



MEETING SUMMARY

Meeting Date: June 2, 2016 (Thursday)
Subject: TSM&O Consortium Meeting

Time: 10:00 AM – 12:00 PM

Meeting Location: FDOT Urban Office | Lake Apopka B conference Room
133 S. Semoran Blvd, Orlando, FL

I. OVERVIEW:

The purpose of this meeting summary is to provide an overview of the June 2, 2016 TSM&O Consortium Meeting. These meetings occur every eight weeks on Thursdays to encourage collaboration, discussion, and knowledge sharing with regional and local agency partners on the TSM&O Program in District 5.

II. Introduction and Collaboration Dimension Overview

Brief introduction to the topic of the meeting was given by Melissa Gross, VHB, followed by the introduction of David Cooke, FDOT D5 Planning Manager. Ms. Gross presented slides on the following topics:

- Schedule of TSM&O in D5
 - Implementation Plan – Fall 2016
 - TSM&O Guidebook – Fall 2016
 - D5 ITS Master Plan – Fall 2016
 - TSM&O Continuing Services – TEDS
 - Big Data Research Pilot – UF and VHB
- Capability Maturity Framework (CMF)
 - Collaboration Dimension – A brief overview of the Collaboration dimension was presented, followed by the relationship to the other 5 CMF dimensions.
 - What is the role of collaboration in the TSM&O Program?
 - TSM&O Program Process - V Diagram
 - Roles and Responsibilities in the TSM&O Program process
 - See attached presentation

III. State of Manatee County's ATMS: Past, Present and Future

Vishal Kakkad, County Engineer with Manatee County presented an overview of the Manatee County RTMC and the ATMS operations (see attached presentation for more details):

- Sarasota Manatee MPO
- Identified Stakeholders
- 2005 Interlocal Agreement – Unified Regional Intelligent Transportation System
 - Sharing of revenue was based on share of Census population
- 2011–2014 – Operational Agreements
- FDOT's Freeway Management System on I-75 (2014)
- Manatee ATMS Projects

- Overview of Phases I and II with assets deployed and supporting infrastructure
 - RTMC Control Room – shared facility with FDOT, Manatee, and Sarasota counties
- Sarasota County ATMS Planned Phases
 - Overview of assets deployed and supporting infrastructure upgrades
 - Includes Cities of Sarasota, Venice, and North Port
- RTMC Operations
 - Staff
 - RTMC Manager
 - 4 Operators (2 operators per shift)
 - System Administrators
 - Hours of Operation
 - Monday through Friday – 6:00am to 7:00pm (2 shifts)
 - RTMC Operations Manual
 - Based on FHWA’s Manual (FHWA-HOP-06-015)
 - Adopted by the ITSMT
- RTMC Quarterly Dashboard
 - Provides performance measures
- An overview of two Incident Management examples and one Congestions Management Example with Cost Benefit Analysis:
 - Cost Savings for Congestion/Incident Management
 - Year 2014 - \$999,861
 - Year 2015 - \$976,890
- What’s next?
 - Traveler information website
 - Will allow County residents to make more informed decisions regarding their travel plans
 - Bluetooth Travel Time Measurement Devices – Countywide
 - Potential extended services and hours of operation
 - University Pkwy Adaptive Signal Control – Pilot Project
 - SR 70 Adaptive Signal Control – FHWA Grant
 - Manatee County 22 “Remote” Traffic Signals without Fiber
 - Additional cameras and detection system devices
- DISCUSSION / Q&A
 - What kind of funds are the MPO funding?
 - Vishal Kakkad, to follow up on this response
 - Is the dashboard publicly available?
 - Yes, it is available on the Manatee County homepage
 - <http://www.mymanatee.org/home/government/departments/public-works/traffic-management/traffic-engineering/advanced-traffic-management-system.html>

IV. D5 ITS Master Plan – Regional Resource and Staff Sharing

Jessica Renfrow, Metric Engineering, presented an overview of the resource and staff sharing section of the ongoing D5 ITS Master Plan. Her presentation covered the following topics:

- Master Plan Overview

- Purpose
 - Create an overarching ITS Master Plan for the Region (Not a “deployment plan”)
 - Create a consensus on what items need to be integrated between agencies
 - Determine what standards need to be met (security, maintenance, staffing, etc.)
 - Develop an overall assessment
 - What is in place and goals for the future?
 - What are the road blocks and how do we overcome them?
 - High level goals the region should be working toward
- ITS Master Plan Task 3 – Staffing Resources
 - Existing Staffing
 - Metric has gathered information from locals regarding existing staffing levels
 - They will be reaching out for _____
 - IT Staffing Resources
 - Based on current analysis, we determined there might be a need for regional resources, specifically in IT positions
 - Potential regionally shared positions
 - Network Management /Admin
 - Network Technician
 - Network Server Admin/Security Admin
 - SunGuide Database Admin / Software Analyst / Software Developer
 - Estimated total wages per year between four positions - \$600,000
 - Benefits to shared resources
 - All agencies do not have a need for full time network staff
 - Networking staff is costly, and this would be able to be absorbed by the entire region
 - Proposal to Local Agencies
 - FDOT would manage the contract
 - FDOT would execute an LPA with any local agency that wants to participate
 - Analyzed cost by three different methods
 - Population
 - Equal share
 - Interconnected Signals and ITS End Devices
 - Funding Recommendation
 - After reviewing the different options, the FDOT recommends using the cost per weighted number of interconnected signals and ITS end devices as it would most accurately depict the potential utilization per agency
 - The FDOT would annually review the utilization per agency and try to align the manual cost accordingly
- DISCUSSION & QUESTIONS
 - FDOT would manage the contract itself, but there would be individual TWOs for each agency

- The number of positions can change based on need
- Still preliminary draft of funding and needs
 - Stay tuned to Fall 2016 for a final version, as FDOT narrows down needs, buy-in, and available staff

V. Project Update

A status update of the ongoing D5 TSM&O Projects was given by Tushar Patel, FDOT D5 ITS:

- AAM Phase 3 will commence Design shortly
- Looking at two Regeneration Sites
- RTMC to be located at SR 417 and I-4
- AAM Operations Contract is ongoing
 - Baseline effort is coming to a close
 - Full-time staff monitoring will commence in July
 - Epic is working on dashboards at the executive level and traffic engineering level
 - Another dashboard relating to operations is also in the works
- RTMC Design (PowerPoint dated January 2016)
 - Located at International Pkwy and Wilson Rd
 - Presentation will be available on CFLRoads
 - Construction – likely April/May 2017 (12 to 14 months of construction expected)
- Upcoming Projects
 - 4 IDMS sites in Marion County
- DISCUSSION & QUESTIONS
 - FDOT has not yet identified where the funds to support the network staff positions will come from
 - River2Sea TPO has developed an ITS Master Plan
 - One approach that Brevard County staff are hoping to implement is a policy that if a small enough amount of money becomes available in the County's budget, it could be included on a District Five contract to help with operations

END OF SUMMARY

This summary was prepared by David Williams and Melissa Gross, and are provided as a summary (not verbatim) for use by the project team. The comments do not reflect FDOT's concurrence. Please review and send comments, via e-mail: mgross@vhb.com so they can be finalized for the files.

Welcome to the TSM&O Consortium Meeting June 2, 2016



Transportation Systems Management & Operations



Meeting Agenda

1. Introduction and Collaboration Dimension Overview
 - **Melissa Gross**, VHB
2. State of Manatee County's ATMS: Past, Present, and Future
 - **Vishal Kakkad**, Manatee County Traffic Engineer
3. D5 ITS Master Plan – Regional Resource & Staff Sharing
 - **Jessica Renfrow**, Metric
4. Project Update
 - **Tushar Patel**, D5 ITS



Transportation Systems Management & Operations



TSM&O in D5 Today

D5 TSM&O Implementation Plan

• Fall 2016

Planning for TSM&O Guidebook

• Fall 2016

D5 ITS Master Plan

• Fall 2016

D5 DW TSM&O Continuing Services

• TEDS

Big Data Research Pilot

• UF & VHB



Transportation Systems Management & Operations



Capability Maturity Framework (CMF)

Collaboration Dimension

Building and fostering relationships within the agency between departments and externally to:

- Law Enforcement
- Local Governments
- MPO's and TPO's
- Transit Agencies
- Private Sector



Transportation Systems Management & Operations



How does Collaboration support the CMF Dimensions?

Business Process

- Consensus on standardized TSM&O program methodology
- Project Funding Options

Culture

- Encourage knowledge sharing across disciplines/units
- Break down the “siloes”

Performance Measures

- Setting regional Performance Metrics
- Active Performance Monitoring

Systems and Technology

- Data Sharing / Agreements
- Asset Management & Maintenance

Staffing and Organization

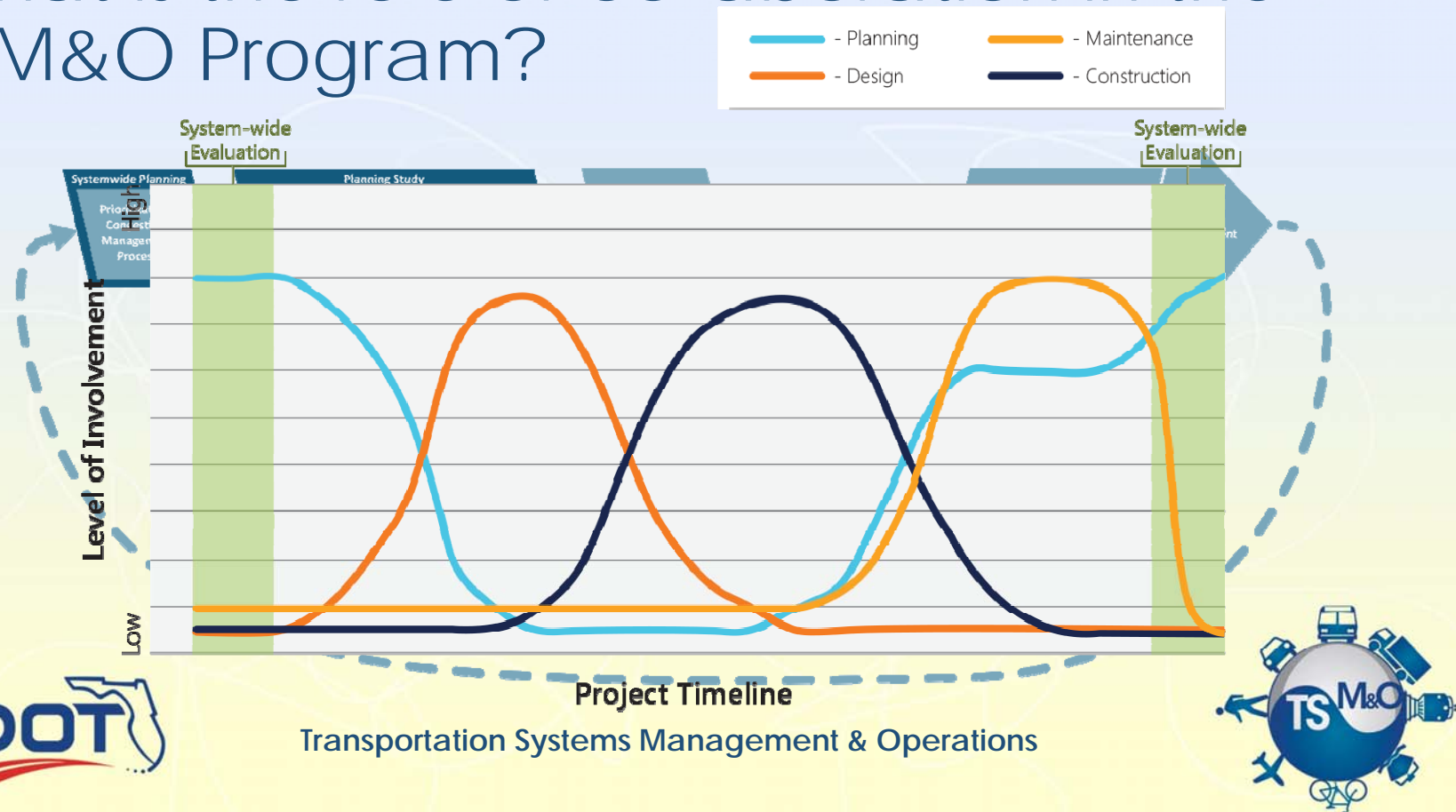
- Resource / Staff Sharing
- Clearly defined roles / responsibilities within the TSM&O program



Transportation Systems Management & Operations



What is the role of collaboration in the TSM&O Program?



State of Manatee County's ATMS: Past, Present, and Future

**D5 TSM&O Consortium Meeting
June 2, 2016**

Presented by:

Vishal S. Kakkad, P.E., PTOE

County Traffic Engineer
Public Works Department



Regional Traffic Management Center



Background

- **Sarasota Manatee MPO**
- **Identified stakeholders**
- **Outlined an ITS framework for the logical and physical architectural of regional ATMS**
- **Included high level design and implementation plan**
- **2004 FDOT Concept of Operations**



Background

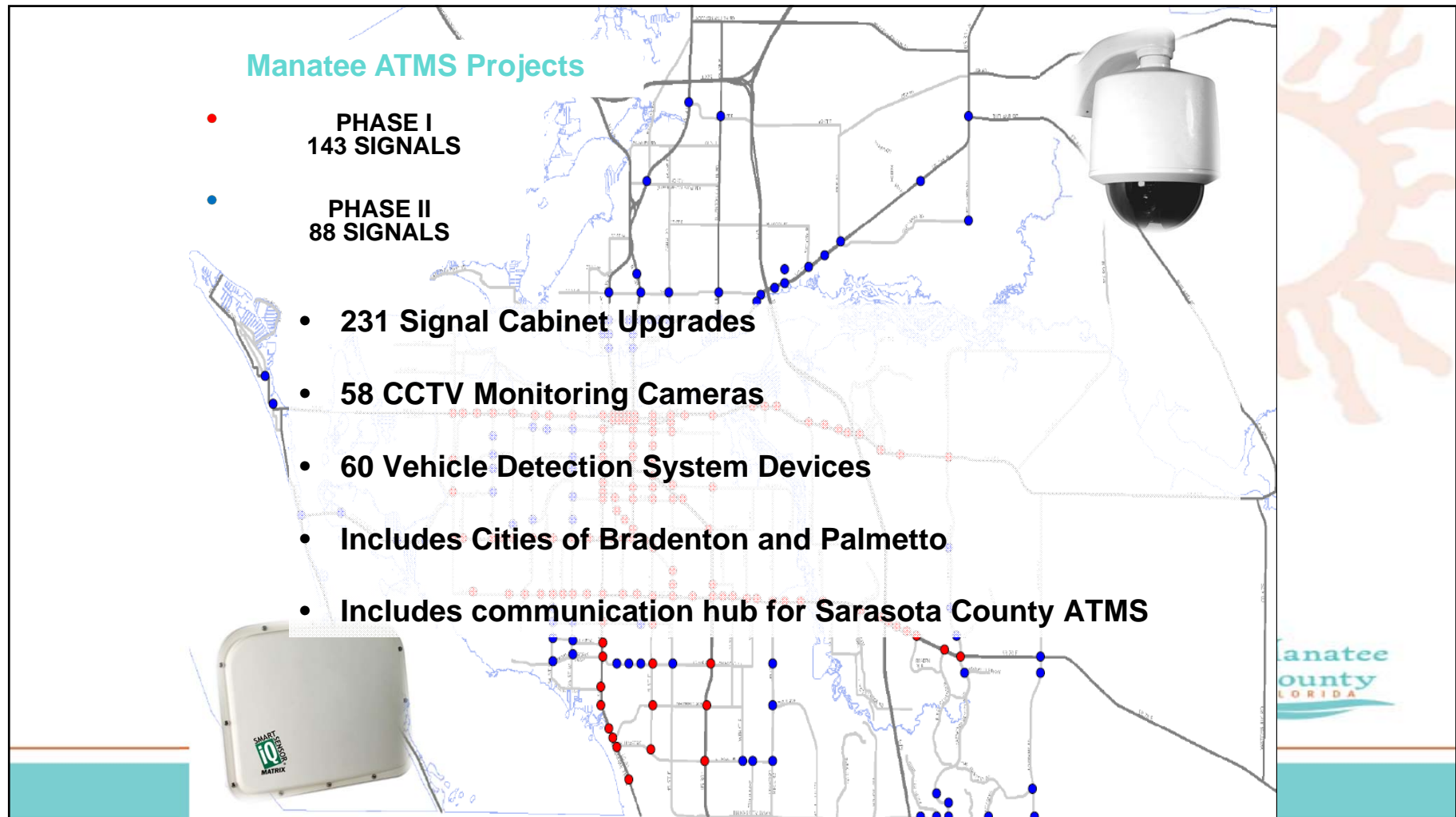
- **2005 Interlocal Agreement - Unified Regional Intelligent Transportation System**
- **2011 – 2014: Operational Agreements**
- **FDOT's Freeway Management System on I-75 (2014)**



Mission Statement

“The Sarasota-Manatee Traffic Management Center will provide an enabling environment for all stakeholders to collaborate and share information resulting in a combined, systematic approach to traffic operations and traffic incident response”.





Controller Cabinet



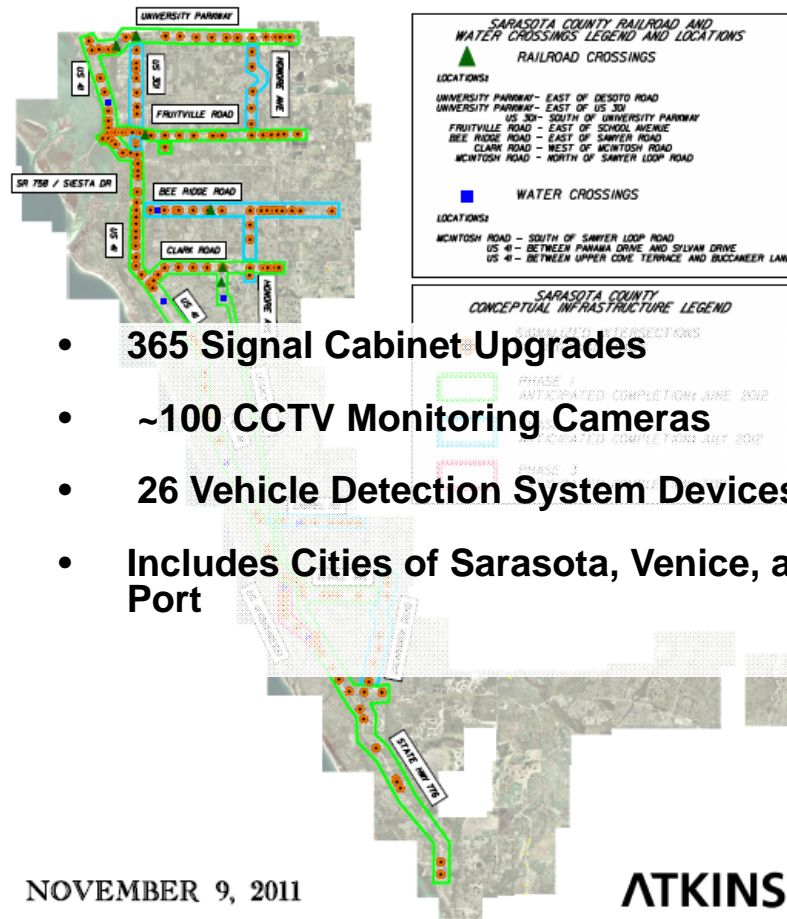
Old Control Room



RTMC Control Room



SARASOTA COUNTY ATMS PLANNED PHASE DEPLOYMENT MAP



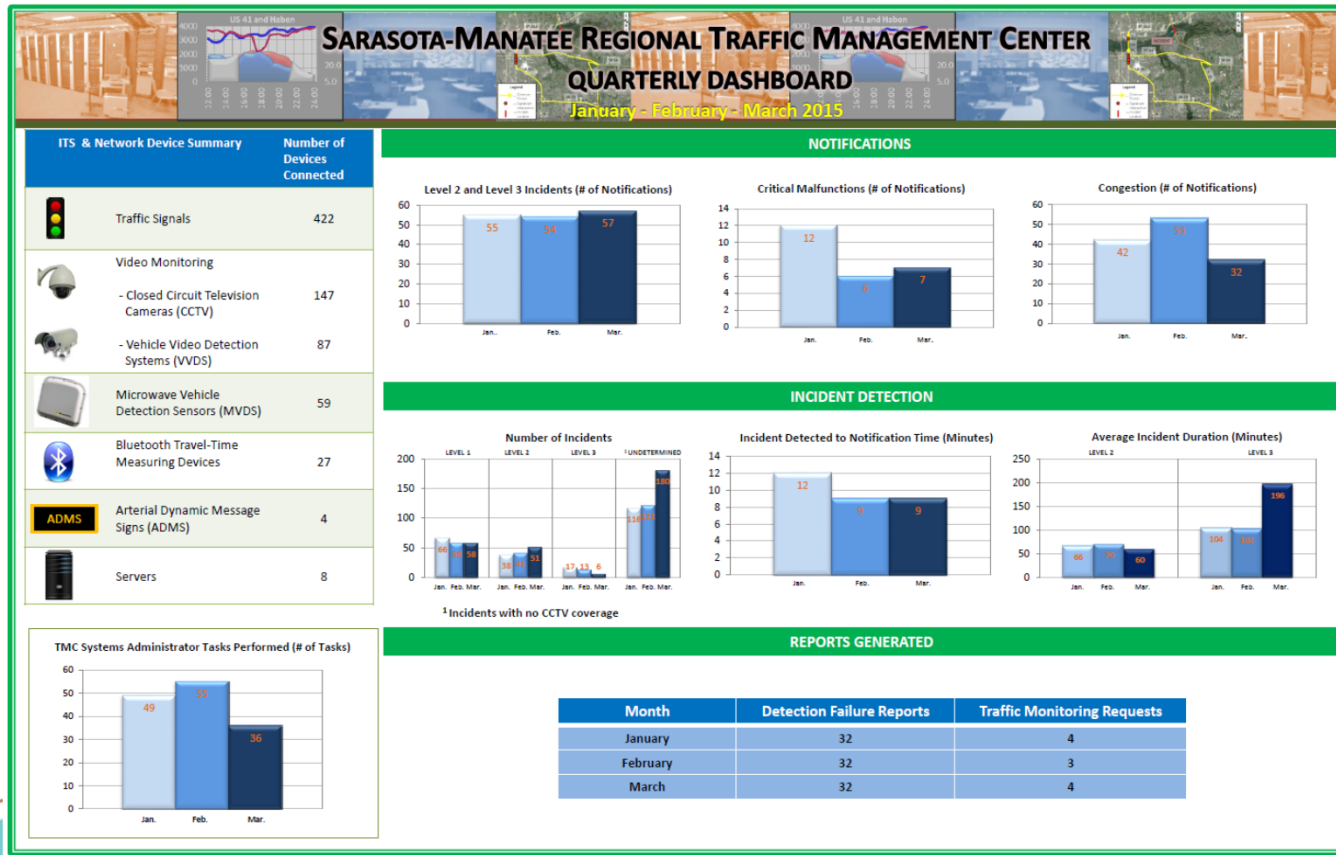
NOVEMBER 9, 2011

ATKINS

RTMC Operations

- **Staff:**
 - RTMC Manager
 - 4 Operators
 - System Administrators
- **Hours of Operation:**
 - Monday through Friday – 6 AM to 7 PM (2 Shifts)
- **RTMC Operations Manual:**
 - Based on FHWA's Manual (FHWA-HOP-06-015)
 - Adopted by the ITSMT
 - Topics Include – Daily Operations, Incident Management and Stakeholder Notifications Procedures, Performance Measures

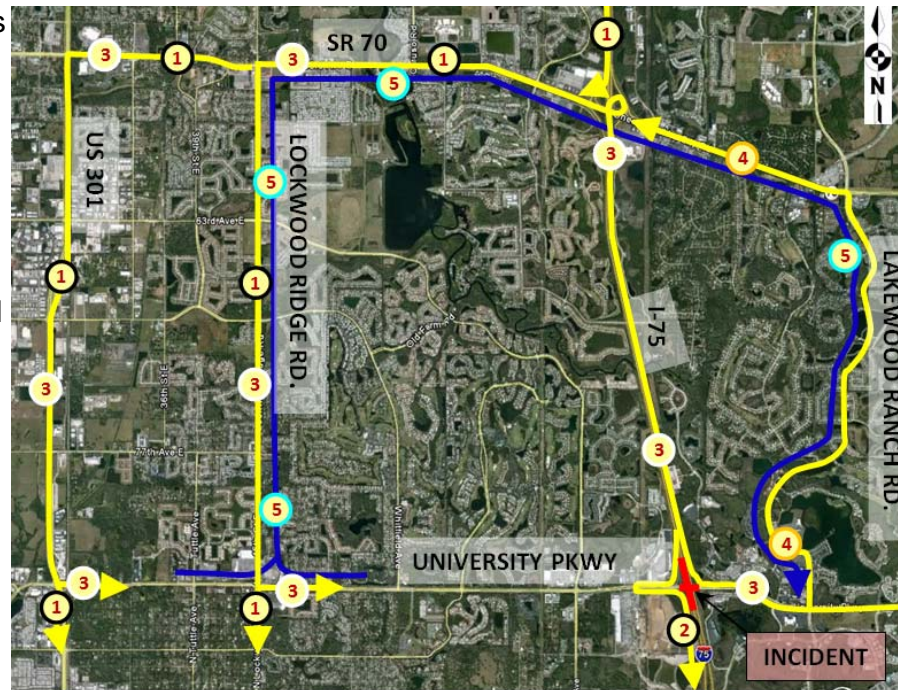
RTMC Quarterly Dashboard



Incident Management

I-75/University Parkway Interchange – January 27-28, 2014

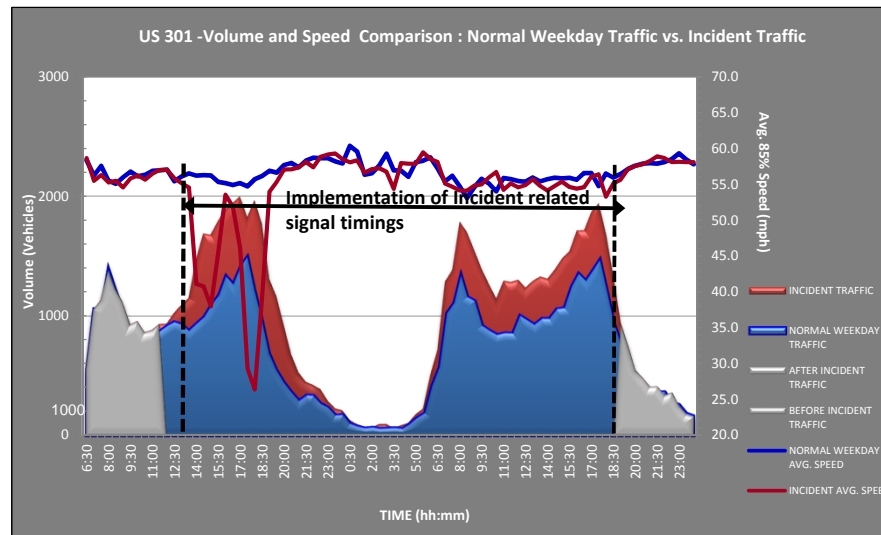
- Closure of I-75 SB lanes at Univ. Pkwy interchange
- Impacted corridors:
SR 70, US 301, Lockwood Ridge Road, Lakewood Ranch Road and University Parkway
- Incident Duration:
Approx. 36 hours
- Signal timing changes implemented:
20 intersections



Incident Management

I-75/University Parkway Interchange – January 27-28, 2014

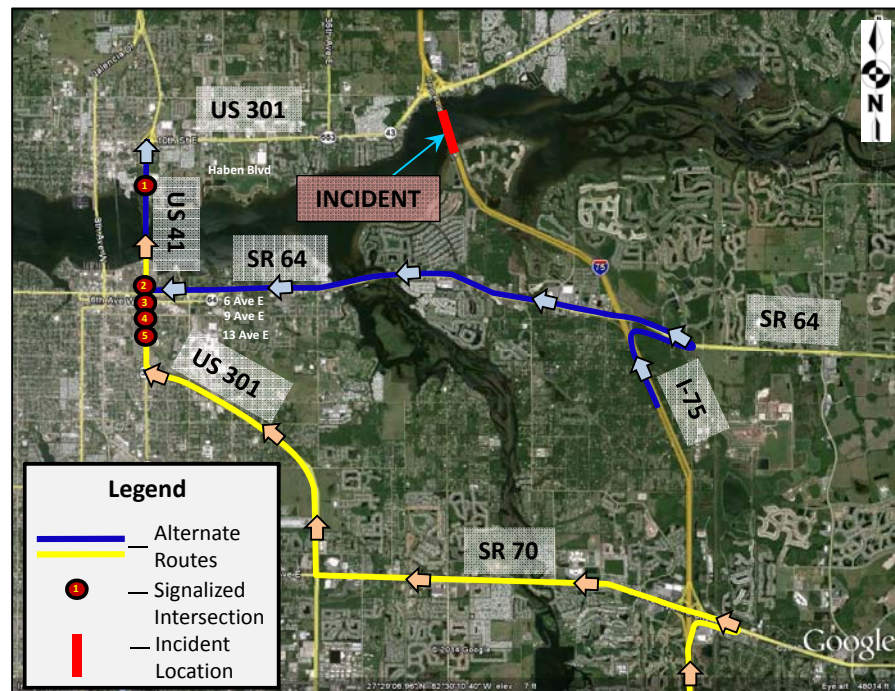
- Overall Average Speed of the vehicles improved



Incident Management

I-75 at J.D. Young Bridge - August 22, 2014

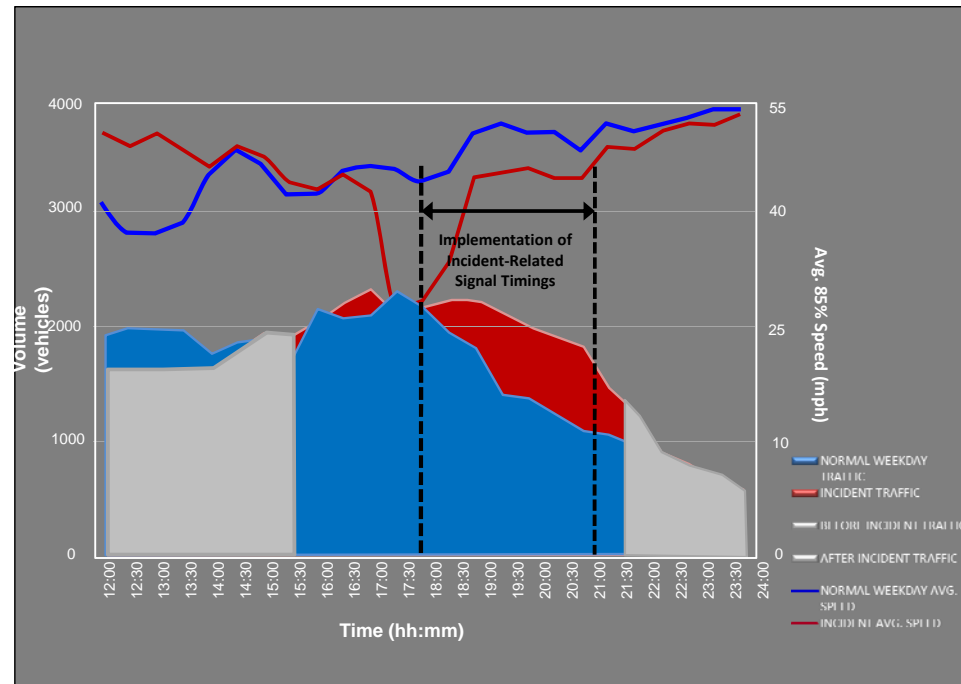
- Closure of I-75 NB lanes
- Impacted corridors:
SR 64, SR 70, US 301 and 1 Street (US 41/US 301) in Bradenton
- Signal timing changes :
At 5 intersections
- Incident Duration:
Approx. 5 hours



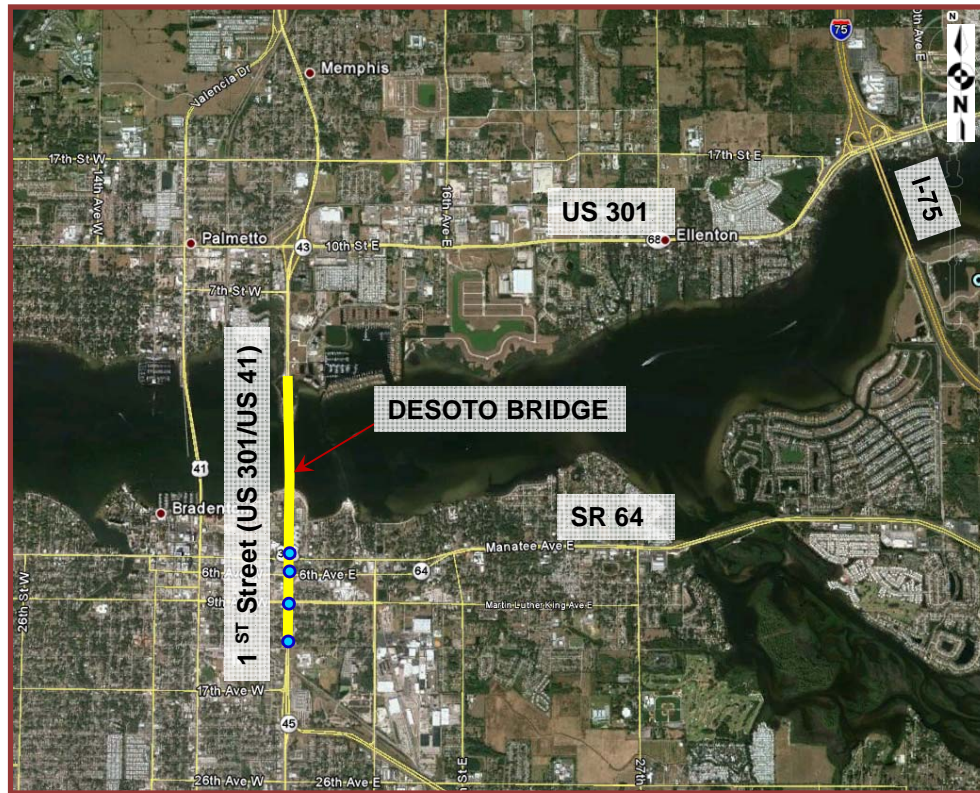
Incident Management

I-75 at J.D. Young Bridge - August 22, 2014

- Overall Average Speed of the vehicles improved
- Accommodated additional 5,400 vehicles in the 3-hour period



Congestion Management DeSoto Bridge (US 301/US 41)

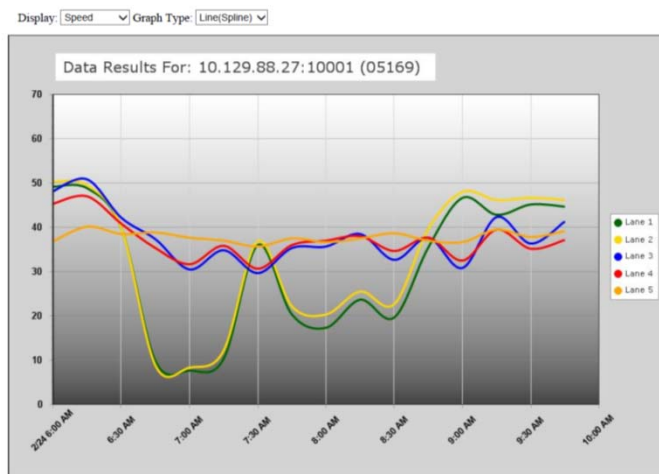


Congestion Management

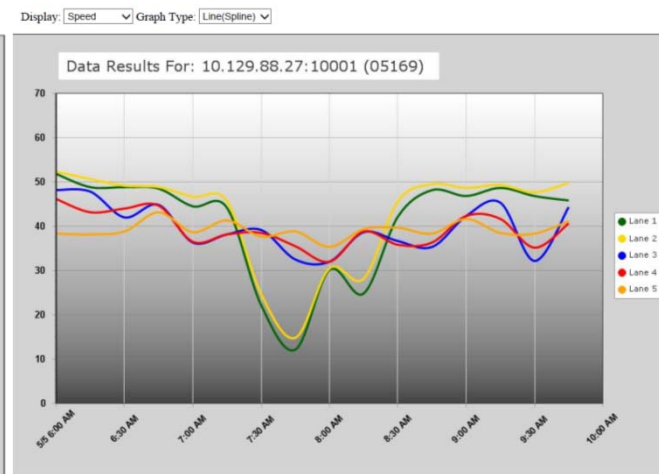
DeSoto Bridge (US 301/US 41)

(Weekday AM)

Speed Profile Before



Speed Profile After

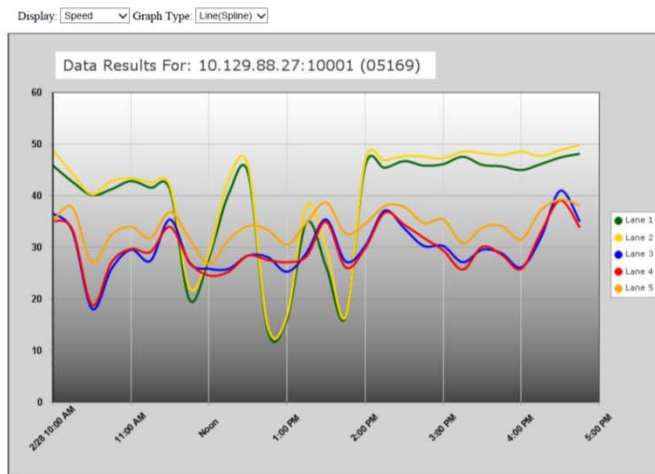


| BEFORE Implementation (Weekday) | | | | | AFTER Implementation (Weekday) | | | | | Summary | | |
|---------------------------------|--------------|--------------|------------------|--|--------------------------------|--------------|--------------|------------------|--|--------------|------------------|--|
| Date/Day | Time | Volume (veh) | Avg. Speed (mph) | Southbound Congestion Recovery Time (min.) | Date/Day | Time | Volume (veh) | Avg. Speed (mph) | Southbound Congestion Recovery Time (min.) | Volume (veh) | Avg. Speed (mph) | Southbound Congestion Recovery Time (shorter/longer) |
| 2/24/2015 (TUE) | 6 AM - 10 AM | 10,709 | 34.2 | 135 | 5/05/2015 (TUE) | 6 AM - 10 AM | 11,202 | 40.8 | 60 | +4.60% | +19.30% | 56% shorter |

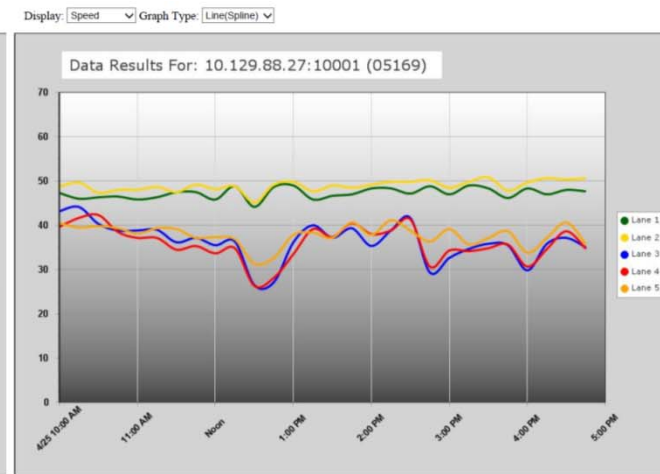
Congestion Management

DeSoto Bridge (US 301/US 41) (Weekend)

Speed Profile Before



Speed Profile After



| BEFORE Implementation (Weekend) | | | | | AFTER Implementation (Weekend) | | | | | Summary | | |
|---------------------------------|--------------|--------------|------------------|--|--------------------------------|--------------|--------------|------------------|--|--------------|------------------|--|
| Date/Day | Time | Volume (veh) | Avg. Speed (mph) | Southbound Congestion Recovery Time (min.) | Date/Day | Time | Volume (veh) | Avg. Speed (mph) | Southbound Congestion Recovery Time (min.) | Volume (veh) | Avg. Speed (mph) | Southbound Congestion Recovery Time (shorter/longer) |
| 2/28/2015 (SAT) | 10 AM - 5 PM | 21,220 | 34.1 | 135 | 4/25/2015 (SAT) | 10 AM - 5 PM | 21,426 | 41.6 | 75 | +0.97% | +22.00% | +44% shorter |

Congestion/Incident Management Cost Savings

Estimated Savings Due to Reduction In Delay:

Year 2014 - \$999,861

Year 2015 - \$976,890

What's Next?

- Traveler Information Website
- Bluetooth Travel Time Measurement Devices – Countywide
- Potential Extended Services and Hours of Operation
- University Parkway Adaptive Signal Control – Pilot Project
- SR 70 Adaptive Signal Control – FHWA Grant
- Manatee County 22 “Remote” Traffic Signals Without Fiber
- Additional Cameras and Detection System Devices

Thank You

Vishal S. Kakkad, P.E., PTOE

County Traffic Engineer
Public Works Department





KEY DIMENSIONS OF CAPABILITY

1. Business Processes
2. Systems and Technology
3. Performance Measurement
4. Culture
5. Organization and workforce
6. **Collaboration** – including relationships with public safety agencies, local governments, MPOs, and the private sector

MASTER PLAN OVERVIEW

- Purpose
 - Create an overarching ITS Master Plan for the Region
 - Create a consensus on what items need to be integrated between agencies
 - Determine what standards need to be met (security, maintenance, staffing, etc.)
 - Develop an overall assessment
 - What is in place and goals for the future
 - What are the road blocks and how do we overcome them
 - High level goals the region should be working towards
 - Types of investment that could work toward these goals
 - Conform with National, Statewide and Regional Architecture

REGIONAL COLLABORATION

- ITS Master Plan Task 3 – Staffing Resources
 - Reviewed existing staffing levels
 - Reviewed ideal staffing levels
 - Analyzed the current voids
 - Analyzed future growth and expansion of the ITS program
 - Determined staffing needs
- Looked at best ways to fill some positions with regional staffing resources

EXISTING STAFFING

- Metric has gathered information from the locals regarding existing staffing levels
- They will be reaching out for concurrence on what has been documented thus far - please review and update accordingly
- Key component of the master plan to help determine what staffing levels are needed (OT, contracts, etc)

IT STAFFING RESOURCES

- Based on current analysis, we determined there might be a need for regional resources, specifically in IT positions
- Potential regionally shared positions
 - Network Manager/Network Architect
 - Network Technician
 - Network Server Administrator/DB Admin
 - SunGuide Database Admin/Software Analyst/Software Developer

BENEFITS TO SHARED RESOURCES

- All agencies do not have a need for full time network staff
- Networking staff is costly, and this would be able to be absorbed by multiple agencies
- Highly qualified positions that could help create and maintain stable and reliable networks

PROPOSAL TO LOCAL AGENCIES

- FDOT would manage the contract
- FDOT would execute an LFA with any local agency that wants to participate
 - Analyzed cost by three different methods
 - Population
 - Cost would be split based on population
 - Equal Share
 - All agencies split equally
 - Interconnected Signals and End Devices (E.D.)
 - Due to majority of work being at the switch level, we used a calculation that places more weight on the number of interconnected signals (switch location)
 - Signal and End Device Number = $3(I.S.) + 1(E.D.)$

COST OF STAFFING

| Statewide Contract Median Loaded Rate | | |
|--|--------|------------|
| Position | Hourly | Annualized |
| Network Technician (advanced) (Network Manager/Network Architect) | \$64 | \$133,120 |
| State Term Contract Job # 8610 Technical Product Support Analyst (Network Technician) | \$67 | \$139,360 |
| State Term Contract Job #6810 Security Analyst (Advanced) (Network Server Admin/Security Admin) | \$97 | \$201,760 |
| State Term Contract Job #1240 Systems Analyst (Intermediate) (SunGuide Database Admin/Software) | \$87 | \$180,960 |
| | Total | \$655,200 |

FUNDING

| | Interconnected Signal Quantity | ITS End Devices* | Weighted Number of Signals and Devices = 3(I.S.) + 1(E.D.) | Cost based on weighted number of Signals and Devices |
|--------------------------|-----------------------------------|---------------------|--|--|
| Brevard County | 149 | 180 | 627 | \$95,983.74 |
| Lake County | 74 | 14 | 236 | \$36,127.85 |
| Marion County | 46 | 110 | 248 | \$37,964.86 |
| Osceola County | 86 | 81 | 339 | \$51,895.51 |
| Volusia County | 187 | 35 | 596 | \$91,238.13 |
| City of Maitland | 10 | 0 | 30 | \$4,592.52 |
| City of Melbourne | 67 | 9 | 210 | \$32,147.66 |
| City of Ocala | 126 | 44 | 422 | \$64,601.50 |
| City of Orlando | 460 | 192 | 1572 | \$240,648.22 |
| Total | 1205 | 665 | 4280 | \$655,200.00 |

*ITS End Devices include closed-circuit television (CCTV) cameras, dynamic message signs (DMS), microwave vehicle detectors (MVDS), Automated Vehicle Identification (AVI) readers and Bluetooth devices for stakeholders that operate and maintain roadway facilities. This summary does not include in-cabinet ITS devices such as: switches, malfunction monitoring units (MMU), or uninterruptible power supplies (UPS). Also, the ITS end device summary does not include cameras or MVDS that used for detection instead of loops at traffic signal locations.

FUNDING RECOMMENDATION

- After reviewing the different options, the Department recommends using the cost per weighted number of interconnected signals and ITS end devices as it would most accurately depict the potential utilization per agency.
- The Department would annually review the utilization per agency and try to align the annual cost accordingly.
- Note that local agencies will have option to opt in or out, and actual cost will be determined when we know participants.



Contact Information:

Jessica Renfrow

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TSM&O Consortium Meeting

MEETING AGENDA

D5 Urban Office
133 S. Semoran Blvd.
Orlando, FL
Lake Apopka B Conference Room

JUNE 2, 2016; 10:00 AM-12:00 PM

- 1) INTRODUCTIONS AND COLLABORATION DIMENSION OVERVIEW
 - Melissa Gross, VHB
- 2) STATE OF MANATEE COUNTY'S ATMS: PAST, PRESENT, AND FUTURE
 - Vishal Kakkad; County Traffic Engineer, Manatee County
- 3) D5 ITS MASTER PLAN – Resource & Staff Sharing
 - Jessica Renfrow, Metric
- 4) TSM&O – PROJECT UPDATE
 - Tushar Patel, D5 ITS



TSM&O Consortium Meeting

June 2, 2016

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