



POTENTIAL ITS TECHNOLOGIES

Space Coast TPO ITS Master Plan Stakeholders' Meeting

October 28, 2014



INTRODUCTION

ITS Programs

- Freeway Management
- Arterial Management
- TSM&O - Combination of Initiatives



FREEWAY MANAGEMENT

Managed Lanes

- Freeway within a freeway
- Controlled using pricing, vehicle eligibility, & access control
- Designed to meet consistent travel time reliability standards
- Examples:
 - High Occupancy Vehicle (HOV)
 - Value Priced
 - High-Occupancy Toll (HOT)



FREEWAY MANAGEMENT

Rapid Incident Scene Clearance

- RISC provides wreckers bonus incentive to clear lanes
- Typically for severe incidents

Road Ranger Patrol

- Provides support & extra safety to motorists

TIM Team (.. and arterials)

- Discuss procedures & provide educational programs/seminars for responders



FREEWAY MANAGEMENT

Ramp Metering

- Regulates access to freeways according to current traffic capacity & demand



Variable Speed Limits

- Adjusts speed limits on highly dynamic corridor segments in real time based on active conditions

ARTERIAL MANAGEMENT

Regional Signal Coordination

- Interagency coordination based initiative designed to eliminated deviations in signal timing consistency along expansive corridors
- Requires regular open lines of communication in response to recurring and non-recurring congestion and interagency cooperation



COMBINATION

Active Incident Management

- Decrease incident detection, response, & clearance times
- Mitigate effects to traffic conditions
- Quantifiable monetary benefits:
 - Delay savings
 - Emissions & fuel consumption reduction
 - Secondary crash prevention



ARTERIAL MANAGEMENT

Adaptive Traffic Control System

- Designed for variable corridors:
 - Geometry/layout
 - Highly varying traffic conditions
 - Seasonal traffic variations
- Processors stored in cabinet communicate with adjacent intersections to create custom timings based on real time demand back to a central location (TMC)
- Timing plans override the ATCS features



COMBINATION

Work Zone Management

- Potential to minimize work zone crashes & increase work zone safety
- Temporary ITS equipment can:
 - Provide advanced notice to travelers
 - Increase surveillance of overall work zone
 - Monitor traffic conditions throughout



ARTERIAL MANAGEMENT

Transit

- AVL & TSP/Queue Jumps
 - Improve schedule adherence & overall performance
- APC
 - Allows comparison of critical routes and intelligent allocation of transit resources



ARTERIAL MANAGEMENT

Parking Management & Information Systems

- Transit (park & ride) and rail applications
- Special events venues and/or downtown areas
 - Availability in parking garages
- Information distributable via Dynamic Message Signs or mobile applications



COMBINATION

Automated Traffic Enforcement

- Red-light cameras
- Speed detectors
- Bus lane cameras
- Safety improvements in intersections and highways
 - Reduced speeds
 - Improve driver awareness
 - Reduce severe crashes



COMBINATION

Emergency Preparation, Security, Response, & Recovery

- Reversible lanes
- Route guidance for evacuation
- Identification of non-natural disaster emergencies (i.e. HAZMAT)
- Post-storm identification of problems and system awareness



COMBINATION

Traffic & Weather Information

- Important for trip planning & mitigating potential damages
- Provided via DMS, HAR, 511, mobile apps, etc.



RWIS

- Can be targeted at particular corridors susceptible to flooding and/or limited visibility

COMBINATION

Travel Demand Management

- Raise awareness and provide active information for:
 - Ride matching programs
 - Park & ride facilities
 - Parking availability



FUTURE OF ITS

Connected Vehicles Initiative

- V2V & V2I communications technology
- Advance real time data collection & dissemination practices & platforms
- Improved Safety
- Road weather management
- Applications for the Environment Real-Time Information Synthesis (AERIS)
 - Promotes green transportation choices
- Driverless Vehicles



FUTURE OF ITS

FRATIS

- Provide information specific to fleet management/operations personnel
 - Travel time info & route guidance
 - Incident & weather alerts
 - Road closures & restrictions
 - Work zone information
 - Intermodal connections
- Support efficient freight operations reducing congestion & improving economic & environmental factors



FUTURE OF ITS

Smart Roadside Initiative

- Similar to FRATIS
- Enhance roadside enforcement operations
- Provide road condition & traffic info to commercial route planners
- Identify key components of freight at highway speeds
- Ensure necessary standards, protocol, & architecture for seamless integration across boundaries

