TSMO Survey

MWCOG
SPOTs Subcommittee

06/06/2024

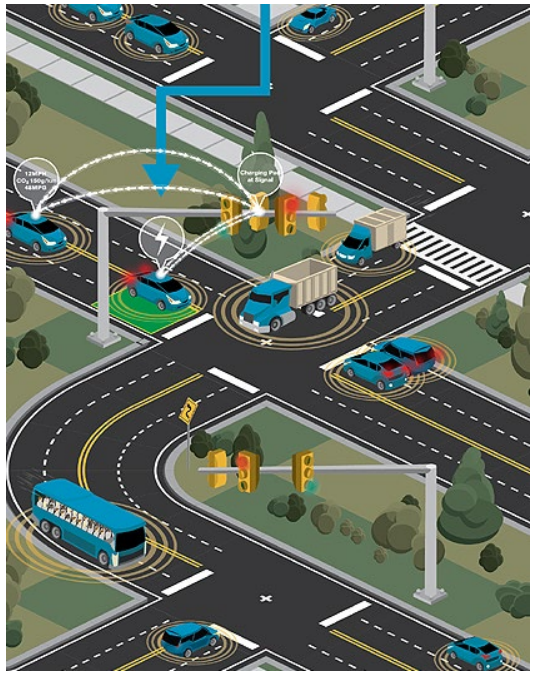
Agenda

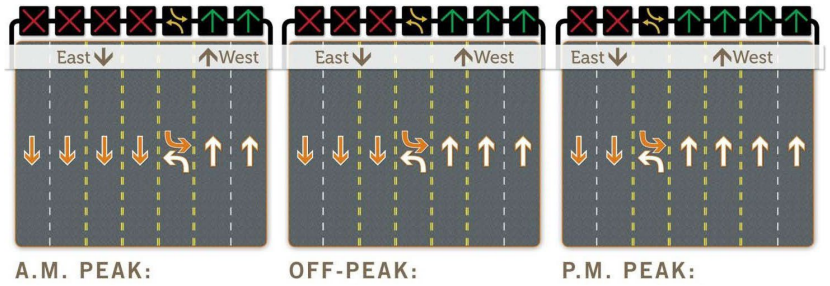
- Background
- Project Approach
- TSMO Survey
- Next Steps

Background

Transportation Systems Management & Operations (TSMO) Technology Inventory

- Technology changes fast
- Expand on previous TPB work
- Update traffic signal information





Source for all Images: FHWA
https://ops.fhwa.dot.gov/publications/fhwahop17025/index.htm
https://www.its.dot.gov/infographs/Eco_traffic_signal_timing.htm

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Project Approach

- Determine a manageable and useful set of TSMO items and technologies to quantify at an agency level
  - Define major service areas (categories) as the focus of the survey:
    - Active Traffic and Demand Management
    - Traffic Management Centers
    - Traffic Signal Operations
    - Integrated Corridor Management
    - Traveler Information
    - Work Zone Operations
    - Emergency Transportation Operations
    - Connected and Automated Vehicle Deployment
  - Existing technologies versus planned technologies
  - Emerging technologies that are not listed
  - Communication networks
  - GIS datasets on geolocation of assets

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Project Approach

- Active Traffic and Demand Management
  - Ramp Metering
  - Managed Lanes with Fixed Toll
  - Managed Lanes with Variable Toll
  - Dynamic Shoulder Lanes
  - Dynamic Lane Use Control
  - Dynamic Junction Control
  - Dynamic Merge Control
  - Dynamic Routing
  - Dynamic Speed Limits
  - Active Parking Management
  - Weigh-in-motion
  - Truck Parking
  - Truck Restrictions
- Traffic Signal Operations
  - Signals
  - Controllers
  - Cabinets
  - Detectors (Types & Function)

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Project Approach

- Surveyed agencies include:
  - City of Frederick
  - Arlington County
  - City of Gaithersburg
  - Prince George's County
  - City of Rockville
  - Maryland State Highway Administration (SHA)
  - District of Columbia Department of Transportation (DDOT)
  - Virginia Department of Transportation (VDOT)
  - Montgomery County
  - Washington Metropolitan Area Transit Authority (WMATA)
  - City of Falls Church
  - I-66 Express Mobility Partners
  - City of Alexandria
  - Transurban
  - City of Fairfax
  - City of Manassas Park
  - City of Manassas
  - Maryland Transit Administration (MTA)
  - Frederick County

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TSMO Survey

Word Doc Version

Active Traffic and Demand Management:

Strategy	Type of Control	Implementation Status		Available on GIS	Location
		Existing (Count)	Planned (Count)		
Ramp Metering	Pre-timed				
	Actuated				
	Adaptive				

Strategy	Type of Control	Link for more info + Additional comments
Ramp Metering	Pre-timed	
	Actuated	
	Adaptive	

Strategy	Communication	Implementation Status		Available on GIS	Location
		Existing (Locations)	Planned (Locations)		
Ramp Metering	Fiber Optic Cables				
	Radio				
	Cellular				
	Twisted Pair Cable				

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Word Doc Version

Traffic Signal Operations

Strategies:

Strategy	Implementation Status			Available on GIS
	Existing Number of Signals		Planned Number of Signals	
	Owned	Maintained		
Fully Actuated Signals				
Semi Actuated Signals				
Pre-timed Signals				
HAWK Signal				

Strategy	Link for more info + Additional comments
Fully Actuated Signals	
Semi Actuated Signals	
Pre-timed Signals	
HAWK Signal	

Strategy	Number of Signals		Available on GIS	Link for more info + Additional comments
	Existing	Planned		
Adaptive Traffic Signal				
Transit Signal Priority (TSP)				
Emergency Vehicle Preemption (EVP)				
Railroad Preemption (RRPE)				
Bus signal				
Bike signal				
ATSPMs*				
Traffic Responsive Signal Control				
Advanced Signal Warning System				

*Automated Traffic Signal Performance Measures

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TSMO Survey

Online Version

TSMO Inventory Survey - Active Traffic and Demand Management

kamar.amine@meadhunt.com Switch account

Not shared

* Indicates required question

Active Traffic & Demand Management - Ramp Metering

Does your agency operate **Ramp Metering**? *

- Yes
- No

Active Traffic & Demand Management - Ramp Metering Signals

Does your agency own/manage **Pre-timed Ramp Metering Signals**? *

- Yes
- No

Pre-timed Ramp Metering

Ramp Metering - Type of Control: **Pre-timed** - Existing Signals: *

Enter Count:

Your answer

Ramp Metering - Type of Control: **Pre-timed** - Planned Signals: *

Enter Count: (Note: Planned means implementation is within 2 years in the future)

Your answer

Ramp Metering - Type of Control: **Pre-timed** - Available on GIS? *

- Yes
- No

Insert Link for additional information on the above (if applicable)

Your answer

Additional Comments on the above

Your answer

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TSMO Survey

Online Version

TSMO Inventory Survey - Traffic Signal Operations

kamar.amine@meadhunt.com Switch account

Not shared

* Indicates required question

Traffic Signal Operations - Types of Signals

Does your agency own/maintain **Fully Actuated Signals?** *

- Yes
- No

Traffic Signal Operations - Fully Actuated Signals

Traffic Signal Operations - **Fully Actuated Signals:** Existing **Owned** Signals *

Enter the number of existing signals that your agency **owns**

Your answer

Traffic Signal Operations - **Fully Actuated Signals:** Existing **Maintained** Signals *

Enter the number of existing signals that your agency **maintains**

Your answer

Traffic Signal Operations - **Fully Actuated Signals:** Planned Signals *

Enter the number of planned signals: (Note: Planned means implementation is within 2 years in the future)

Your answer

Traffic Signal Operations - **Fully Actuated Signals -** Available on GIS? *

- Yes
- No

Insert Link for additional information on the above (if applicable)

Your answer

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TSMO Survey

Responses

- Agency: City of Manassas
- TSMO Category: ATDM

Active Traffic & Demand Management: Truck Restrictions

Does your agency operate **Truck restrictions?** *

- ◯ Yes
- ◯ No

Active Parking Management: Truck restrictions

Truck restrictions - Existing Restrictions *

- ◯ Yes
- ◯ No

Truck restrictions - Planned Restrictions *

(Note: Planned means implementation is within 2 years in the future)

- ◯ Yes
- ◯ No

Location of **Truck restrictions** *

Your answer

Truck restrictions - Available on GIS? *

- ◯ Yes
- ◯ No

Insert Link for additional information on the above (if applicable)

Your answer

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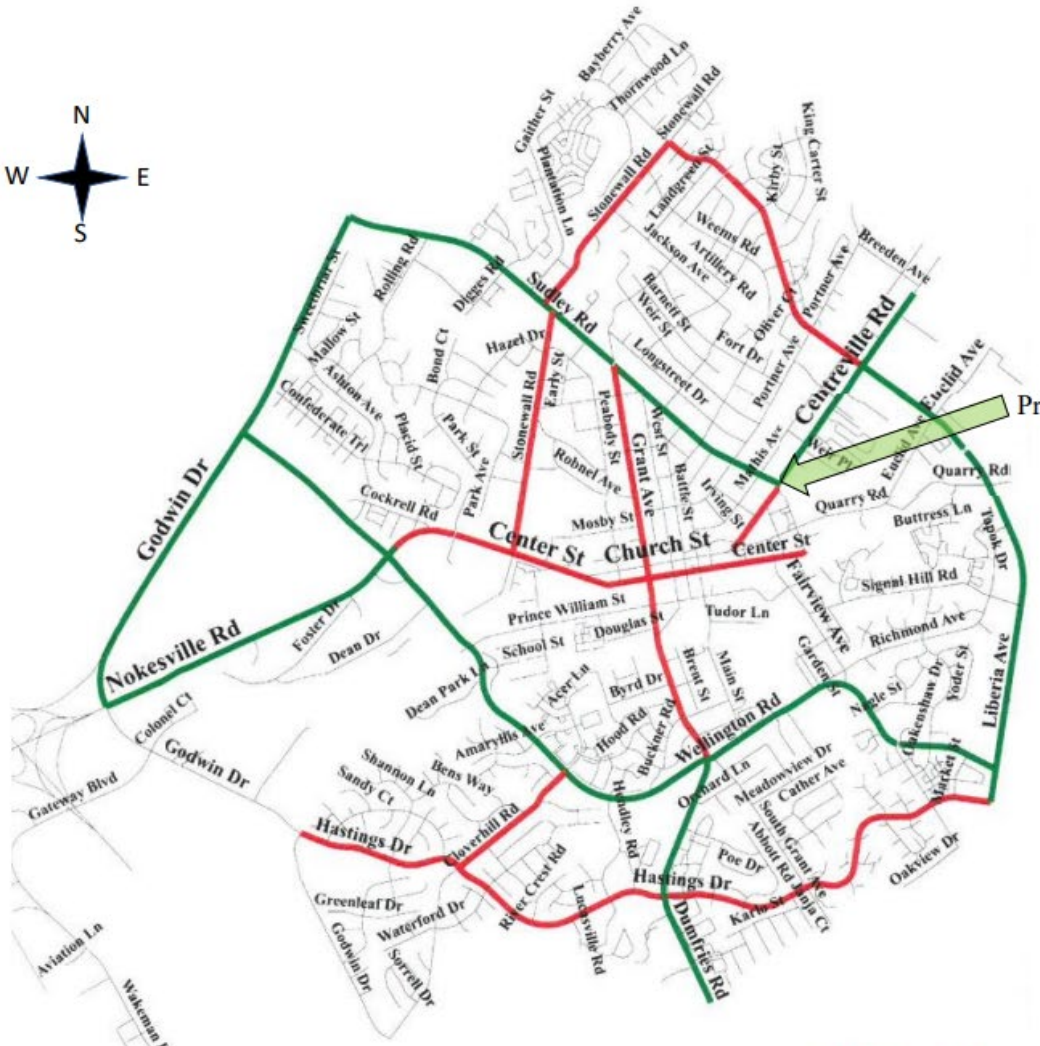

CITY OF MANASSAS

TRUCK ROUTE/RESTRICTIONS

Legend
- Truck Route
- Truck Restriction
- Undesignated

Truck Volume Percentages
(Existing % = Future %)
Sudley Road (Rte. 234) – 2.3%
NB Centreville Road (Rte. 28) - 3.5%
SB Centreville Road (Rte. 28) – 2.7%
Prescott Avenue – 2.2%

Note: City expects to add additional truck restriction signs on Quarry Road.

Manassas
HISTORIC HEART. MODERN BEAT.

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Next Steps

Collecting Survey Results

Analyzing Survey Results

Summarizing the results
Defining trends & gaps

Compile GIS Information

Only agencies that have existing GIS databases

Finalizing Report & PPT Slides

Next Steps

- Analyzing Survey Results

Agencies versus different criteria

ATDM		1	2	3
		Agency A	Agency B	Agency C
Adaptive Ramp Metering Signals	Existing	2	3	4
	Planned	3	4	5
Variable Tolling Lanes	Existing			
	Planned			

Traffic Signal Operations		1	2	3
		Agency A	Agency B	Agency C
Signals per Traffic Engineer	Existing	2	3	4
	Planned	3	4	5

Traffic Signal Operations		1	2	3
		Agency A	Agency B	Agency C
Signals density (per sq mile)	Existing			
	Planned			
CCTV density (per sq mile)	Existing			
	Planned			

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Thank You!

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