System Development and Operations/Maintenance of Monroe County’s Signal System

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Agenda

• Project Overview
• Project Goal
• Challenges
• Implementation
• Lessons Learned
• Next Steps
Traffic Signal Maintenance and Compensation Agreements

- Miami Dade County
- Monroe County
- Islamorada, Village of Islands
- City of Marathon
- City of Key West

- June 30 2016 Monroe County, Islamorada Village of Islands and City of Marathon opted out of the TSMCA.

- July 1st – FDOT D6 took over Operations and Maintenance of the State-owned signals
Project Limits

- MM 4.4 to MM 106.5
- 102 miles
- 17 Signals
- 8 Emergency Signals
- 26 Beacons
Assessment

- **Inventory of all Assets**
  - Traffic Signals
  - Advance Warning/School Zone Beacons
  - Mid-Block Pedestrian Signal
  - Emergency Signals
  - Mast Arms and Signal Poles

- **Condition of Cabinets and Controllers**
  - Type and Condition of Controllers
  - Conditions of Cabinets
  - As-builds and Timing Plans

- **Communications System**
- **Power Service**
- **Uninterruptible Power Supply (UPS)**
Challenges

- Distance
  - Arterials Operations team and ITS Maintenance Headquarters in MDC

- Inventory of all Assets
  - Traffic Signals and Devices were accounted for
  - Emergency Signals - Most were not actuated with the Fire Dept.
  - Mast Arms and Signal Poles – Minor deficiencies were found on the structures

- Condition of Cabinets and Controllers
  - A variety of controllers had been deployed
  - Cabinets raised on pedestals
  - Lack of proper documentation inside the cabinets

- Communication System
  - Lack of remote communication system
  - Cannot actively monitor the corridor
  - Limited number of CCTV Cameras

- Power Service
  - Beacons did not have an independent meter

- Uninterruptible Power Supply (UPS)
  - There was no power backup
FDOT Project Development Process and Systems Engineering
“Vee” Diagram Process
Procedures

- Standard Operating Guidelines
  - Ensures that the MCTSS is operated and maintained adequately

- Failures are quickly reported through direct communications and through our D6 Operations Task manager (OTM).
Operations

• Transparity TMS was installed at the D6 TMC to be able to receive notifications from the controllers
• ITS Maintenance Contractor installed Transparity IMS which enabled personnel to manage field signal controllers
• Arterial Operators were fully trained
Infrastructure Upgrades

- Wireless Routers
- 2070LX Controllers / 2070E 1C CPU
- Concrete Pedestals
- UPS
Collaborations / Partnerships

- Initial troubleshooting
- Traffic Signals Training
Solution
Lessons Learned

• Do Not Assume All Agencies Operate on Same Criteria

• Partnerships are Essential to Success
  • Acclimate to Partner Agency Culture
  • Approach with a Collaborative Mentality

• Budget for Additional Staff and Resources

• Host Internal Team Meetings

• Document Procedures for Future Projects/Next Steps
Next Steps
High-Intensity Activated CrossWalk Midblock Pedestrian Signal

Emergency / Pedestrian Traffic Signals
Closed Circuit Television
Permanent Statewide Wireless System

- Merge from the current cellular base to the permanent statewide microwave wireless system
- Allows live video feed to be routed back
City of Key West 2018 Opt-Out

- July 1st 2020 FDOT will be taking over Operations and Maintenance
  - 17 traffic signals
  - 3 pedestrian flashing beacons
  - 1 emergency signal
Connected Vehicle Pilot Project
Thank you.