

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



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



Legend	
	Traffic Signal
	Traffic Signal - Mid-Block
	Emergency Signal
	Drawbridge Signal
	School Zone Beacon
	Intersection Control Beacon
	Pedestrian Hybrid Beacon - HAWK
	Mid-Block Pedestrian Flashing Beacon
	Emergency Vehicle Warning Beacon
	Advance Warning Beacon
	Deer Warning Beacon



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-builts and Timing Plans
- **Communications System**
- **Power Service**
- **Uninterruptible Power Supply (UPS)**

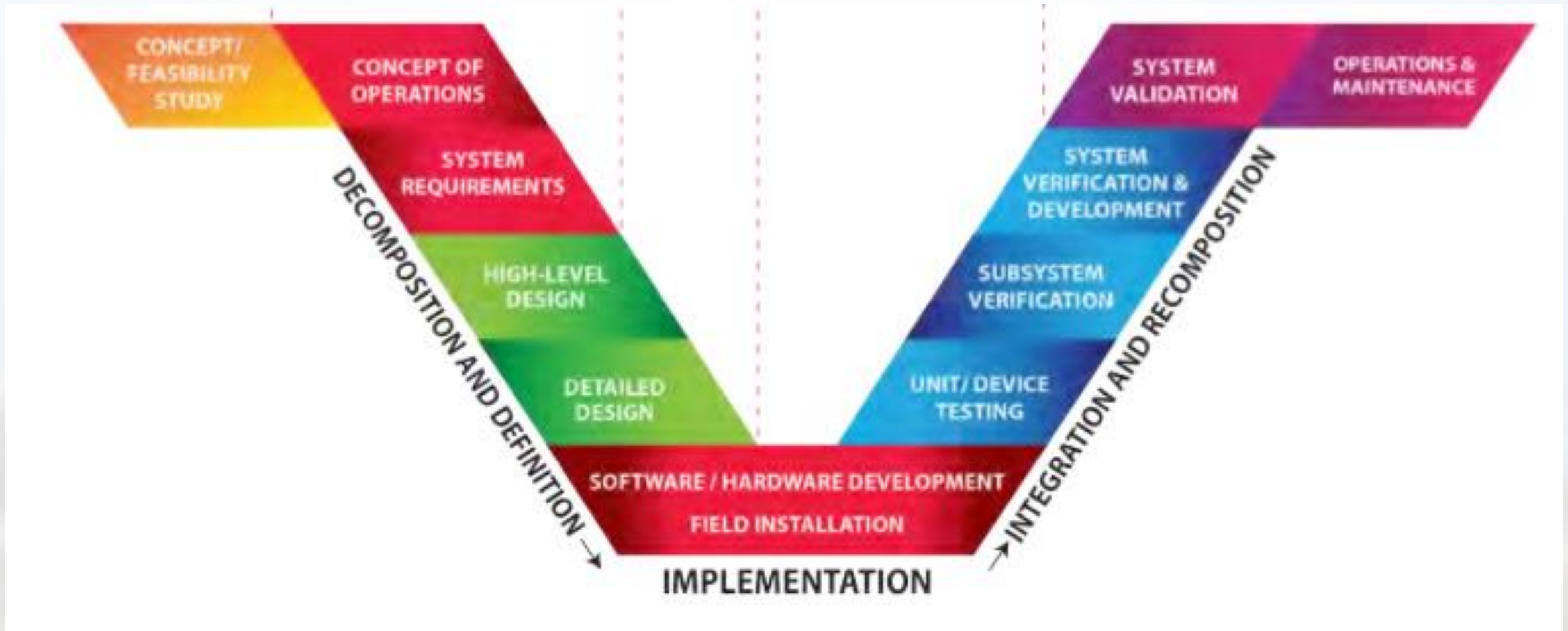


- **Distance**
 - Arterials Operations team and ITS Maintenance Headquarters in MDC
- **Inventory of all Assets**
 - Traffic Signals and Devices were accounted for
 - Emergency Signals - Most were not actuated with the Fire Dept.
 - Mast Arms and Signal Poles – Minor deficiencies were found on the structures
- **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

Challenges

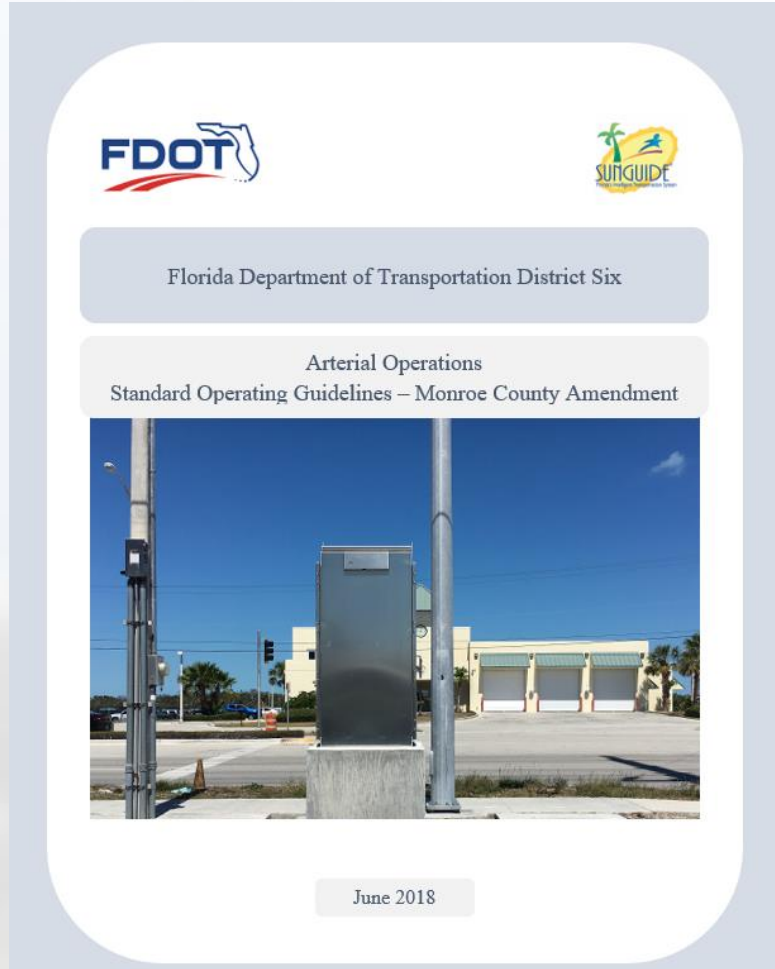


FDOT Project Development Process and Systems Engineering “Vee” Diagram Process



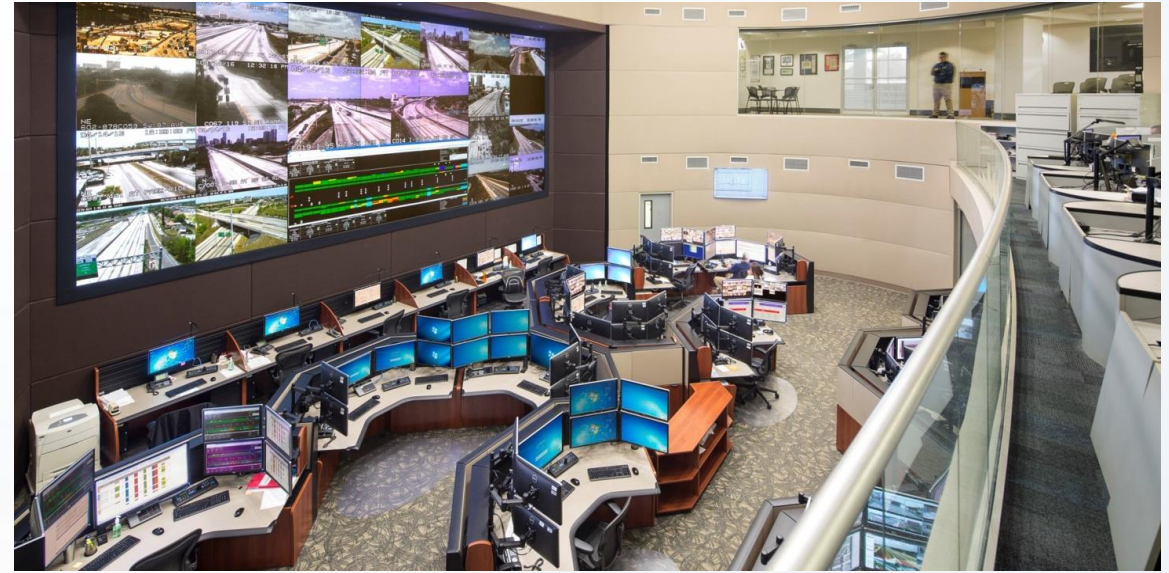
Procedures

- 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

- Transparency TMS was installed at the D6 TMC to be able to receive notifications from the controllers
- ITS Maintenance Contractor installed Transparency 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

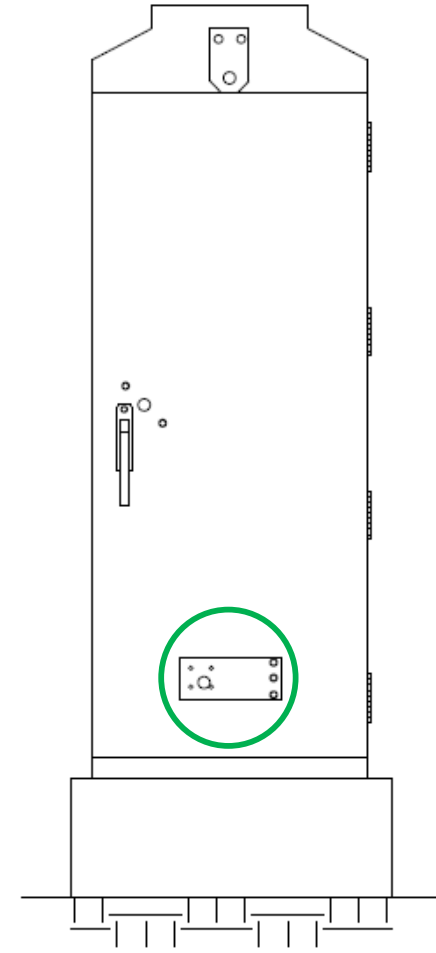
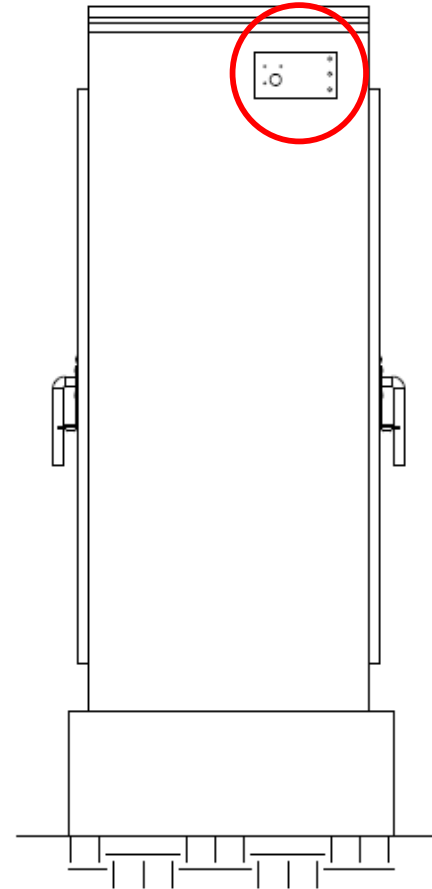
Collaborations / Partnerships



- Initial troubleshooting
- Traffic Signals Training



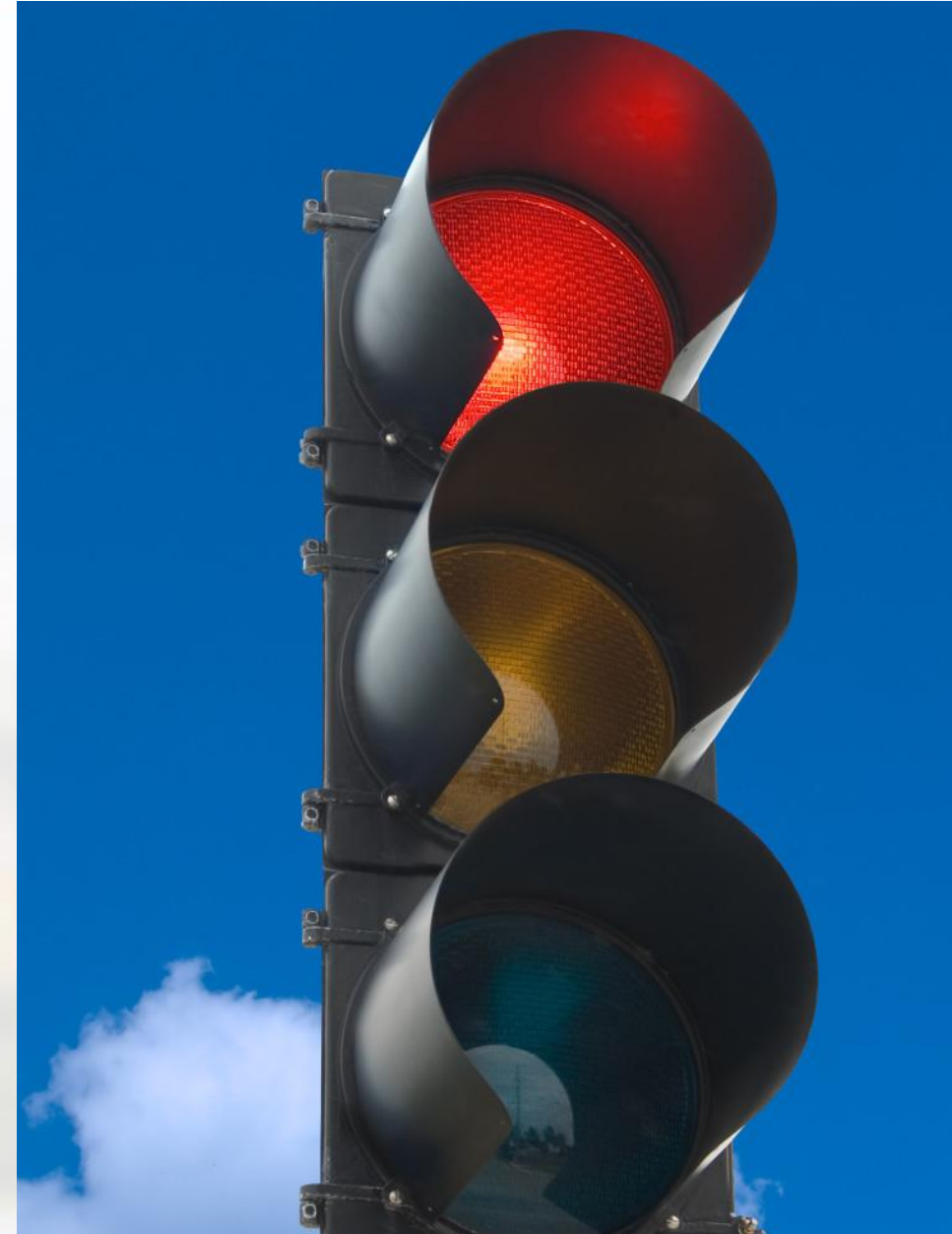
Solution



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.



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