TSM&O CONSORTIUM MEETING SUMMARY

Meeting Date:	July 28, 2016 (Thursday)	**Time**: 10:0 AM – 12:00 PM

Subject: TSM&O Consortium Meeting

Meeting Location: FDOT's Orlando Office
133 S. Semoran Blvd., Orlando, FL
Lake Apopka B Conference Room

I. OVERVIEW:

The purpose of this recurring meeting summary is to provide an opportunity for District 5 FDOT staff and regional agency partners to collaborate on the state of the TSM&O Program in District 5 and ongoing efforts.

The meeting was commenced with a brief introduction from David Cooke, FDOT D5 Planning Manager.

II. BUSINESS PROCESS – EXISTING DISTRICT PRACTICES

Melissa Gross presented slides on the following topics relating to current practices within District Five:

- Capability Maturity Framework (CMF)
  - Business Process – Current Efforts – A brief overview of current efforts within the District was provided, including the TSM&O Guidebook, TSM&O Implementation Plan, ITS Master Plans throughout the District, performance measures, partners aligned, and funding programs identified through grant applications.
  - See attached presentation
- 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

III. CURRENT INITIATIVES

Jeremy Dilmore presented an overview of current initiatives within D5, including:

- ATCMTD Status (overview of FAST Act Grant Application)
  - D5 proposed three ATCMTD Programs
    - Ped**Safe**
    - Green**Way**
    - Sun**Store**
  - Expect a decision before October

- LYNX MOD Efforts (overview of MOD Grant Application)
  - The PINEAPPLE Project seeks to gain new insights and understanding regarding the demand for paratransit, operating conditions and user experience by combining data from multiple sources into a single data lake, in conjunction with an advanced discovery tool
  - Expect a decision by December, with the reward to occur the following year
- Statewide Arterial Management Program (STAMP)
  - Led by FDOT Central Office, with focus on arterial operations
  - This program will likely move forward regardless of funding outcome, based on the results of previous and ongoing I-75 corridor studies
  - For further information on this group, contact Jeremy Dilmore
- Routes of Significance (RoS)
  - Joint venture between FDOT and municipal partner agencies to identify criteria and comply with Real-Time System Management Information Program requirements
  - FDOT to identify Routes of Significance by November 8, 2016
  - RoS is currently not tied to funding; there is potential for this in the future
- DISCUSSION / Q&A
  - Statewide Arterial Management Program
    - Will local / regional partners be able to participate in prioritizing corridors?
      - The deployment is approximately 50% complete
      - The process for prioritization is still unknown at this time
      - The review process has not been discussed, though it is expected that D5 will have a role in the process
  - Routes of Significance
    - Is this related to STAMP?
      - It is expected that the two programs will be closely related. Central Office is not sure how the two programs will be partnered together, though it is understood that deployment (STAMP) should be based on need (RoS)

IV.   ITS MASTER PLAN UPDATES

- Richard Baier, Sumter County Public Works Director, presented an over of Sumter County's ITS Plan.
  - The study focuses on potential ITS implementation strategies along many state and national facilities, including the US 27/US 441 corridor, a major facility linking Sumter, Lake, and Marion counties
    - The three counties are coordinating with one another regarding the traffic systems along the US 27/US 441 corridor
  - The study will include ATMS features, ITS equipment and communication layout in order to create a more standardized and connected County signalization system
  - The study began January 15, 2016, and will conclude January 2017
- Bob Keeth, Senior Transportation Planner for the River to Sea TPO (R2CTPO), presented an overview of the R2CTPO ITS Plan. A handout was also provided to participants.
  - Phase 1 will include:
    - Development of the ITS Vision, Goals and Objectives
    - Inventory and evaluation of existing ITS elements and relationships

- ▪ Identification of transportation-related issues that could potentially benefit from ITS
    - o Phase 2 will likely commence in Fall 2016; however, additional funding needed
    - o R2CTPO incorporated boxed funds, based on MetroPlan's similar approach, in order to allow the R2CTPO to set aside funds for ITS development and implementation
    - o See attached handout (provided at the Consortium meeting) for additional details
    - o Also attached is the R2CTPO Board Retreat presentation on emerging technologies (February 2016)
- • Eric Hill, MetroPlan Orlando's Transportation Systems Management & Operations Director, presented an overview of the MetroPlan Orlando ITS Plan
    - o MetroPlan established a steering committee comprised of technical personnel from the local jurisdictions to guide the ITS Master Plan
    - o Though Board Members are very supportive of ITS strategies and operations, MetroPlan staff try to manage expectations, understanding there may be obstacles and shortcomings to existing ITS technologies and processes
    - o MetroPlan identified several challenges, including jurisdictional boundaries, system integration, sharing of information, and funding
    - o MetroPlan staff have emphasized to their Board and other stakeholders that capital funding for ITS programs is typically easier to obtain than maintenance and operations funding, though both elements are required in order to produce an effective ITS framework
    - o Mr. Hill also identified the need for further education regarding open-source data and its utilization for MetroPlan staff
    - o The MetroPlan Orlando ITS Master Plan is approximately 50% complete
- • DISCUSSION / Q&A
    - o What is the difference between open-source applications and open data?
        - ▪ Open data typically involves public agencies making data available to the public for some sort of public use
            - • In New York, the public used the available data to either avoid or fix known potholes
            - • After the data is released to a public forum, the public agency has no further involvement with the data's use
        - ▪ Open-source applications are made available within public forums in sections or modules
            - • Other entities will take modules, apply their own modifications as needed, and post the modified application back onto the public forum
            - • Open-source applications will be less expensive than custom-built applications, but entities must be sure to analyze the application to ensure it will work correctly within the context of the entity's needs and system
            - • FDOT is interested in a restricted public forum, that would be open to other state DOTs, FHWA, and other select agencies, so that the appropriate level of quality control is undertaken
    - o What is FDOT's commitment to this open-source concept?

- FDOT has certain obstacles to overcome
  - When FDOT purchases something, the Department must be the sole owner
  - For example, when FDOT purchased entry into the Maryland RITIS environment, FDOT had to purchase its own server within the environment where it could store data
- Is there a contact that local agencies can reach out to regarding open-source applications and open data sharing?
  - Contact Jeremy Dilmore for more information
- If an agency releases data, shouldn't the agency be given data in return?
  - FDOT D5 does not want to give away all of its information for free
    - D5 is interested in a mutual exchange of data that can help both parties
    - D5 has been working to navigate this problem for two to three years with its department
- Data will be co-mingled between local agencies and FDOT
  - This is a critical issue that will require the public stakeholders' input
- Florida Statute requires existing record be provided to the requestor in a reasonable timeframe
  - General documents and records allow for days / weeks as a reasonable timeframe; however, for FDOT's traffic data, reasonable timeframe is generally understood to mean NOW (within seconds)
- Is the objective to get some value out of the data generated by the local and regional entities?
  - The primary objective is to not spend unnecessary funds on a product only to provide it to a third party for free, who will then gain significant profit off of that data
  - Data is as much a significant part of the infrastructure as bridges and roads
    - We should be able to get some value-return from the data
- FDOT D5 is interested in bringing together a group to discuss the issue of data sharing
- Entities are spending millions of dollars on data gathering; that data could then be used by another entity to create jobs in entirely different regions, without providing any value-return to the original entity who paid for the data
- Participants agreed that data sharing is a complicated issue that will need to be discussed and investigated further

V. FDOT D5 ITS MASTER PLAN UPDATE

Dale Cody, Project Manager with Metric Engineering, presented an update on the FDOT D5 ITS Master Plan. Topics discussed include:

- Status of the ITS Master Plan
  - Task 1 – Document Existing Plans (Completed)
  - Task 2 – Document Deployments (Completed)
  - Task 3 – Identify Staffing Guidance (Completed)
  - Task 4 – Applicable ITS Strategies (Completed)
  - Task 5 – Applicable ITS Strategies for Connected Vehicle (Completed)

- o   Task 6 – ITS Standards (Completed)
- o   Task 7 – Configuration Assessment and Functions – TSM&O (Ongoing)
    - ▪   The ITS Master Plan is nearing completion
- •   <u>FDOT provided stakeholders with an IT Memo that explained the mandatory requirements inherent in the Memorandum of Understanding (MOU)</u>
    - o   <u>Please ensure your agency's IT department has been able to review this memo, as the MOU agreement is forthcoming</u>
- •   Mr. Cody explained the commitments associated with the MOU, as well as whether they are mandatory, guided suggestions, or not required. These are not set in stone and can change through the input of TSM&O Consortium participants.
    - o   Proposed mandatory regional standards were discussed with regard to Communications, Security, Data, GPS Clock use, No. 2 key use, as well as leveraging real-time regional data with third parties to obtain data from the third parties in exchange
    - o   There were additional recommended regional standards discussed as well
- •   DISCUSSION / Q&A
    - o   Through discussion and agreement amongst the participants, implementation timetables for several mandatory requirements were determined[1]:
        - ▪   Communications   2 years
        - ▪   Security   2 years
        - ▪   Data   TBD
        - ▪   GPS Clock Use   1 year
        - ▪   No No. 2 Key Use   TBD, Question on Funding
    - o   Concerns were raised over the adoption of Hub and Spoke Topology
        - ▪   The Hub and Spoke Topology is an inter-agency – not an intra-agency – technology
            - •   FDOT is using Hub and Spoke to pull data from the local agencies
        - ▪   FDOT will be responsible for many of the proposed regional standards within the Communications Element of the MOU agreement
        - ▪   Only agencies that are implementing ITS systems will be affected by the commitments of the MOU
    - o   Will there be different timetables for each requirement?
        - ▪   Yes. FDOT is accepting feedback so the timeline that is created does not impose unattainable goals
    - o   Would an agency be able to release data independent of FDOT for value?
        - ▪   No. FDOT's goal is to create a storehouse that will release the data, so that the different agencies are not pricing their data against one another
        - ▪   If the Florida Sunshine Law is invoked, however, the agency will be able to release the data
    - o   How many GPS clocks will there be?
        - ▪   One common GPS clock.
            - •   A robust network will be necessary to ensure the connection is maintained throughout the process

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[1] Please note these timelines can be adjusted based on the feedback local agencies receive from their IT department.

- How accurate do the GPS clocks have to be?
  - The lag-time should not be significant between the different agencies
  - FDOT does not foresee accuracy being a problem
- No. 2 keys are no longer permitted as a security measure for cabinets. How will this affect consultant contracts?
  - Exceptions may need to be made in certain circumstances
  - Participants agreed that only COM-ready cabinets would require the removal of No. 2 keys
    - If the cabinet will not connect to the FDOT storehouse, then it is not a security risk and does not need to be secured

VI.   ATTACHMENTS
- A – Sign in sheets
- B – Presentation Slides
- C – Handout
- D – Meeting agenda

<div align="center">END OF SUMMARY</div>

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

TSM&O Consortium Meeting
July 28, 2016

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Welcome to the TSM&O Consortium Meeting
July 28, 2016

Transportation Systems Management & Operations

Meeting Agenda

1. Introduction
   - **David Cooke,** D5 Planning

2. Business Process – Existing District Practices
   - **Melissa Gross**, VHB

3. FDOT Current Initiatives Overview
   - **Jeremy Dilmore,** D5 ITS

4. ITS Master Plan Update – Sumter County
   - **Richard Baier,** Sumter County Public Works Director

5. ITS Master Plan Update – Rive to Sea TPO
   - **Robert Keeth**, River to Sea Senior Planner

6. ITS Master Plan Update – MetroPlan Orlando
   - **Eric Hill,** MetroPlan TSM&O Director

7. FDOT Master Plan Update
   - **Dale Cody,** Metric Project Manager

Transportation Systems Management & Operations

Business Process – Relevant Current D5 Initiatives

ATCMTD Grant Application

MOD Grant Application

STAMP Group Activities

Routes of Significance

Transportation Systems Management & Operations

Capability Maturity Framework (CMF)

Business Process – Current Efforts:

- Business Processes documented (Planning for TSM&O Guidebook)

- Procedures and Policies Outlined (ITS Master Plans throughout the District)

- Performance measured (Routes of Significances Identification)

- Organization/partners aligned (Collaboration through the TSM&O Consortium)

- Funding program identified (Grant Applications)

Culture

Collaboration

Business Process

Organization and Workforce

Performance Measurement

Systems and Technology
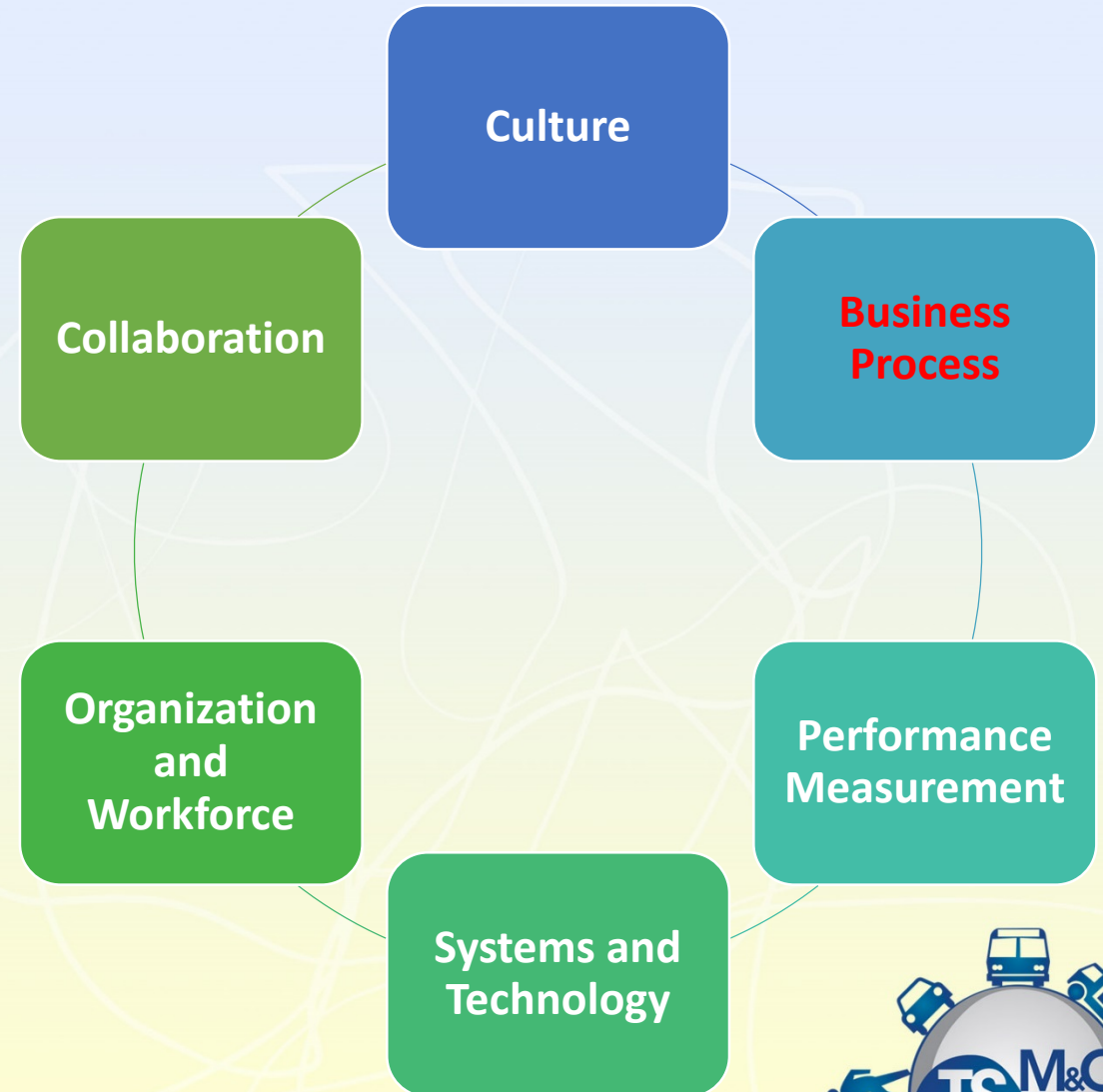
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TSM&O in D5 Today

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

D5 Current Initiatives Overview

ATCMTD Grant Application
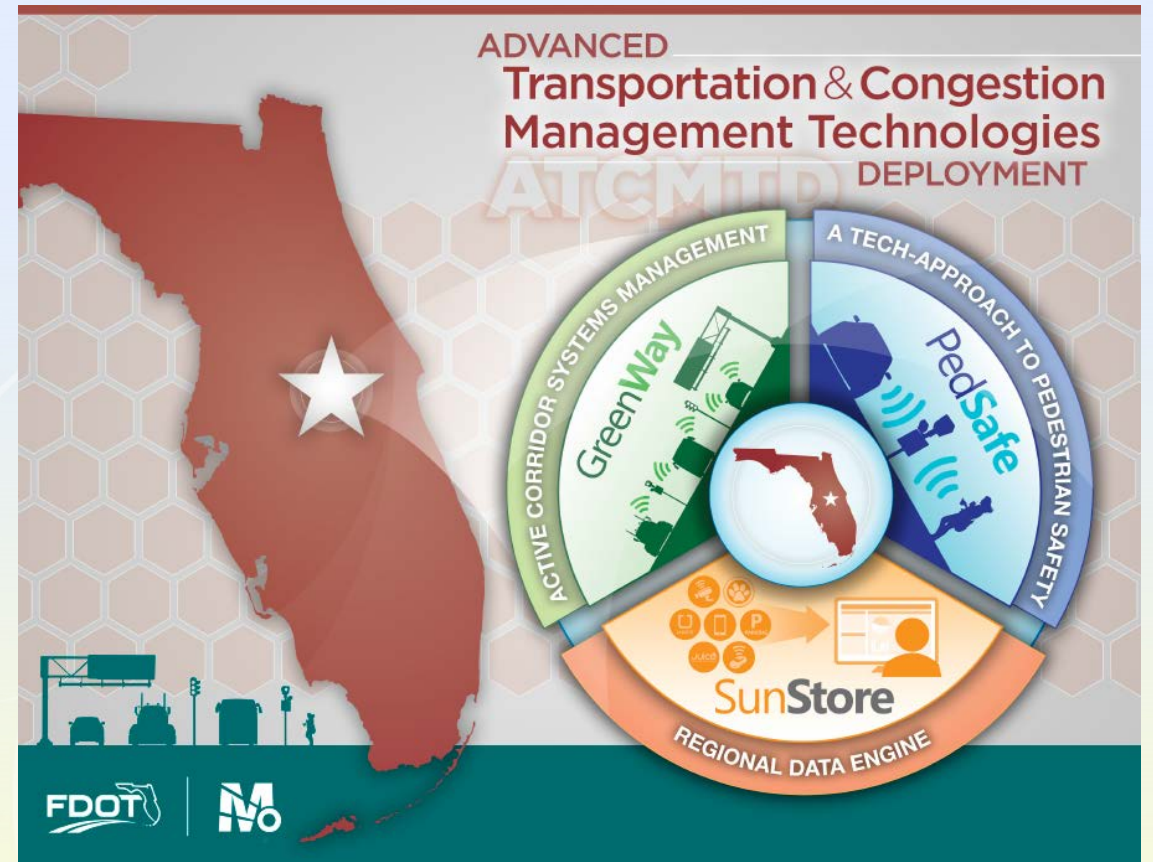
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ATCMTD Status

Advanced Transportation & Congestion Management Technologies Deployment

- Submitted to FHWA on June 24th

- FAST Act Grant awards announcement – October 2016

- 3 Proposed technology solutions

Transportation Systems Management & Operations

ATCMTD Proposed Programs

1. Ped**Safe**
   - Pedestrian / Bicycle collision avoidance system

2. Green**Way**
   - Active traffic management system

3. Sun**Store**
   - Unified transportation data system

Transportation Systems Management & Operations

- **CV Technology**
  - Adjust SPaT based on pedestrian movement
  - Alerts to OBUs on outfitted buses

- **Collision Detection**
  - Detect location of pedestrians
  - Intersection detection for during phase changes

- **Smart Phone-based**
  - Audible alerts

- **Compatibility**
  - Ready for DSRC to smart phones for reduced latency, position, and alert applications
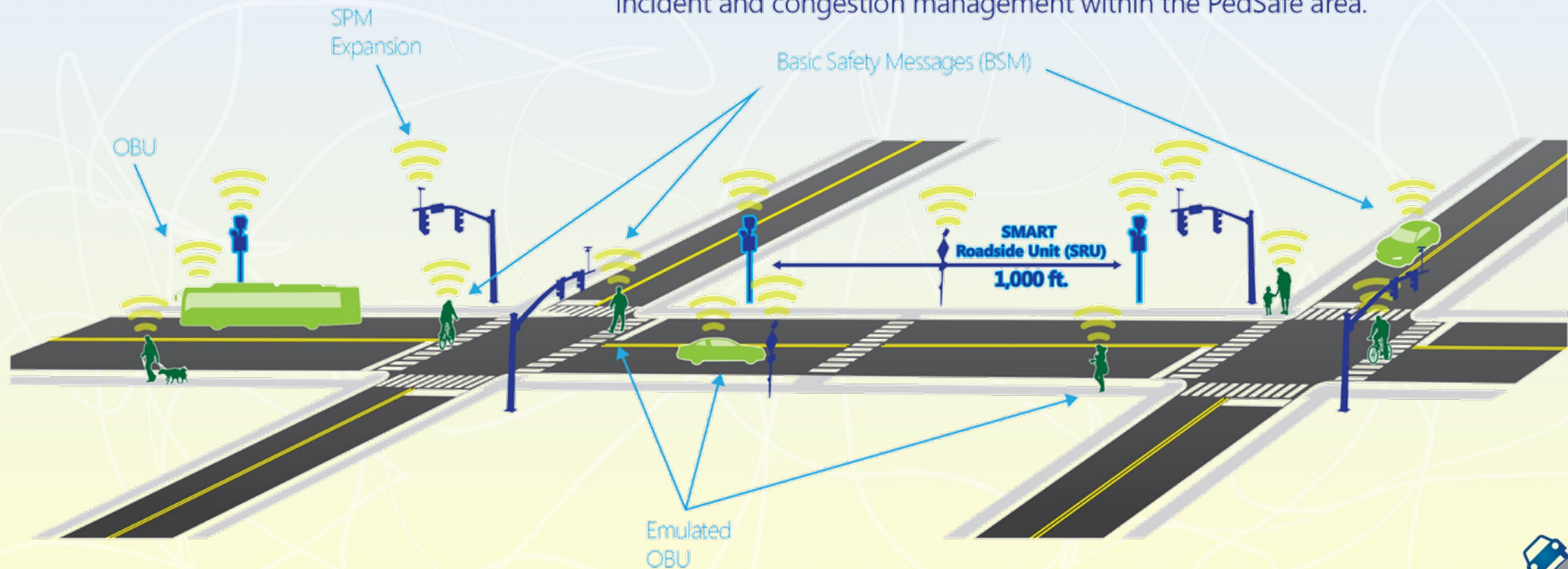 - Ready for OBUs on product vehicles

PedSafe

Transportation Systems Management & Operations

PedSafe
A Tech-Approach to Pedestrian Safety

Introduction: The proposed PedSafe program is an innovative pedestrian and bicycle collision avoidance system that uses Connected Vehicle (CV) technologies in conjunction with current Pedestrian Collision Avoidance Systems to minimize or eliminate pedestrian and bicycle crashes at Florida's high-risk intersections. Utilizing CV technology, it not only addresses pedestrians within the crosswalk area, but also within hundreds of feet from the intersection, tying into the existing traffic signal system to capture phasing changes and detector actuations at each intersection. In addition, it provides incident and congestion management within the PedSafe area.

SPM Expansion

Basic Safety Messages (BSM)

OBU

SMART
Roadside Unit (SRU)
1,000 ft.

Emulated OBU

FDOT

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TS M&O

- **Signal Performance Metrics**
  - ➤ Expand to over 1,500 signals
  - ➤ Synchronous Data Link Control
  - ➤ Enhance Purdue Software
- **Advance Sensor Technology**
  - ➤ Real-time data collection
- **New Analytics and Visualization**
  - ➤ V/c ratios by cycle
  - ➤ Timing patterns based on deterministic algorithms
- **ICM**
  - ➤ Real-time simulation
  - ➤ Timing plans and alt routing
  - ➤ Incident response
- **Positive Train Control**
  - ➤ Flush Plans at SunRail crossings
- **Smart Parking**
  - ➤ Monitor and sign available parking
- **Conditional TSP**
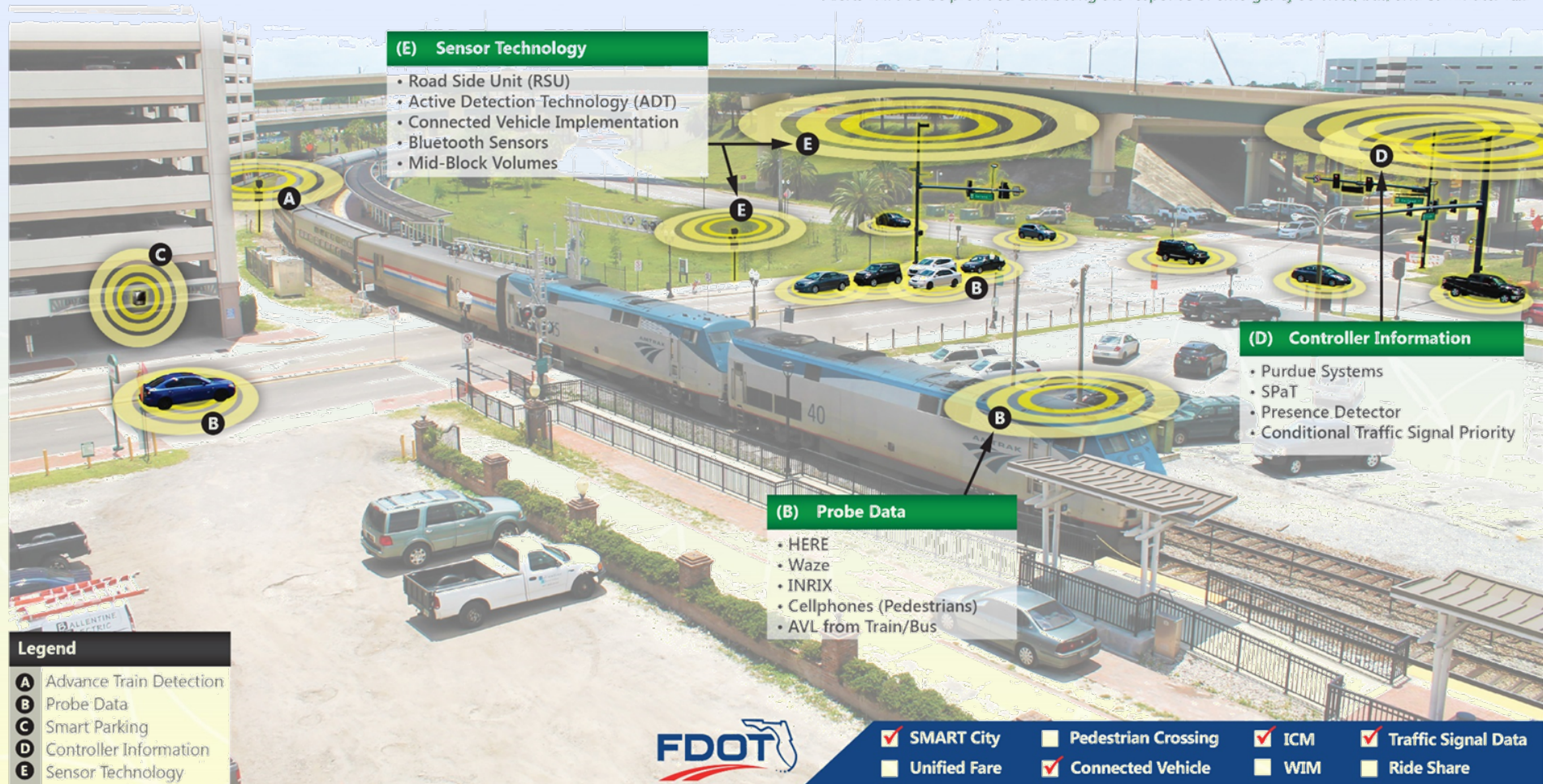 - ➤ TSP for SunRail connecting routes

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GreenWay
Active Corridor Systems Management

Introduction: The proposed GreenWay program incorporates Central Florida's Active Detection Technology (ADT) and elements of Orlando's Smart City initiative to improve the multimodal movement of people and goods. The best available information from each of the 1500+ traffic signals will be fused, normalized and then processed by deterministic microsimulation models (freeway and arterial) and a predictive stochastic mesoscopic model then presented in a consumable format to Signal Timing Engineers (FDOT and Local Agency) to use to actively manage traffic signal systems. Alerts will also be provided connecting the response of emergency services, bus, and commuter rail.

(E)   Sensor Technology
- Road Side Unit (RSU)
- Active Detection Technology (ADT)
- Connected Vehicle Implementation
- Bluetooth Sensors
- Mid-Block Volumes

(D)   Controller Information
- Purdue Systems
- SPaT
- Presence Detector
- Conditional Traffic Signal Priority

(B)   Probe Data
- HERE
- Waze
- INRIX
- Cellphones (Pedestrians)
- AVL from Train/Bus

Legend
A Advance Train Detection
B Probe Data
C Smart Parking
D Controller Information
E Sensor Technology

| ☑ SMART City | ☐ Pedestrian Crossing | ☑ ICM | ☑ Traffic Signal Data |
| ☐ Unified Fare | ☑ Connected Vehicle | ☐ WIM | ☐ Ride Share |

FDOT

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TS M&O

- **Master Data Management**
  - ➢ Processes, governance, policies, standards, and tools for single point of reference
- **Data Fusion**
  - ➢ Integration of multiple data and knowledge sources
- **Sensor Fusion**
  - ➢ Combination of data from multiple sensors for advanced computation
- **Extract Transform and Load functions**
  - ➢ Real-time incident management
- **Integration of data across functional areas in the Department**
- **Publicly Available Transportation Data**
  - ➢ Florida's Data Integration and Video Aggregation System

SunStore

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FDOT

TS M&O

SunStore
Regional Data Engine

Introduction: SunStore will be the central repository that connects multiple disparate data into a singular source. This centralized approach to data management maximizes the value of data assets and delivers a holistic view that effectively disbands information silos. The Department will leverage 3rd party developers by providing metadata and guidance to principles of the transportation industry to encourage private sector development of mobility applications. The principal repository will house the following types of data:

- Travel times
- Speed
- Predictive travel times from Greenway
- Incidents
- Weather
- Construction Activity
- Special Events
- Preemption Activation
- Land use
- Parking
- Vehicle Classification & Weight (WIM) data

PedSafe

3rd Party Data

SUNGUIDE
Florida's Intelligent Transportation System

SunStore

GreenWay

Open Data Source Platform

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TS M&O
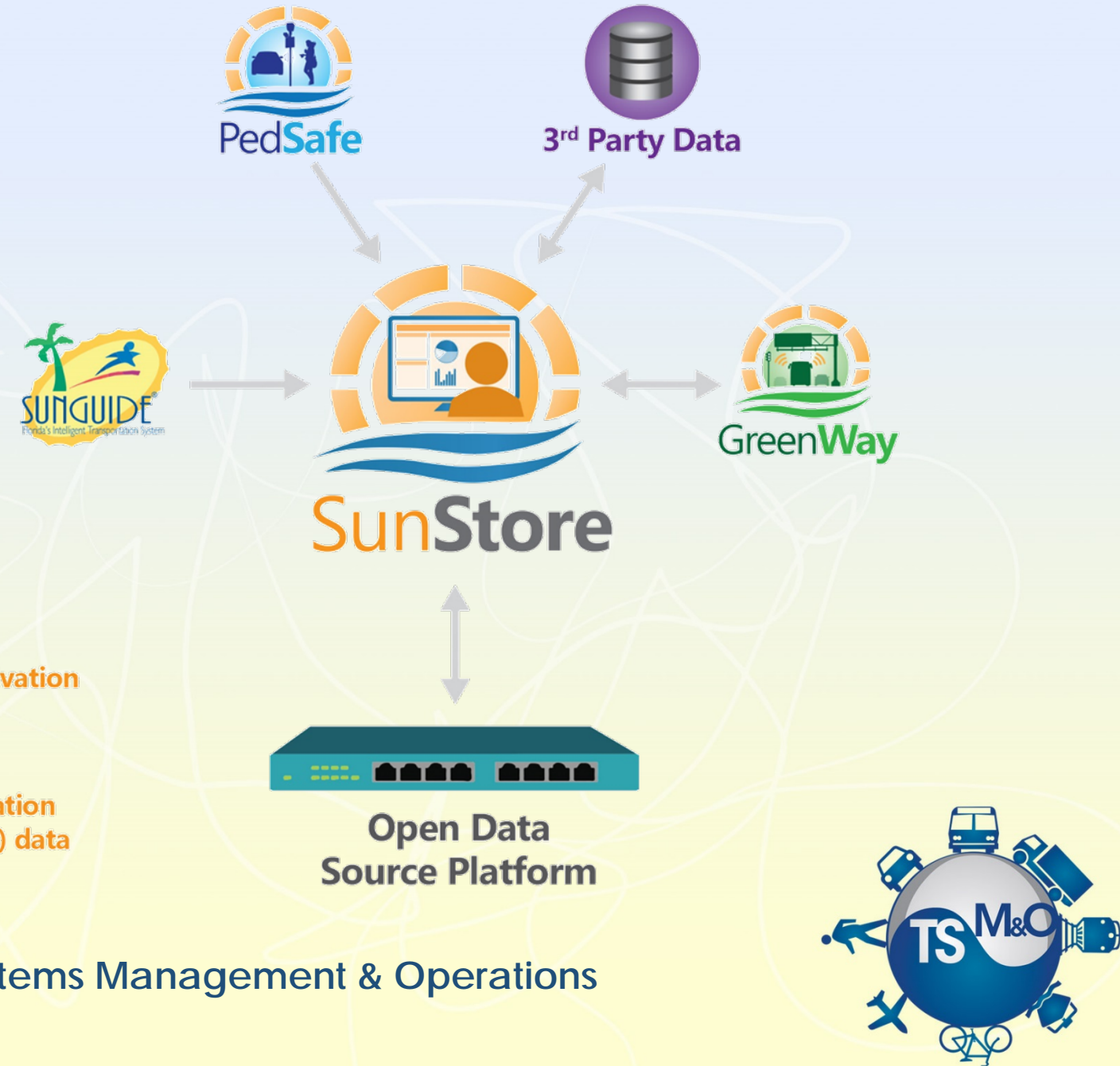
D5 Current Initiatives Overview

LYNX Mobility On Demand (MOD) Sandbox Demonstration Program Grant Application

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PINEAPPLE Project

Paratransit

Improvement by

Next

Evolution

Analytics for

Peak

Performance &

Lowest

Expenditure

The concept is to develop a data lake that combines data from multiple sources and supports the use of an advanced discovery tool to gain new insights and understanding regarding the demand for paratransit, operating conditions and conditions experienced by users.

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Proposed Regional TSM&O data fusion architecture roadmap:
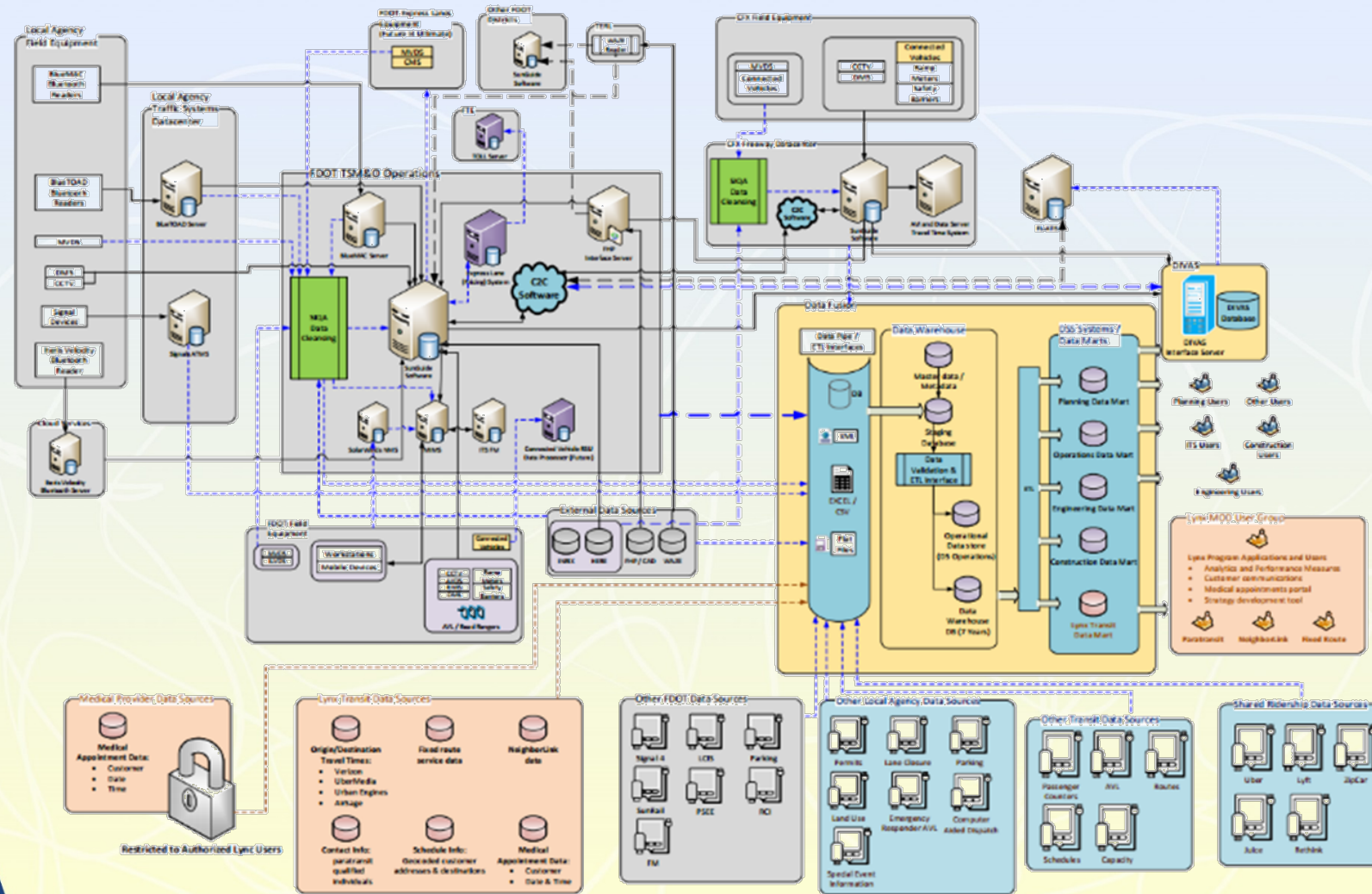
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D5 Current Initiatives Overview

STAMP Group Status and Purpose

FDOT

Transportation Systems Management & Operations

STAMP

- Statewide Arterial Management Group
- Let by FDOT Central Office
  - Raj Ponnaluri
    State Arterial Management Systems Engineer
- Membership includes all Districts
- Arterial Operations focused

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STAMP

- Currently revisiting the strategic plan
- Project deployment include
  - ASCT on SIS roads
  - ICM with CV integration (I-75 ATCMTD Proposal)
  - Looking to expand and request funding
- Have been focused within Traffic Ops
- Starting to reach out to Planning/PD&E/Data and Statistics

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Route of Significance (RoS)

- Initiated in 2014 in response to FHWA Real-Time System Management Information Program (RTSMIP)
- FDOT to identify RoS's by November 8, 2016
- Joint venture between FDOT and municipal partner agencies to identify criteria and comply with RTSMIP requirements

Potential RoS Criteria:

- Existing ITS infrastructure;
- Connectivity with interstates/major routes;
- Regional connectivity;
- Severity & frequency of congestion;
- Major evacuation routes;
- Economic activity;
- Travel time reliability;
- Roadway volumes;
- Crash Rates.

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Existing RoS in Florida

- Existing routes reported to FL511 will serve as foundation.

- Additional routes identified will meet RTSMIP requirements

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FHWA RoS Reporting Requirements

1. **Construction activities** within 20 minutes outside metropolitan areas; **10 minutes within metropolitan areas** from time of closure or reopening

2. **Roadway or lane blocking incidents** within 20 minutes outside metropolitan areas; **10 minutes within metropolitan areas** from time of incident verification

3. **Roadway weather observations** – information shared **within 20 minutes or less** from time of hazardous conditions, blockage, or closure observed

4. **Travel time information** – information shared **within 10 minutes or less** from travel time calculation on limited access facilities

5. **Information accuracy** – real-time information shall be **85% accurate** with a maximum error rate of 15%

6. **Information availability** – **90% minimum availability**

Transportation Systems Management & Operations

ROS Funding

- Currently not tied to funding
- Potential for this to occur in the future

Intelligent Transportation System (ITS) Study

The goal of this ITS Study and Plan Development is to determine the needs, phasing and estimated costs for ITS activities throughout Sumter County. The study includes state and national roads such as I-75, Florida Turnpike (SR 91), SR 50, SR 48, US 301, US27/441, SR 471, and SR 44. The study will also include County arterial and collector roadways, such as CR 466A, C-466, Morse Boulevard, and Buena Vista Boulevard. The study will include recommended Advanced Traffic Management System (ATMS) features, ITS equipment and communication layout in order to create a more standardized and connected County signalization system. The study will explore connections to ITSs in adjacent counties (Marion & Lake) and connections to the FDOT District 5 and Florida's Turnpike Traffic Management Centers.

- Project Management
- Update Phase 1 Report
- Vendor Demonstrations/ Site Visits
- ATMS Features
  - Traffic Control Options
  - Detection/Travel Time Systems
  - Traffic Monitoring Systems
  - Information Dissemination
  - Central Control Software

- Communications
- Traffic Management Center (TMC)
- Coordination of Systems
- Implementation Plan
- Funding Analysis
- Concept of Operations (ConOps) & System Engineering Management Plan (SEMP)
- Master Plan Document

Schedule & Budget

▸ $200,000

Progress	Deadline
NTP for Study Services	January 15, 2016
Begin Study	January 15, 2016
Final Submittal	January 11, 2017
Final Invoice	March 31, 2017

MetroPlan Orlando ITS Plan Overview

Eric Hill

Transportation Systems Management & Operations Director

FDOT

Transportation Systems Management & Operations

Intelligent Transportation Systems (ITS) Master Plan

Central Florida TSMO Consortium Meeting
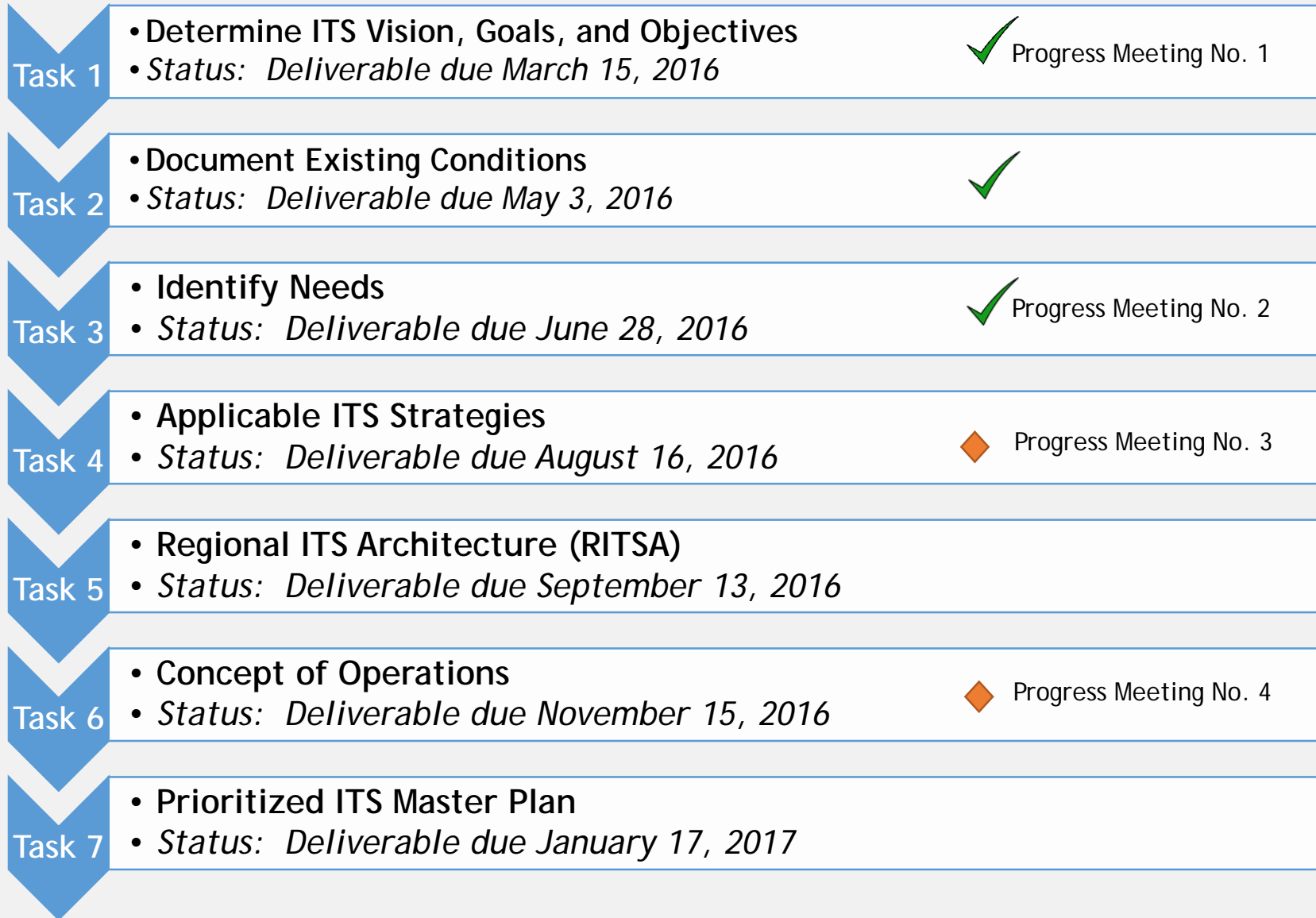July 28, 2016

metroplan orlando
A REGIONAL TRANSPORTATION PARTNERSHIP

ITS Master Plan

- Evaluation of current systems and determine future needs.

- Steering Committee

- Gannett Fleming, Inc.
  - Kimley Horn & Associates, Inc.
  - Cambridge Systematics, Inc.
  - Ghyabi & Associates, Inc.

ITS Master Plan Schedule

Task 1
- Determine ITS Vision, Goals, and Objectives
- *Status: Deliverable due March 15, 2016*

✔ Progress Meeting No. 1

Task 2
- Document Existing Conditions
- *Status: Deliverable due May 3, 2016*

✔

Task 3
- Identify Needs
- *Status: Deliverable due June 28, 2016*

✔ Progress Meeting No. 2

Task 4
- Applicable ITS Strategies
- *Status: Deliverable due August 16, 2016*

◆ Progress Meeting No. 3

Task 5
- Regional ITS Architecture (RITSA)
- *Status: Deliverable due September 13, 2016*

Task 6
- Concept of Operations
- *Status: Deliverable due November 15, 2016*

◆ Progress Meeting No. 4

Task 7
- Prioritized ITS Master Plan
- *Status: Deliverable due January 17, 2017*

ITS Vision Statement

Maximize the performance of our transportation system by continually improving safety, efficiency, and reliability for all systems users through the application of technology.

Goals

- Performance, efficiency and reliability

- Information, communication and technology

- Safety and security

- Environment and quality of life

Existing Conditions

Quantitative:

Traffic Signals

CCTV, DMS

Detection Devices

Communications

Transit Devices

Qualitative:

Project successes and shortfalls

Ability to share and act on data

Multi-modal uses and system integration

Funding

Challenges

- Jurisdictional boundaries

- System integration

- Sharing of information

- Funding

250 S. Orange Avenue, Suite 200, Orlando, FL 32801 ● 407-481-5672
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FDOT D5
ITS Plan Overview

Dale Cody

Project Manager, Metric Engineering

Transportation Systems Management & Operations

ITS MASTER PLAN
Potential Commitments

Florida Department of Transportation, District 5
July 28, 2016

ITS Master Plan for District 5

- 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

ITS Master Plan for District 5

- Overall Process
  - Task 1 - Document Existing Plans (Completed)
  - Task 2 - Document Deployments (Completed)
  - Task 3 - Identify Staffing Guidance (Completed)
  - Task 4 - Applicable ITS Strategies (Completed)
  - Task 5 - Applicable ITS Strategies for Connected Vehicle (Completed)
  - Task 6 - ITS Standards (Completed)
  - Task 7 - Configuration Assessment and Functions (TSM&O) (Ongoing)

  - Important Elements throughout the Process:
    - Incorporate all stakeholders – Cities, Counties, CFX, SunRail, Airport, Seaport, MPO/TPO, Fire/Rescue, Transit
    - Discuss Roles and Responsibilities (FDOT/Maintaining Agency)
      - Cooperative Approach through Communication

ITS Master Plan for District 5

- Commitments
  - Review Potential Commitments that Present Regional Value
  - Goals
    - Discuss Each Item that is a Potential Commitment
    - Determine Which Items are Appropriate
      - Mandatory
      - Guidance
      - Not Required
    - Determine Timeframe of Each
  - Not Set in Stone. Can Change through the TSM&O Consortium Input!

ITS Master Plan for District 5

- Proposed Regional Standards
  - Communications (Mandatory)
    - Hub and Spoke Topology
    - Static Routing for Now
    - Gradually Migrate Border Gateway Protocol (BGP) with Unique Autonomous System Numbers (ASN) Numbers
    - Fiber Connection Between Agency Router and D5 Carrier Ethernet Switch (Master Hubs)
    - Use Multiprotocol Label Switching (MPLS)
    - Unique Assigned IP Address Ranges
    - Use of Multicast Source Discover Protocol (MSDP)
  - Any Concerns?
  - Timetable?

ITS Master Plan for District 5

- Proposed Regional Standards
  - Security (Mandatory)
    - Firewall at the D5 Carrier Ethernet Switch (Master Hub)
    - Each Stakeholder to Centrally Manage User Account Database (i.e. Microsoft Active Directory)
      - Authentication, Authorization and Accounting (AAA) - Remote Authentication Dial-In User Service (RADIUS) or (Terminal Access Controller Access-Control System Plus) TACACS+
  - Any Concerns?
  - Timetable?

ITS Master Plan for District 5

- Proposed Regional Standards
  - Data (Mandatory)
    - Format - JSON or XML
    - District 5 will be the sole source of regional data
    - Access to a partner's data to be read only
    - For 3rd party - Data would be published through the Department
  - Any Concerns?
  - Timetable?

ITS Master Plan for District 5

- Proposed Regional Standards
  - Common GPS Clock for All Network and Signalization Applications (Mandatory)

  - No More No. 2 Keys (Mandatory)/Use of Cyber Locks or Pad Locks (To be Determined by Agency)

  - Leveraging Regional Real-Time Data with 3rd Parties to Obtain Data from the 3rd Parties in Exchange (Mandatory)

ITS Master Plan for District 5

- **Recommended Regional Standards**
  - Security (Guidance)
    - Firewalls for each agency or establish a mutually agreed upon Service Level Agreement (SLA) for FDOT to manage
  - ITS Maintenance Standards (Guidance)
  - ITS Operations (Guidance)
  - Training Standards (Guidance)
  - Software Licensing (Guidance)
    - GTT (Is Available)
    - BlueMac (Is Available)
    - CMS (Is Available)
    - ATMS/DSS (Pending)

ITS Master Plan for District 5

- Recommended Regional Standards
  - Asset Management (Guidance)
    - MIMS
    - ITSFM
  - Regional Operations and Maintenance Contracts with Federal Language (Guidance)
  - System Engineering Document Services (Guidance)
  - Network/Re-IP Addressing (Existing Contract - Guidance)
  - Active Arterial Management (Existing Contract - Guidance)

ITS Master Plan for District 5

- Recommended Regional Standards
  - Communication Standards Behind the Stakeholder's Firewall (Not Required)
    - With the Exception of IP Addressing Standardization, which is currently underway
  - Any Concerns?

Questions? Comments?

River to Sea TPO ITS Master Plan – Phase 1

Issued Notice to Proceed on March 30, 2016 to the consultant, Kittleson & Associates; TEDS is a sub consultant.

Purpose -

- To perform the initial steps toward the development of a Master Plan for the orderly deployment of ITS improvements throughout the R2C TPO's Metropolitan Planning Area.
- Addresses only Phase 1 which will include:
  - o development of the ITS Vision, Goals and Objectives,
  - o inventory and evaluation of existing ITS elements and relationships, and
  - o identification of transportation-related issues that could potentially benefit from the deployment of ITS projects and/or strategies.
- In addition, the Consultant will prepare a scope of work and cost estimate for work needed in one or more subsequent study phases to complete an ITS master plan for the study area.

Subsequent phase(s), to be conducted under a separate contract, will identify and recommend candidate ITS projects and/or strategies that will most effectively resolve or mitigate the transportation-related issues identified in Phase 1, and will prescribe an implementation strategy.

Study Area – the designated Metropolitan Planning Area for the River to Sea TPO encompassing Volusia County and the urbanized areas of Flagler County including the cities of Flagler Beach, Beverly Beach, and portions of Palm Coast and Bunnell.

Consultant Tasks –

Task 1 – Determine ITS Vision, Goals, and Objectives

Task 2 – Inventory and Document Existing and Planned ITS Elements and Relationships

Task 3 – Identify and Assess Transportation-Related Issues

Task 4 – Prepare a Scope of Work and Cost Estimate for Work Needed to Complete an ITS Master Plan

Project Status

Consultant has submitted drafts of all deliverables including Vision, Goals, and Objectives; Existing Conditions Technical Memorandum; and Issues Report. ITS Technical Working Group has reviewed documents; consultant is now revising documents; final documents for Phase 1 will be presented to the TPO's Citizens Advisory Committee, Technical Coordinating Committee, and Board for review/approval in August.

Phase 2 should begin in the current fiscal year; however, additional funding is needed.

R2CTPO's ITS Ground Work - Highlights

- Completed the "Countywide Emergency Vehicle Preemption Study for Volusia County" (July 2009).
- Convened a working group of traffic engineers and other professionals to develop a strategy for advancing ITS projects that effectively address issues relating to traffic operations and safety (November 2014).
- Participated in the update of the FDOT District 5 regional ITS architecture (2015).
- Adopted 2040 Long-Range Transportation Plan that emphasizes multi-modal efficiency and use of cost-effective transportation improvement projects and strategies (September 2015).
- Focused the annual TPO Board Retreat on emerging transportation technologies (February 2016).

TSM&O Consortium Meeting

MEETING AGENDA

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

JULY 28, 2016; 10:00 AM-12:00 PM

1) WELCOME

    - David Cooke, FDOT D5 Planning Manager

2) BUSINESS PROCESS – EXISTING DISTRICT PRACTICES

    - Melissa Gross, VHB

3) CURRENT INITIATIVES

    i) ATCMTD Status (Overview of FAST Act Grant Application)

    ii) LYNX MOD Efforts (Overview of MOD Grant Application)

    iii) Statewide Arterial Management Group – STAMP (How the group is evolving and its purpose)

    iv) RoS – Routes of Significance (What, Where, and Why?)

    - Jeremy Dilmore, D5 ITS

4) ITS MASTER PLAN UPDATES

    i) Lake-Sumter MPO (Richard Baier)

    ii) River to Sea TPO (Robert Keeth)

    iii) MetroPlan Orlando (Eric Hill)

    iv) FDOT D5 (Dale Cody)