



REGIONAL BASELINE CONDITIONS FOR EFFECTIVE ITS/ATMS MANAGEMENT

Space Coast TPO ITS Master Plan Stakeholders' Meeting

October 28, 2014



INTRODUCTION

Where do we start?

- Background
- Clear understanding of regional infrastructure
 - Appropriate maintenance practices
 - Equipment & network awareness
- Necessary Staffing Requirements
- Equipment Needs
- Interagency Coordination



BACKGROUND

Maintenance:

- Upkeep of the traffic signal system and ITS equipment deployed along the arterials on a periodic basis to keep the equipment/loops in proper working order and maximize the benefits of those investments



Operations:

- Ranges from basic signal timing upkeep to the control of the arterial system primarily utilizing traffic signal system control and/or ITS technology (where applicable)

BACKGROUND

Problems and Contributing Causes

- Unnecessary delays (Bad Loops)
- Unreliable travel times
- Increased cost to system users
- Inconsistent & insufficient infrastructure maintenance
- Inconsistent operations practices
- Poor lifecycle management
- Lack of performance measures



BACKGROUND

Problems and Contributing Causes

- Insufficient funding for O&M and capital improvements
- Failure to maximize benefit of current arterial investments



INFRASTRUCTURE MANAGEMENT

- Maintenance and inventory management
 - Generate & track tickets and system failures
 - 10% of all loops in Florida are in fault
 - Network Communications
 - Fiber availability & sharing
 - Network management software
- Operations & maintenance procedures & guidelines for system failures
- Establish feasible performance metrics & expectations



INFRASTRUCTURE MAINTENANCE FHWA GUIDELINES

- 70% of failures should be detected by operating agency and responded to within 1 hour (business hour) and 2 hours (non-business hours)
- Spares for all field equipment should always be available
- >95% of detectors should meet system accuracy requirements at all times
- Periodic checks of database parameters and controller settings should be performed
- Backups for software and databases should be maintained



STAFFING GUIDELINES

Statewide AAM Needs Plan Operations Staffing Guidelines:

- Professional signal timing engineer for every 75-100 signalized intersections
- Signal technician for every 30-40 signalized intersections

FHWA 2008 Signal Timing Manual General Staffing Guidelines:

| Position | <50 Signals | <100 Signals | <200 Signals | <500 Signals | <1000 Signals |
|---------------------------------------|-------------|--------------|--------------|--------------|---------------|
| Traffic Signal Engineer | 0 to 1 | 1 | 1 to 2 | 2 to 5 | 5 to 10 |
| Traffic Signal Analyst/Technician | 0 to 1 | 0 to 1 | 1 | 1 to 3 | 3 to 5 |
| ITS Engineer | - | - | 0 to 1 | 1 | 1 to 3 |
| Traffic Signal Maintenance Technician | 1 to 2 | 2 to 4 | 4 to 7 | 7 to 17 | 17 to 33 |
| Electronic Specialists | 1 | 1 | 1 to 2 | 2 to 4 | 4 to 9 |
| TMC Operators | - | - | 2 | 2 to 4 | 4 to 9 |
| Public Coordinator | 0 to 1 | 0 to 1 | 1 | 1 | 2 |



STAFFING REQUIREMENTS

Approximate regional existing infrastructure:

- 500 intersections (168 connected to fiber)
- 50 Arterial DMS
- 80 CCTV
- 50 BlueTOAD
- 75 miles of fiber
- 1325 Wireless Pucks



| Position | Proposed Total Quantity | Hours per Week | Total Hours Per Week |
|--|-------------------------|----------------|----------------------|
| Senior Traffic Signal Engineer | 1 | 40 | 40 |
| Traffic Signal Engineer | 4 | 40 | 160 |
| Traffic Signal Analysts | 2 | 40 | 80 |
| ITS Engineer | 1 | 40 | 40 |
| Traffic Signal/ITS Fiber Technician | 14 | 40 | 560 |
| Electronics Specialist (L2 Network Tech) | 3 | 40 | 120 |
| TMC Supervisor | 1 | 40 | 40 |
| TMC Operator (for arterial application) | 2 | 60 | 120 |
| Public Information Officer | 1 | 40 | 40 |

ITS NEEDS

- Improve maintenance of equipment and loops
- Coordinate O&M as a region, and you're good to go
- Applicable ITS improvements to be identified as part of this Master Plan
- Strategies and focus to be based on stakeholder priorities and input





QUESTIONS?

