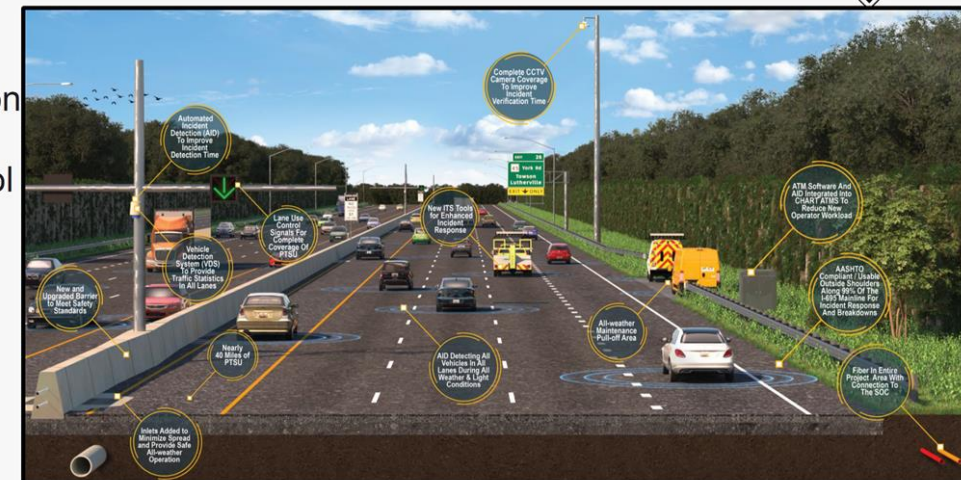
- Lead Office: OHD
- Project Limits from I-70 to MD 43
- Part-time Shoulder Use
- ITS Technology & Fiber Deployment
- Anticipated Completion Date: Fall 2022



## Technology to Support PTSU



- Radar-Based Automated Incident Detection (AID)
- Lane Use Control Signals (LUCS)
- Fiber Network
- ITS Device Cabinets
- Roadside Conduits





# TSMO Outreach

## - Internal & External

### Internally

- TSMO Executive Committee & Task Forces
- District Chief Engineer Tours

### Within Maryland

- CHART Board
- TSO Planning Council & MPO Roundtable
- Freight TBU Meetings
- MDQI
- MPOs (MWCOCG-SPOTS, BMC-BRTB, HEPMPO etc.)
- ITS MD/ Tri-State Chapter

- TSMO Video
- Brochure/ Flyers
- TSMO Strategy One Pagers
- TSMO Website/ Resources



### Nationally

- NOCoE
- Peer DOT Reg. Forums



Momentum Newsletter



MdQI Newsletter



Moving Maryland Newsletter

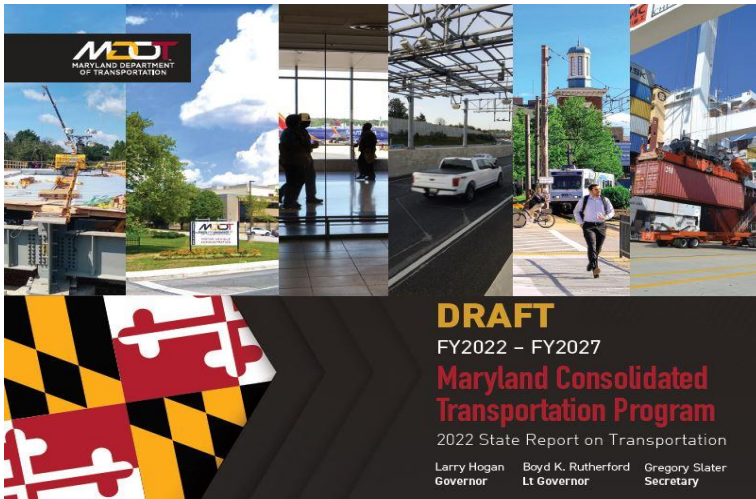
# TSMO Outreach

## – Regional Ops Forums

### TSMO Regional Operations Forums

- MDOT SHA received a \$75K STIC grant for TSMO Outreach efforts
- Separate day-and-a-half Regional Operations Forums (ROFs) with 30-35 key Maryland stakeholders/partners from each District (1 thru' 7)
- Includes State, County, District, University, and Metropolitan Planning Organization (MPO) staff
- Objective is to provide practitioners with information on new and innovative approaches for managing and operating the highway system
- Expands Maryland's implementation of TSMO strategies and presents, through a series of modules, lessons learned from other national TSMO programs
- Next set of ROF sessions planned for Spring 2022

# TSMO and Other Program Connections



## Integration of TSMO Program into Enterprise Systems:

- Asset Service Warehouse
- Enterprise Asset Management Systems
- Asset Management Plans
- Risk & Resiliency Plans
- Cross-asset Allocation Models

formalize OPERATIONAL INFRASTRUCTURE **ASSET MANAGEMENT**

fill **CAPITAL SHELF** with SYSTEM PACKAGES

DEVELOP PLAN for optimizing **FUNDING STABILITY and FLEXIBILITY**

ADVANCE **HIGHWAY MAINTENANCE** 2.0



# Contact Information

**Subrat Mahapatra, Director**  
**Asset Management Office (AMO)**  
**MDOT State Highway Administration**  
**[Smahapatra@mdot.maryland.gov](mailto:Smahapatra@mdot.maryland.gov)**

**Mohammed Raqib, Chief**  
**Mobility Planning & Engineering**  
**Office of Transportation Mobility &**  
**Operations (OTMO)**  
**MDOT State Highway Administration**  
**[Mraqib@mdot.maryland.gov](mailto:Mraqib@mdot.maryland.gov)**