Transportation Systems Management and Operations (TSMO) 
Hillsborough County MPO
What is Transportation Systems Management and Operations (TSMO)?

An integrated set of strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.

MAP-21, SECTION 1103 (a) (30) (A)
Why TSMO?

- Limited Funding
- Advances in technology
- Greater expectations from customers
- Better understanding of congestion
### Urban Congestion Perspective

- **Bottlenecks, 40%**
- **Incidents, 25%**
- **Work Zones, 10%**
- **Poor Signal Timing, 5%**
- **Special Events, 5%**
- **Inclement Weather, 15%**

### Rural Congestion Perspective

- **Incidents, 50%**
- **Work Zones, 35%**
- **Inclement Weather, 10%**
- **Bottlenecks, 3%**
- **Poor Signal Timing, 2%**

*Source: 2015 Urban Mobility Scorecard*
TSMO Strategies

- Active Transportation
- Congestion Pricing
- Freight Management
- Integrated Corridors
- Incident Management
- Managed Lanes
- Parking Management
- Road Weather
- Special Events
- Incident Management
- Traffic Signals
- Transit Signal Priority
- Traveler Information
- Work Zones
MetroPlan Orlando

• 10 Worst First Behaviors/Locations
  • TSMO Department
  • Committee
  • Funding
  • “Champions”
“Most dangerous highway in America”
Source: ABC news; November 2017
• Polk TPO
• Hillsborough MPO
• Forward Pinellas
• **Sarasota/Manatee MPO**
• **Pasco MPO**
Tasks

• Task 1: Regional TSMO Opportunity
• Task 2: Policy Board Support
• Task 3: Development of TSMO
  ❖ Capability Maturity Model (CMM)
• Task 4: Formalize Interagency Agreement
• Task 5: Management
• Task 6: Evaluation
• Transportation Research Board (TRB); Strategic Highway Research Program (SHRP 2 L06)
• To improve the effectiveness of their TSMO activities.
• Self-evaluation of the key process and institutional capabilities
• Adapted from IT industry
Dimensions of Capability Maturity Model

- Business Processes
- Systems and Technology
- Performance Measurement
- Culture
- Organization and Staffing
- Collaboration
The focus is on continuous improvement - in effect, a roadmap for “getting better at getting better.”

Most Agencies Today

- **Level 1: Performed**
  - Activities & relationships ad hoc
  - Champion-driven

- **Level 2: Managed**
  - Processes developing
  - Staff training
  - Limited accountability

- **Level 3: Integrated**
  - Process documented
  - Performance measured
  - Organization/partners aligned
  - Program budgeted

- **Level 4: Optimized**
  - Performance-based improvement
  - Formal program
  - Formal partnerships

Goal for the Future
## CMM – FDOT D5

**Capability Level Self Evaluation Structure**

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>Level/Score (Out of 4)</th>
<th>Agency/Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
<td>2017</td>
</tr>
<tr>
<td>Business Processes</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Systems &amp; Technology</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Performance Measurement</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>2.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Culture</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Organization/Workforce</td>
<td>2.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
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<td></td>
<td>1.0/2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Collaboration</td>
<td>2.0</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Within the District, there are five (5) MPOs/TPOs, representing nine (9) counties.
Transportation Systems Management & Operations Implementation Plan
Florida Department of Transportation District 5

PREPARED FOR
FDOT
FDOT District 5
719 South Woodland Blvd
Deland, FL 32720
386-948-6000
# CMM – Hillsborough MPO

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>LEVEL 1 PERFORMED</th>
<th>LEVEL 2 MANAGED</th>
<th>LEVEL 3 INTEGRATED</th>
<th>LEVEL 4 OPTIMIZING</th>
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<tbody>
<tr>
<td>Business Processes</td>
<td>D5</td>
<td>X</td>
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<td>Systems &amp; Technology</td>
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<td>X</td>
<td></td>
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<td>Collaboration</td>
<td></td>
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<td>D5</td>
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</table>
## Business Process

- **Level 2 To Level 3**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiyear statewide TSM&amp;O plan and program with deficiencies, evaluation, and strategies (L2)</td>
<td>Programming, budgeting, and project development processes for TSM&amp;O standardized and documented (L3)</td>
</tr>
<tr>
<td>Developing multiyear TSM&amp;O plan and related process improvements</td>
<td></td>
</tr>
</tbody>
</table>

### Key Sub-dimensions
- Planning Process
- Programming/Budgeting
- Project Development/Procurement

### Responsibility/Relationship
- Working group
- Liaison with FDOT
- Project Development/Procurement
# System and Technology

![checkmark] Level 2 To Level 3

<table>
<thead>
<tr>
<th>From</th>
<th>Systems engineering employed and consistently used for ConOps, architecture and systems development (L2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Systems and technology standardized, documented and trained statewide, and new technology incorporated (L3)</td>
</tr>
<tr>
<td>By</td>
<td>Developing tools, procedures and training to support standardized systems engineering process</td>
</tr>
</tbody>
</table>

## Key Sub-dimensions

- Regional Architecture
- Systems Engineering*
- Standards/Interoperability

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*Validation and Testing

## Responsibility/Relationship

- Architecture Review Committee
- FDOT TSMO Staff
- Senior/Middle Management
# Performance Measures

<table>
<thead>
<tr>
<th>From</th>
<th>No regular performance measurement related to TSMO (L1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>TSMO strategies measurement largely via outputs, with limited after-action analyses (L2)</td>
</tr>
<tr>
<td>By</td>
<td>Identifying output and outcome performance measures for the selected operations activities</td>
</tr>
</tbody>
</table>

## Key Sub-dimensions
- Measures Definition
- Data Acquisition
- Measures Utilization

## Responsibility/Relationship
- Working group; FDOT; FHWA
- Staff; GPC
- Association of MPOs
Challenges/Opportunities

• Staff turnover
• LRTP Updates
• Change
• Parochialism
• Resources
• Timing
Resources

https://transportationops.org/

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https://operationsacademy.org/

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Next Steps

• Developing case studies
• Evaluation
• Pool Funded Study
• National Institute for Congestion Reduction [NICR]