


TSM&O
Transportation Systems Management & Operations
*Managing and Operating for an Efficient Transportation System*

# Arterial Management Program

AMP

ITE/NOCoE Virtual Peer Exchange: CMM

- August 9, 2017

FDOT DISTRICT FOUR

Arterial Management Program
FDOT District Four

# Program Overview

Transportation System Management & Operations (TSM&O)

Freeway, Arterial and Transit performance

Actively manage the multimodal transportation network

Positive safety and mobility outcomes

A real-time approach involving "taking back" capacity lost due to

- Recurring congestion
- Congestion created by traffic incidents

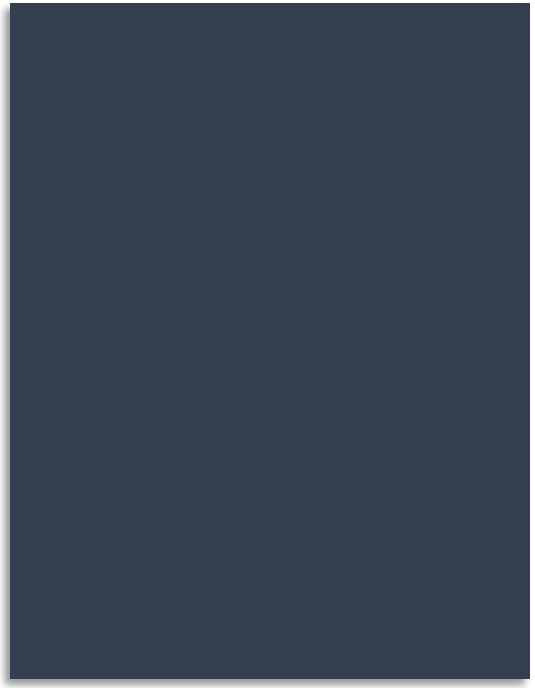
# Program Overview (continued)

## Current Challenges in South Florida

- Congestion
- Incident Management
- Organizational
- Funding

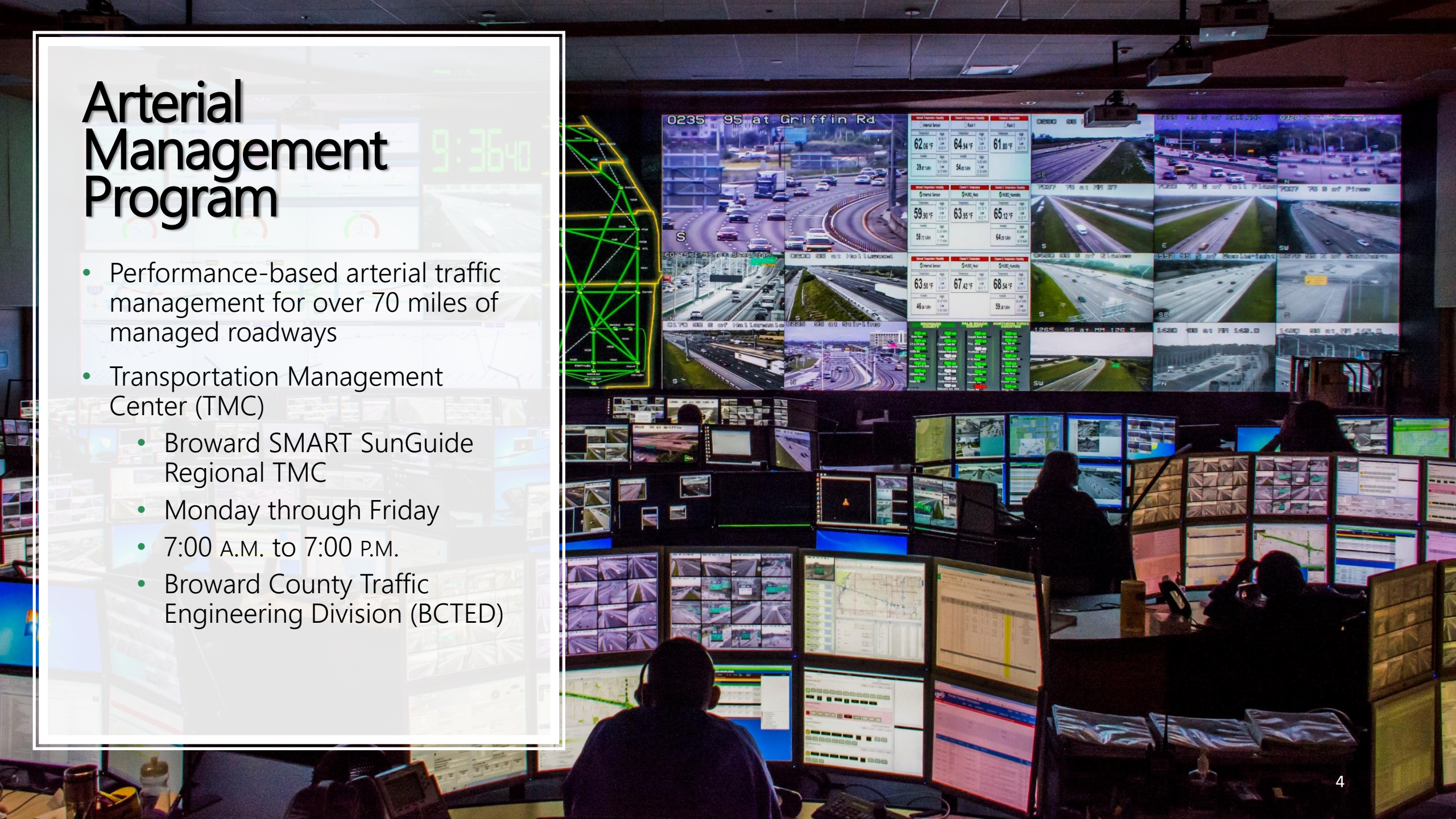
## Strategies and Priorities

- Reflect greatest needs (traffic, transit and safety)
- Based on needs (typical day)
- Includes state and non-state roads



# Arterial Management Program

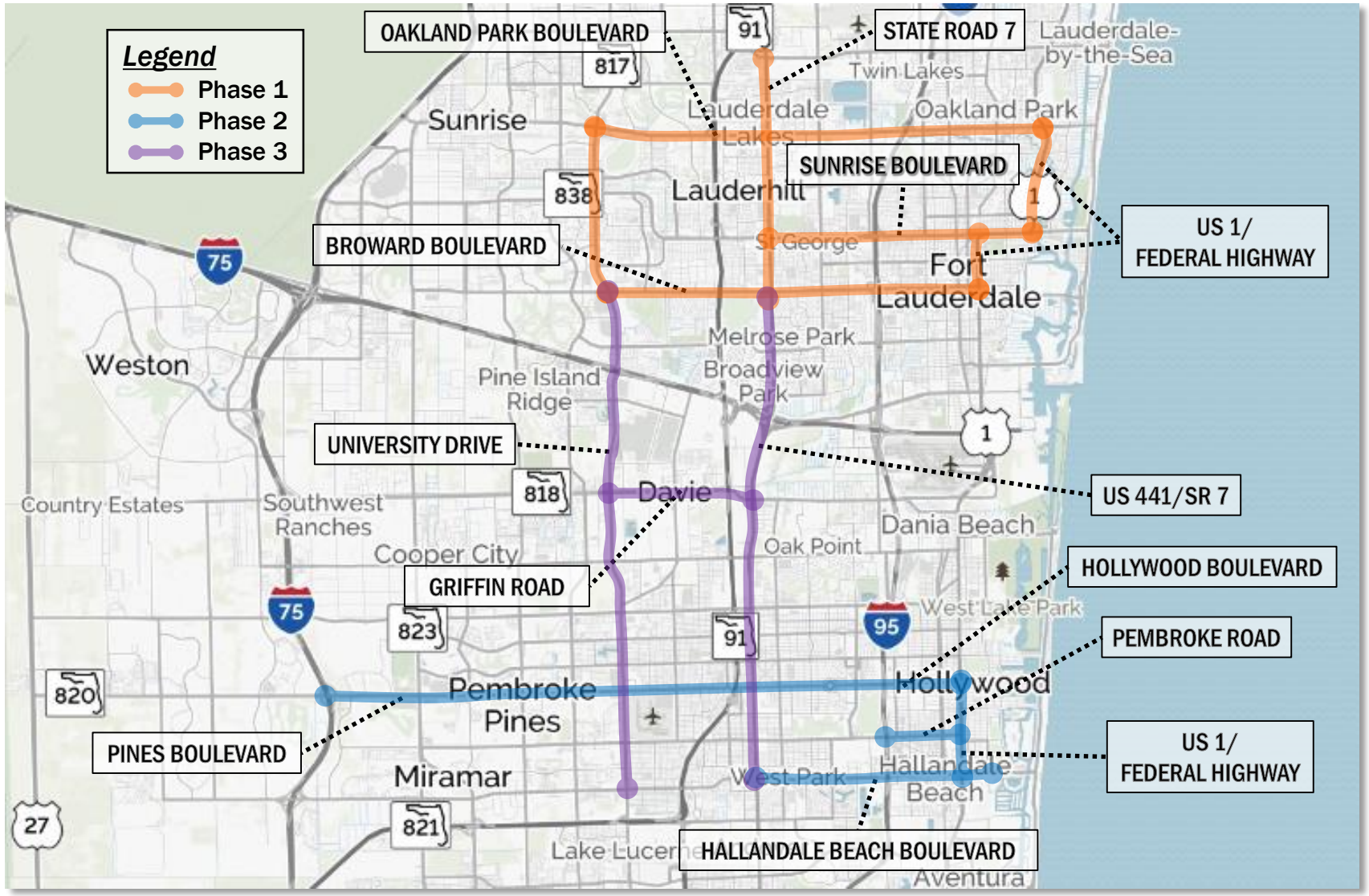
- Performance-based arterial traffic management for over 70 miles of managed roadways
- Transportation Management Center (TMC)
  - Broward SMART SunGuide Regional TMC
  - Monday through Friday
  - 7:00 A.M. to 7:00 P.M.
  - Broward County Traffic Engineering Division (BCTED)




- Performance Monitoring
  - General Traffic Performance
  - Travel Time Reliability
  - Monitor Transit Impacts
  - Monitor Signal System Status (future)
- Travel Information Dissemination
- Event and Incident Management
- Traffic Signal Timing

# AMP Strategies

# Coverage Area



# Standard Operating Guidelines

- Incident Response and Monitoring
  - Notification of appropriate local responders
  - SunGuide Incident Management Database
  - Coordination with Broward County staff for appropriate response to incidents and trends


# Standard Operating Guidelines (continued)

- Current Interagency Coordination
  - South East Florida Regional TMC Operations Committee (SEFRTOC)
  - Broward County Traffic Engineering Division (BCTED)
  - FL 511 Interactive Voice Response System (IVR) and companion website *www.fl511.com*
  - Traffic Incident Management (TIM)
- Future Agency Coordination
  - Local Law Enforcement and Fire Rescue

# Operations and Maintenance Phase – Focus Areas

- Data Automation
- Weather Events
- Work Zone Management
- Signal Retiming Activities
- Interagency Coordination

## Broward Regional Transportation Management Center
### Performance Measures Monthly Report – April 2017

| Number of Monitored Incidents | Number of Managed Incidents | Number of Signal Timing Changes | Average Incident Duration (Minutes) | Benefit-to-Cost (B/C) | Net Benefit Value |
|---|---|---|---|---|---|
| 345 | 4 | 54 | 26 | 8.15 | $429,095 |

**Estimated Monthly Benefits Summary**

| Performance Measure | Benefit |
|---|---|
| Travel Time/Delay Savings | $405,484 |
| Reduction in Emissions | $28,004 |
| Reduction in Fuel Consumption | $55,642 |
| Safety Benefits | N/A |
| Total Benefits | $489,130 |
| Estimated Monthly Operational Cost | $60,035 |

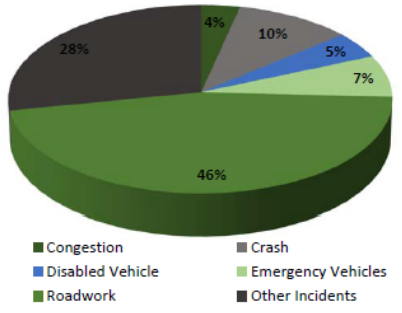
| Delay Savings Due to Active Arterial Management | |
|---|---|
| Average Delay Savings | 507.9 seconds/vehicle |
| Total Delay Savings | 19,320 vehicle-hours |

**AMP Operations Performance Measures**

| Performance Measure | Target | April 2017 |
|---|---|---|
| DMS Efficiency | >95% | 83% |
| AMP Operator Error Ratio | 0.20 | 0.32 |
| Event Confirmation Average | <2 min. | 0 min. 24 sec. |
| Time to Post ADMS Average | <5 min. | 1 min. 55 sec. |

**Monthly Incident Summary**

*Interagency Coordination captured under "Other Incidents"*



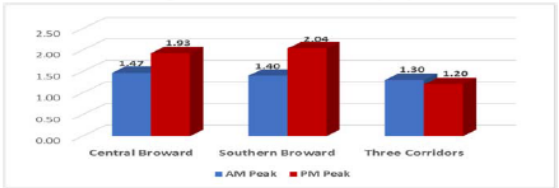

**ITS Device Summary & Systems Availability (FDOT Maintained)**

| Device Type | Device Total | Availability |
|---|---|---|
| Online Traffic Signals & System Health | N/A | N/A |
| Closed Circuit Television (CCTV) Cameras | 174 | 99.61% |
| Arterial Dynamic Message Signs (ADMS) | 23 | 100% |
| Microwave Vehicle Detection System (MVDS) Detection Devices | 50 | 99.92% |
| Bluetooth Traffic Origin And Destination (BlueTOAD) Detection Devices | 72 | 99.98% |
| Permanent Traffic Management Systems (PTMS) Detection Devices | 13 | 99.98% |
| Fiber Optic System (approx. mileage) | 72 | N/A |
| AMP Servers & Workstation Computers | 22 | 100% |

**Arterial Dynamic Message Sign (ADMS) Utilization**

| AMP Region | Available ADMS | Total Messages Displayed | Average Message Duration |
|---|---|---|---|
| Central Broward | 10 | 10,065 | 45 min. |
| Southern Broward | 4 | 8,687 | 34 min. |
| Three Corridors | 9 | 43,832 | 14 min. |

**Regional Travel Time Index (TTI)**




**Central Broward:** Oakland Park Blvd, Sunrise Blvd, Broward Blvd, University Drive, US-441, and US-1
**Southern Broward:** Pines/Hollywood Blvd, Pembroke Road, Hallandale Beach Blvd, and US-1
**Three Corridors:** University Drive, US-441, and Griffin Road

# Future AMP Expansion

## FDOT Five Year Work Program

**5**

Planned Projects in Broward County

**6**

Planned Projects in Palm Beach County

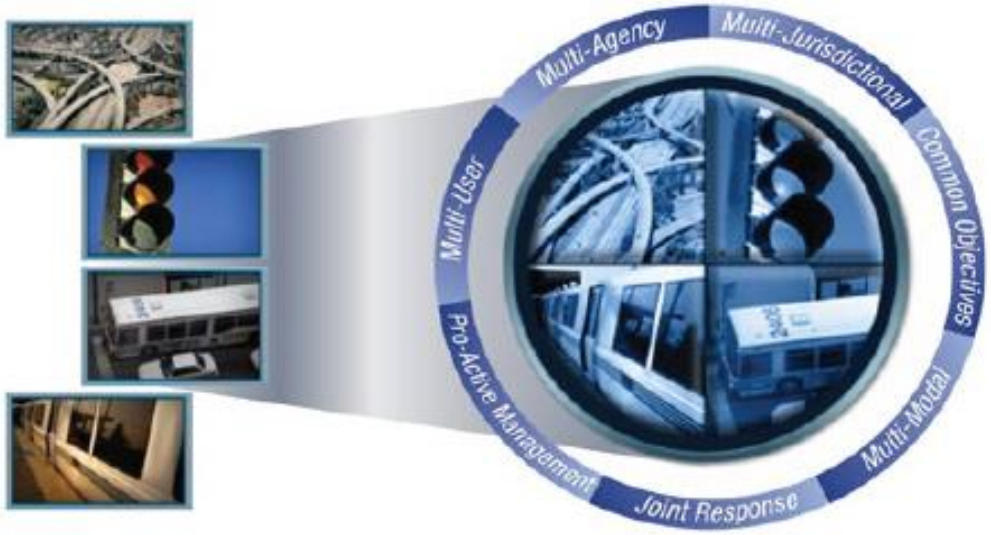
*Integrate and coordinate with agencies to optimize arterial and freeway efficiency and capacity*

# Why Create a Master Plan?

- Provide mobility solutions where capacity is limited
- Prioritize based on needs, considering opportunities
- Leverage existing infrastructure
- Integrate TSM&O in all project phases
- Encourage collaboration and coordination

# TSM&O Project Development

- Leverage Opportunities of other projects
  - Tentative Work Program
  - Long Range Transportation Plan
  - TSM&O Scoping Form (design through maintenance)
- Standalone Projects
- Partner Requests
  - MPO local program initiatives
  - Safety
  - Transit corridors and hub access
  - Freight
  - Seaport/Airport

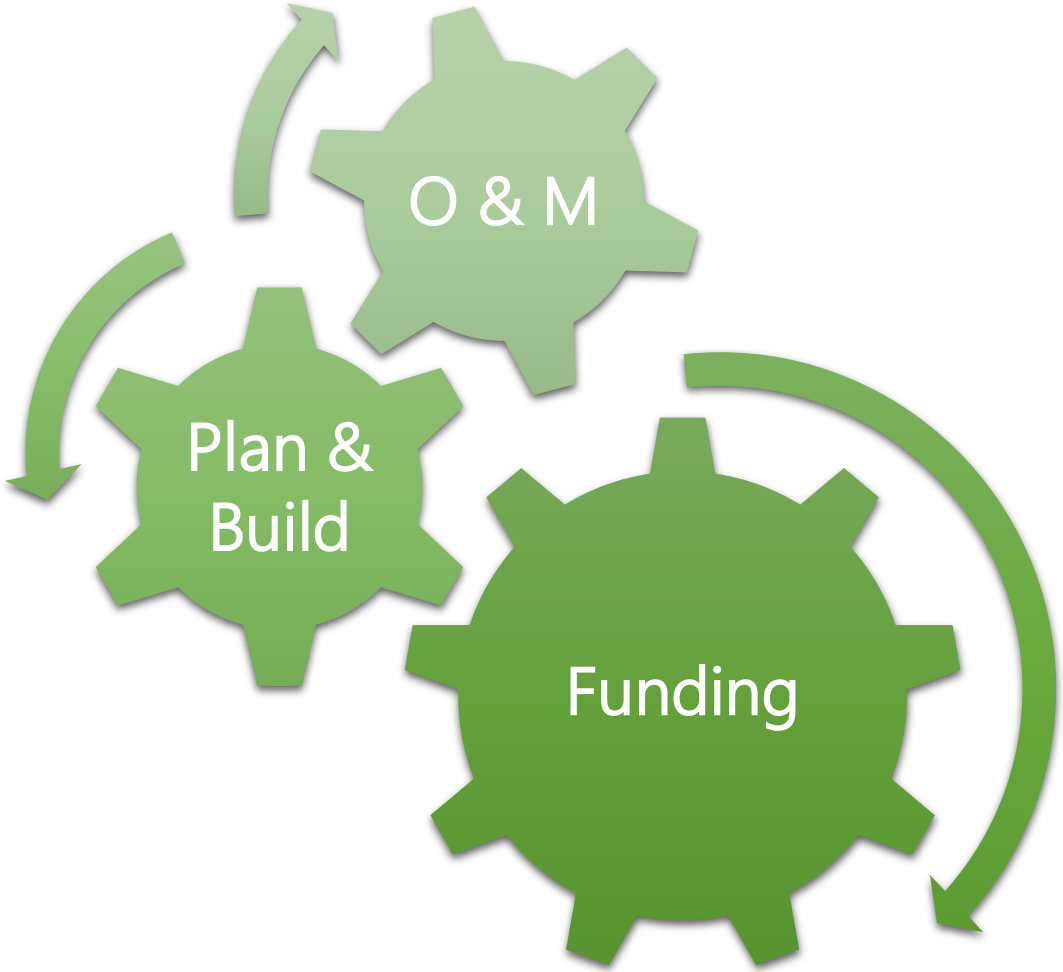


# Mainstreaming

- Highways – FDOT
- Arterials – Joint

## Arterials

| Operations | Maintenance |
|---|---|
| Local responsibility | Local responsibility |
| FDOT support for pilots | FDOT support, project based |



# Program Recognition

- Nationally recognized Intelligent Transportation Systems (ITS)
- Featured in the Federal Highway Administration's (FHWA's) Public Roads Magazine
- TSM&O Focus Areas
  - Arterial Management
  - Freight and Goods Mobility
  - Work Zone Management
  - Transit/Multimodal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Clearing Crashes on Arterials

by by Dave Bergner and Kimberly C. Vásconez

Local departments of public works and DOTs play a vital role in managing traffic incidents. But what exactly are they responsible for? And how can the TIM responder course help clarify their functions?



Michigan DOT

Michigan DOT's Employee Memorial (shown here) is a permanent tribute to highway workers from across the State who lost their lives in the line of duty. Each figure represents a work activity conducted by DOT employees and is constructed of materials salvaged from highway jobs. The memorial, located at the Clare Welcome Center on U.S.127 in Clare County, MI, serves to educate the public about the human cost of building and maintaining Michigan's transportation system.

# Questions?

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