Arterial Traffic Control: Advancing Mobility

1980s, Now, and Beyond

Broward MPO: Championing a Vision for Quality of Growth and Life

Mobility Affects Quality

Collaborative Planned Investment in Mobility

Investment in Quality

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Mobility

- Accessibility
- Multi-Modal
- Information Driven
- Network Management Delivers
- Service

Collaborative

- MPO
- Broward County
- FDOT
- FHWA
- RTTAC

Planned

- TIP
- Strategic Plan
- Business Plan

Investment

- Infrastructure
- Operations / Maintenance
  Analytics
- Innovation

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Call To Action

- Enhance Collaboration through the Regional Transportation Technical Advisory Committee (RTTAC) / Transportation Systems Management and Operations (TSM&O) Subcommittee
- Leverage Planning Effort to Prioritize and Guide Investment
- Support Integrated Corridor Management (ICM)

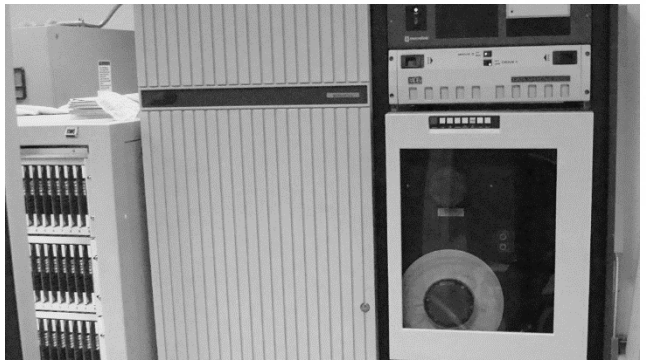
Overview

- (The Past)
- The Present: Enhance Infrastructure and Operations
- The Future: Integration / Information / Availability
- Call to Action

The Past

1980's / 1990's

- First coordinated system (Honeywell) - 260 intersections
- Large-scale investment into a countywide underground copper-based network
- Signal system grew - a larger mainframe and new software was introduced (UTCS)
- 1,440 signals could be coordinated (180 channels x 8 signals/channel)



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The Past

1990's - 2000's Expanding the Coordinated System

More signals were added via copper cable and analog phone modems

- Synchronized operation was achieved through software that used a library of different timing plans (UTCS)
- Mainframe was highly reliable, but copper-based network was subject to cable cuts, power outages and other damages

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The Present

Broward Traffic Management Center

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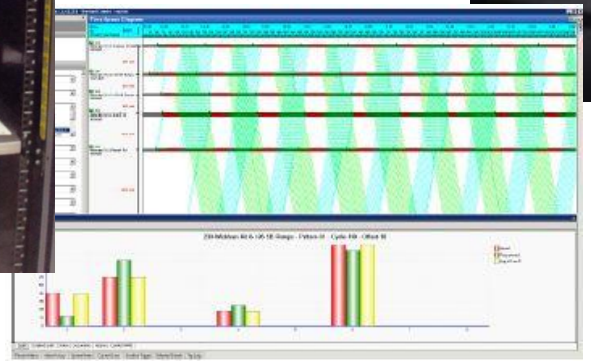
The Present

Enhanced Infrastructure

Old mainframe and analog communications replaced with newest generation of hardware, software and digital communications

- “Distributed Intelligence” -- remains synchronized even with network disruptions



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The Present

Enhanced Operation

Integration of intelligent transportation system (ITS) technologies

- Video, radar and thermal-based detection systems
- Remote troubleshooting
- Advanced programming options

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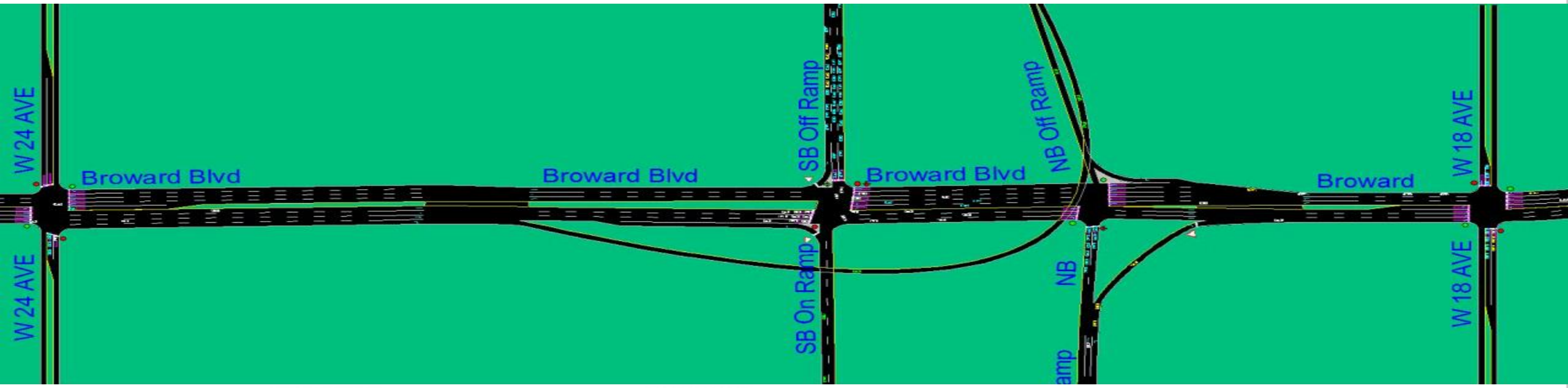
The Present

Performance Based Arterial Management



- Regularly update, test, refine and adjust signal timing to address changing traffic volumes and patterns
- Simulation modeling of corridors and complex interchanges to improve operations

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The Present

Integrated Arterial Management and Operations

- Real-time coordination with FDOT Freeway and Arterial Management Programs
- Quicker response to incidents and equipment damage
- Synchronized timing plans for special events
- Municipal planning and partnerships

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The Future

Is Based on Partnership

- Broward County
- City of Fort Lauderdale
- City of Hallandale Beach
- MPO
- Cities
- Fire / Police
- FDOT
- FHWA

Hallandale Beach
PROGRESS. INNOVATION. OPPORTUNITY.

CITY OF FORT LAUDERDALE

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FLORIDA

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The Future

Context Sensitive Signal Timing

- Signal timing for both time of day and mode choice (ie: pedestrian, bike, vehicle)
- Prevalent in downtown areas where there is both vehicle congestion and high pedestrian / bike activity

Time Frame	Operation	
	Weekday	Weekend
Midnight to 6 AM	Ped/Bike	Ped/Bike
6 AM to 9 AM	Vehicular	Vehicular
9 AM to 3 PM	Vehicular	Ped/Bike
3 PM to 8 PM	Vehicular	Vehicular
8 PM to Midnight	Ped/Bike	Ped/Bike

***Table is for example purposes only

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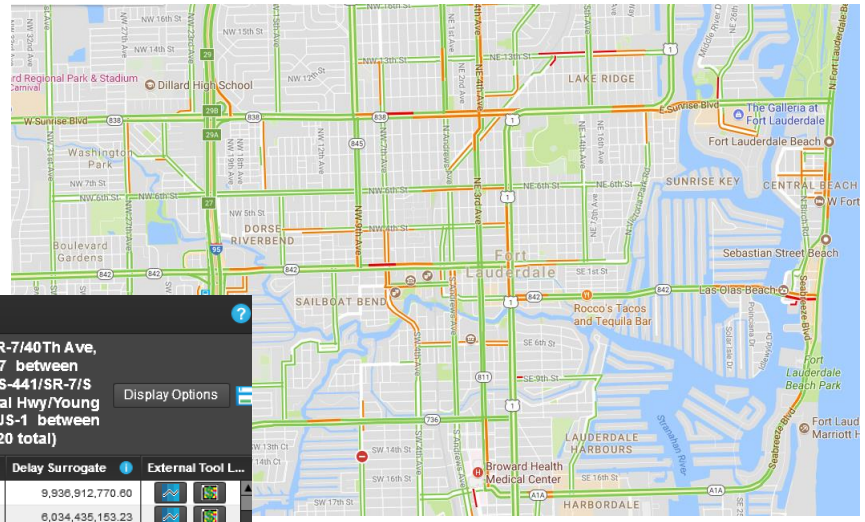
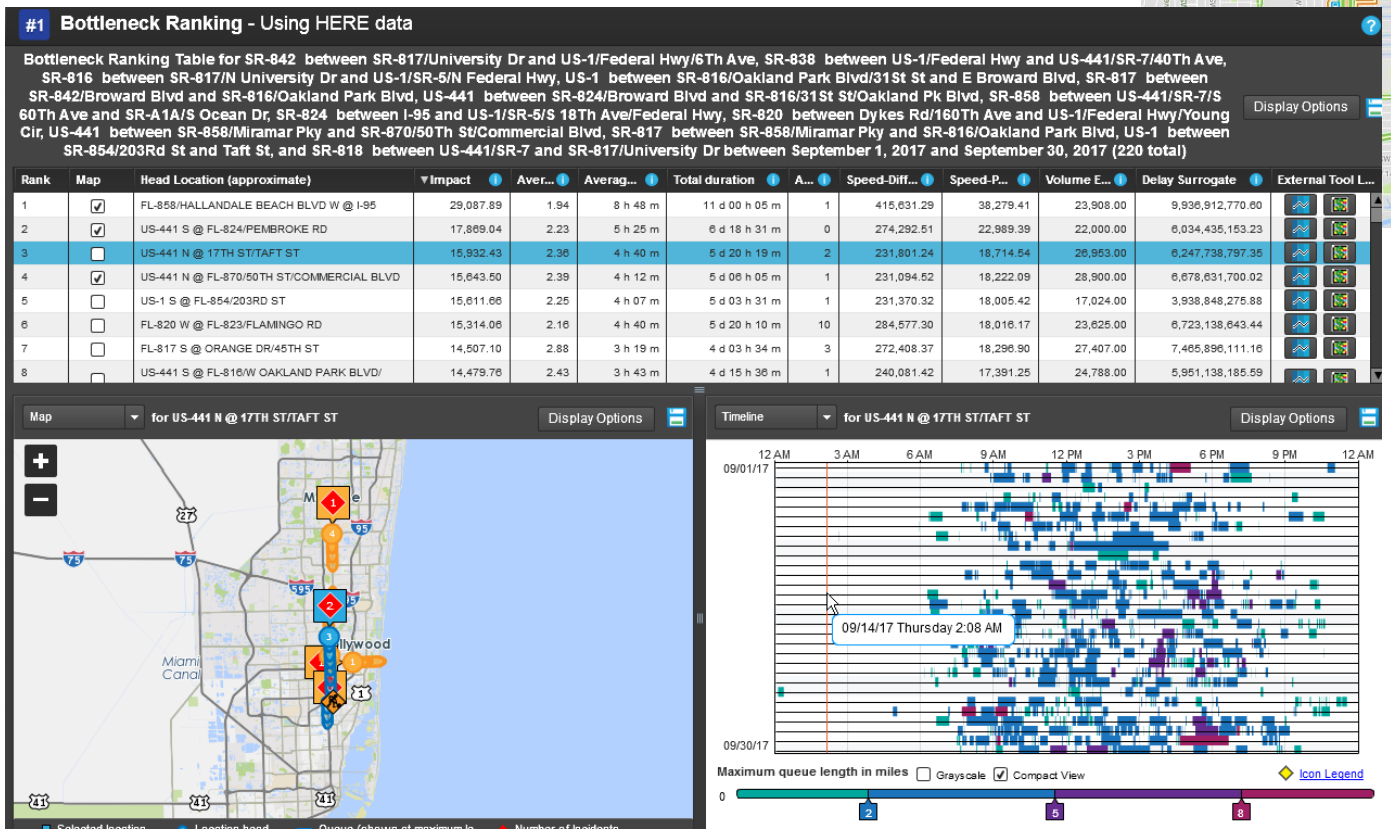
The Future

Mobility Through Real-Time Data Analytics

- Google
- Waze
- RITIS
  - Inrix
  - HERE





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The Future

Mobility Through Intelligent Systems

- Freight Mobility and Management
- Moveable Bridge ITS
- At Grade Railroad ITS

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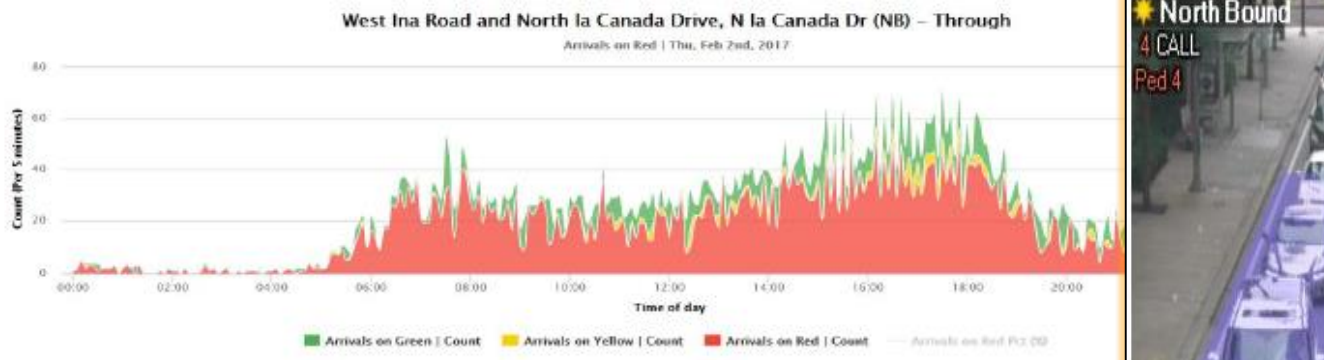
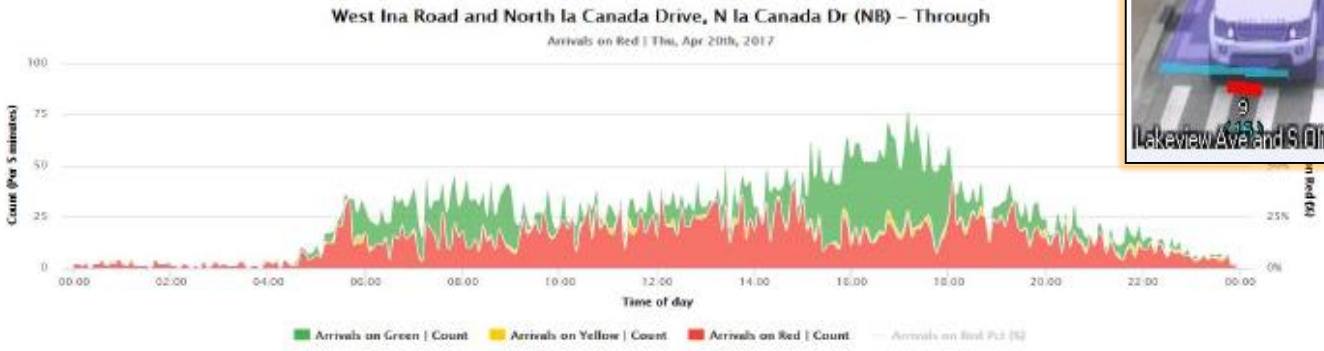
The Future

- Automated Traffic Signal Performance Measures (ATSPM)
- Adaptive Signal Control Technologies (ASCT)

Before:



After:



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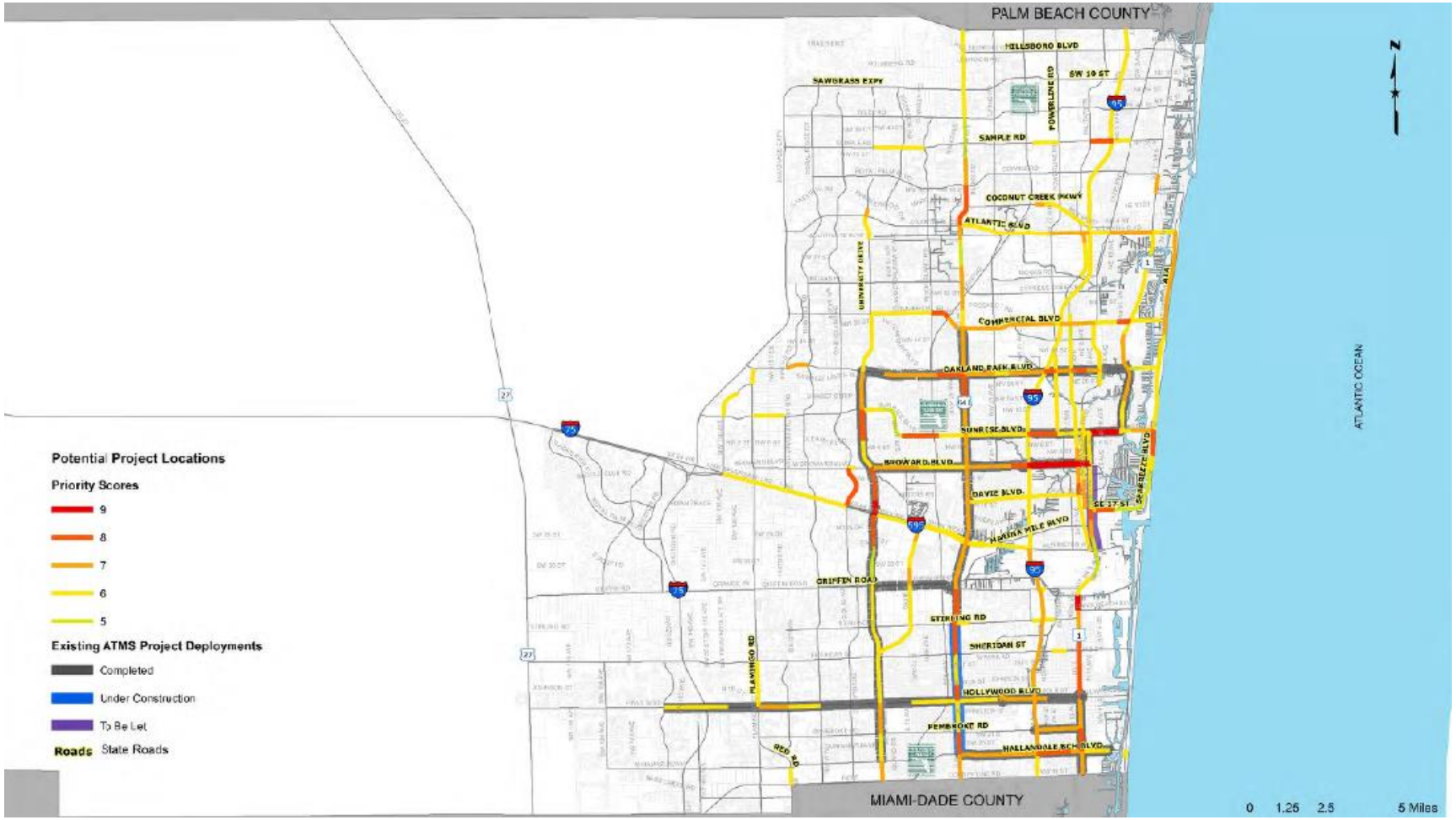
The Future

FDOT District 4 TSM&O Master Plan



TSM&O projects identified by FDOT, M/TPOs, or local agencies.

M/TPOs and FDOT Districts work together to prioritize projects based on region wide transportation needs and resources.

FDOT, M/TPOs, and local agencies coordinate to identify funding for planning, construction, operation, and maintenance.

M/TPO sand FDOT program projects in TIP/Work Program

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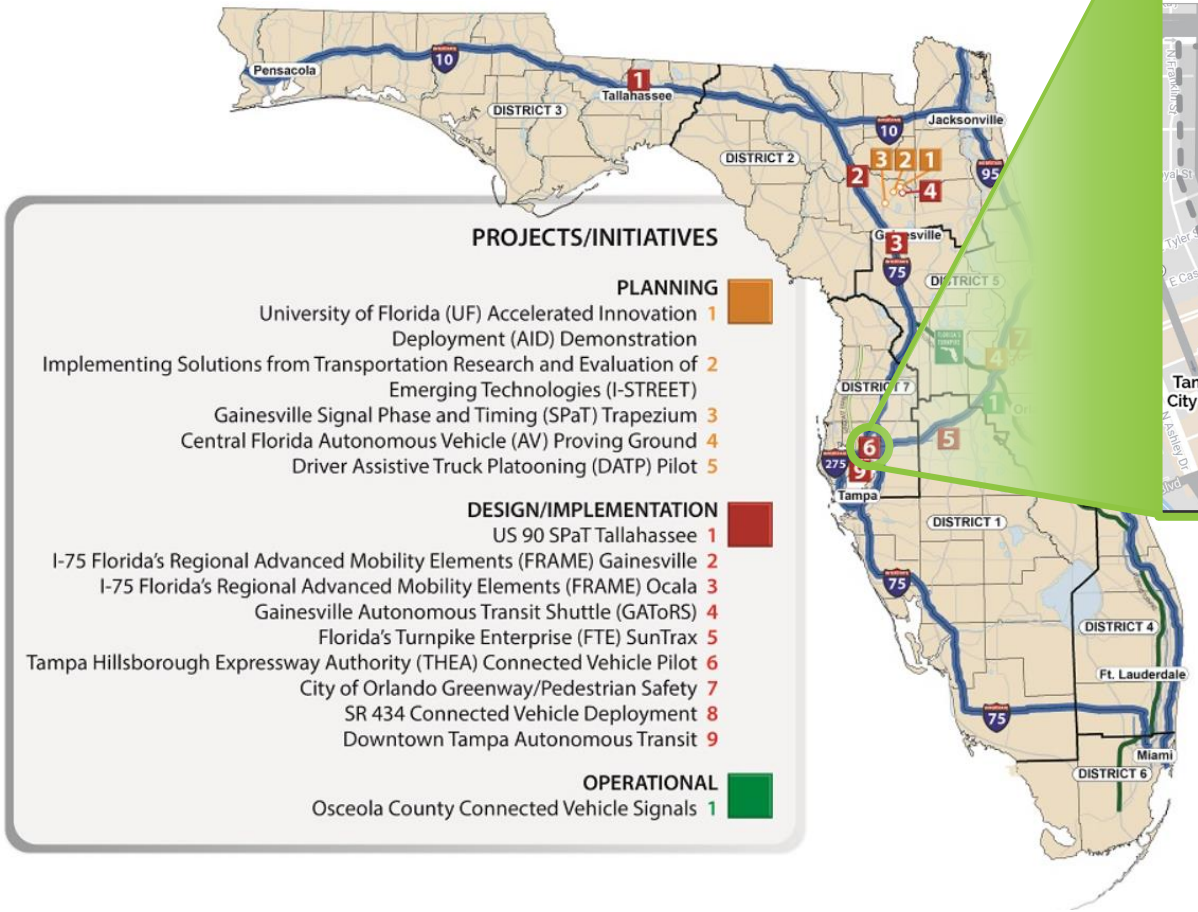
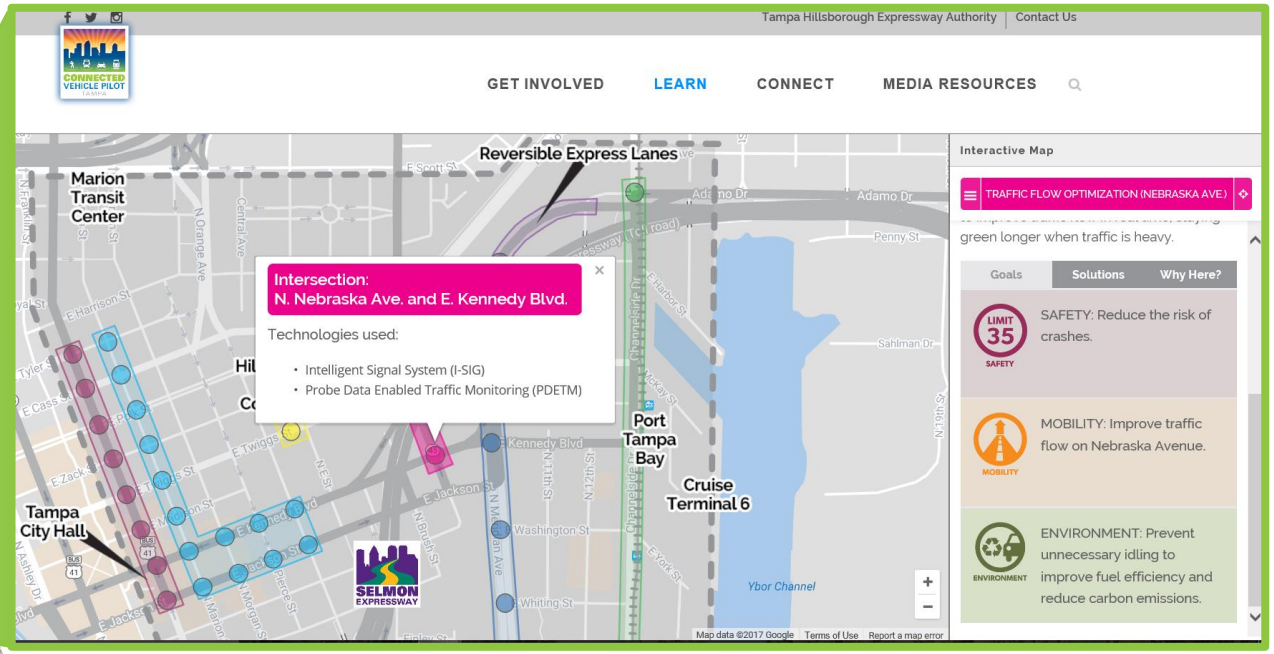
The Future

Connected & Autonomous Vehicles





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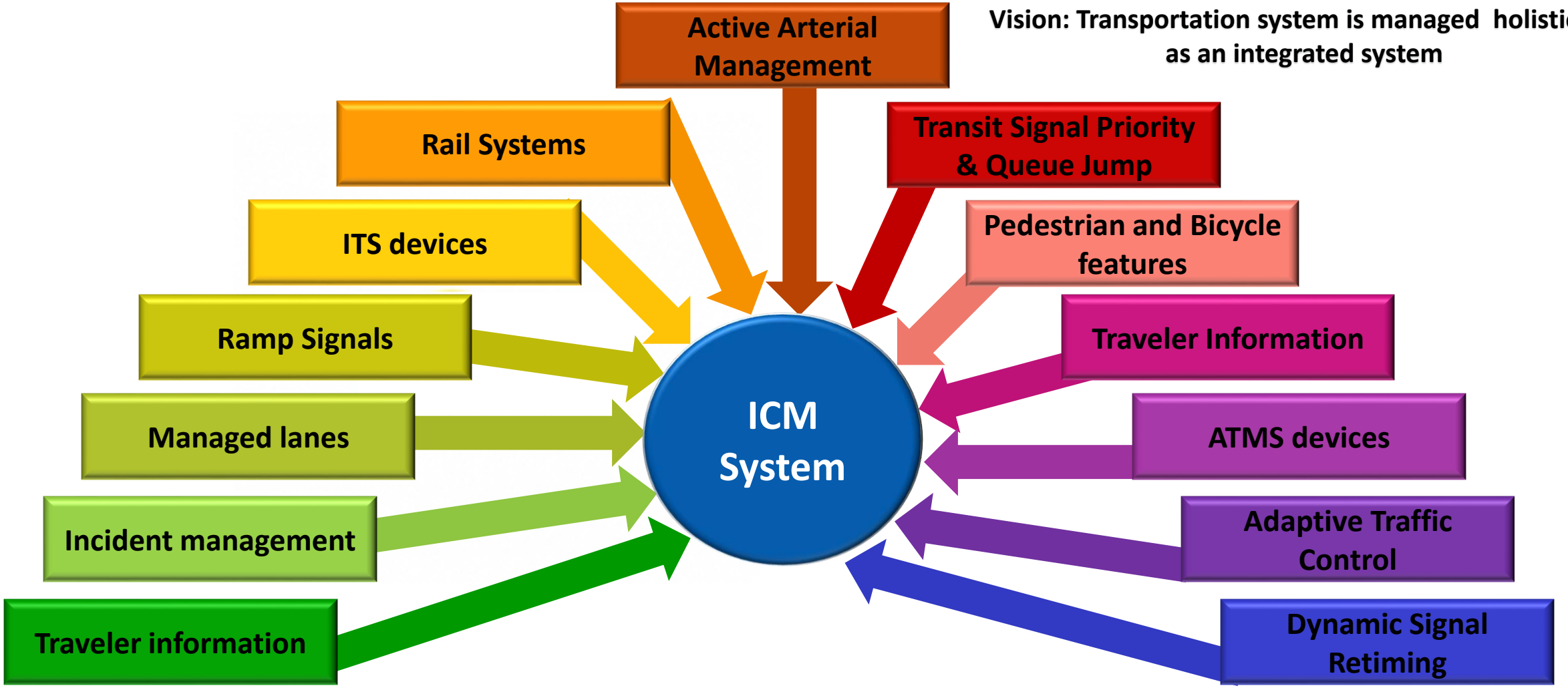
The Future

Integrated Corridor Management (ICM)



Vision: Transportation system is managed holistically as an integrated system

Call To Action

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