



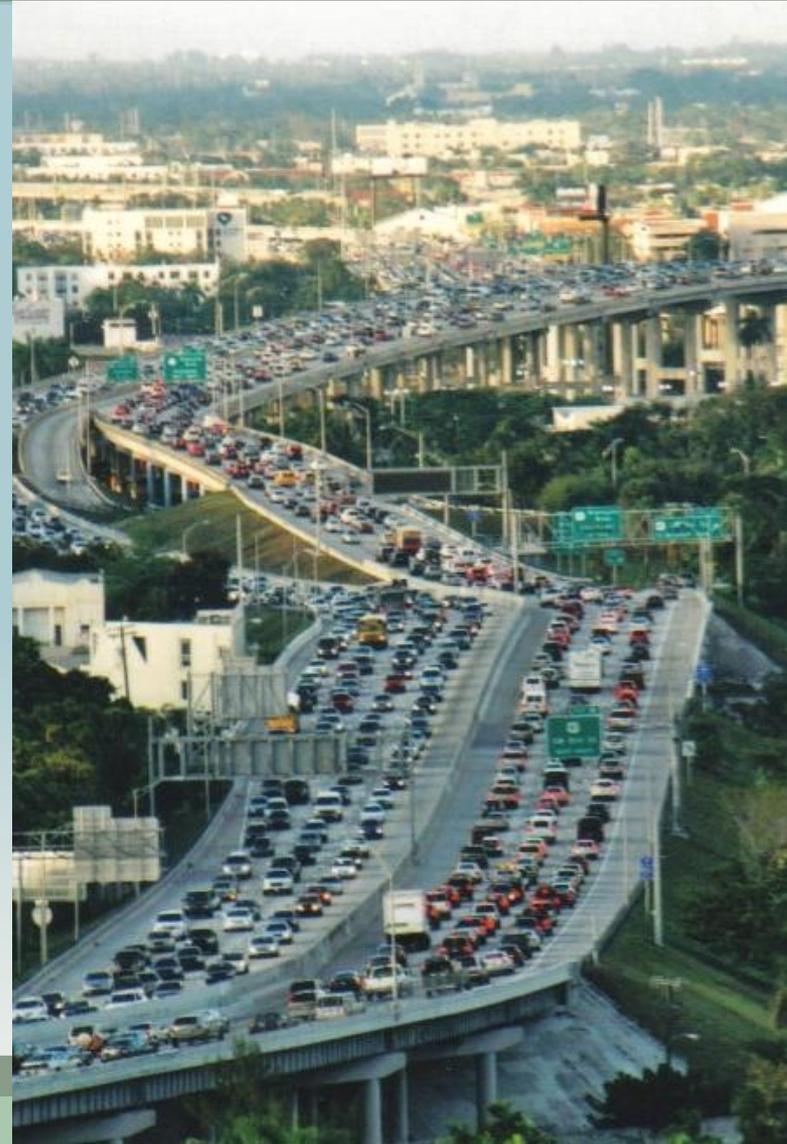
DISTRICT SIX TSM&O PROGRAM OVERVIEW

TSM&O Workshop
June 12, 2012



WHY NOW?

- 18.9 million people
- 536 million miles
- 216 million gallons
- 274 million person-hours
- \$6.4 billion
- 10/328
- 7/328
- \$6 - \$7 million/mile
- 9:1 vs. 2.7:1



TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS

- Integrated approach to maximize utility of existing infrastructure
 - Preserve and enhance safe, reliable movement of people and goods through operational strategies
- Strategies include
 - Demand Management
 - Freeway and Arterial Management
 - Traveler Information
 - Transit Operations & Management

D6 TSM&O MISSION AND VISION

Mission

Optimize the safety, mobility and reliability performance outcomes of South Florida's transportation system through the timely implementation of TSM&O strategies.

Vision

Manage and operate a nationally recognized integrated regional transportation system which optimizes transportation performance.

D6 TSM&O STRATEGIC PLAN

Objective 1

The Program should provide guidance for the identification, evaluation and prioritization of all TSM&O-related projects, project components, resource needs, operating and management plans, and research.

D6 TSM&O STRATEGIC PLAN

Objective 2

Develop, implement and maintain a Performance Monitoring Program for gathering, storing, analyzing and processing data into measurable performance indicators, and for supporting active operations management and planning.

D6 TSM&O STRATEGIC PLAN

Objective 3

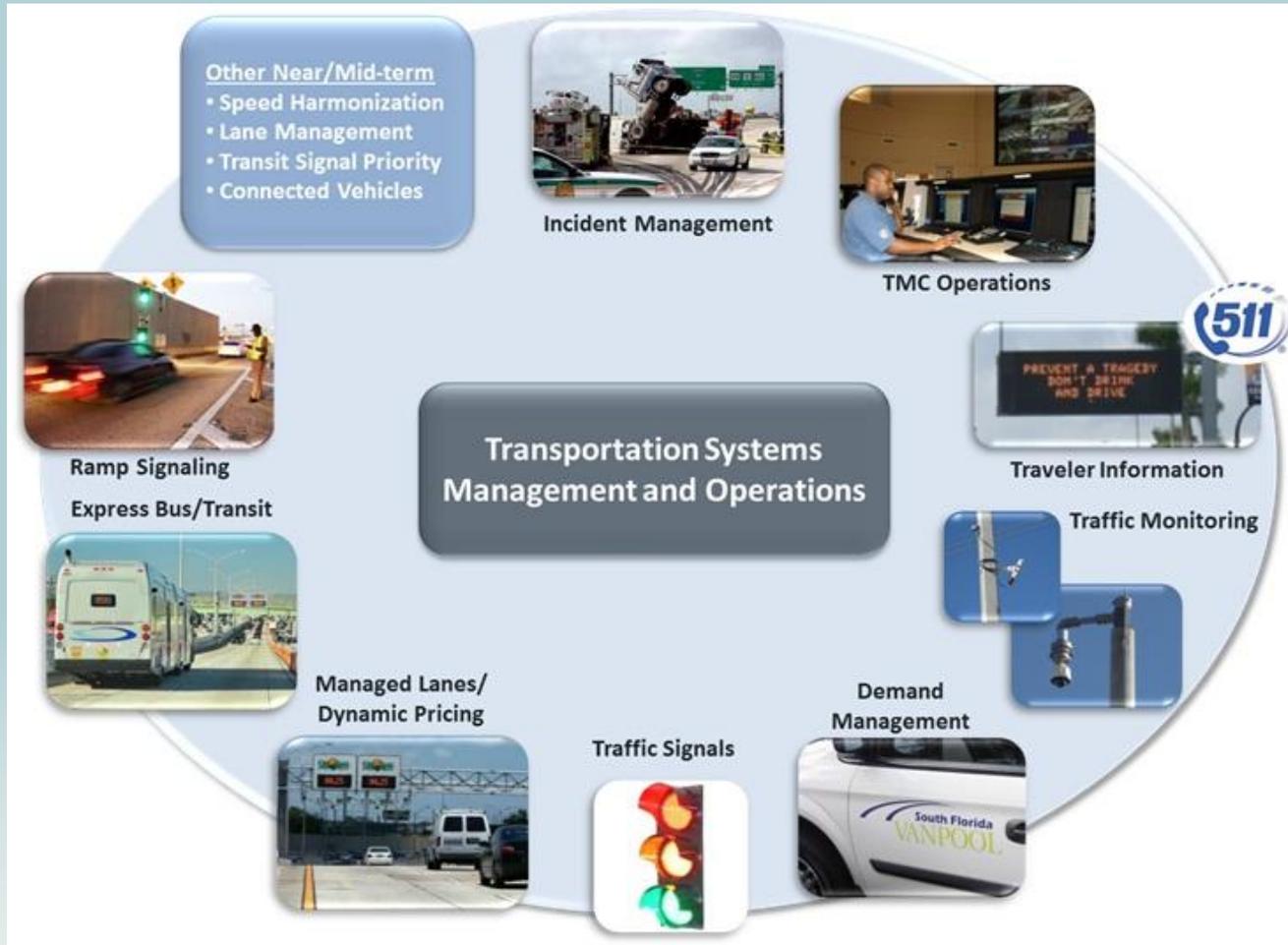
Integrate Planning and Operations.

D6 TSM&O STRATEGIC PLAN

Objective 4

Establish a structure for managing the learning, updating, growing and change processes for the Program.

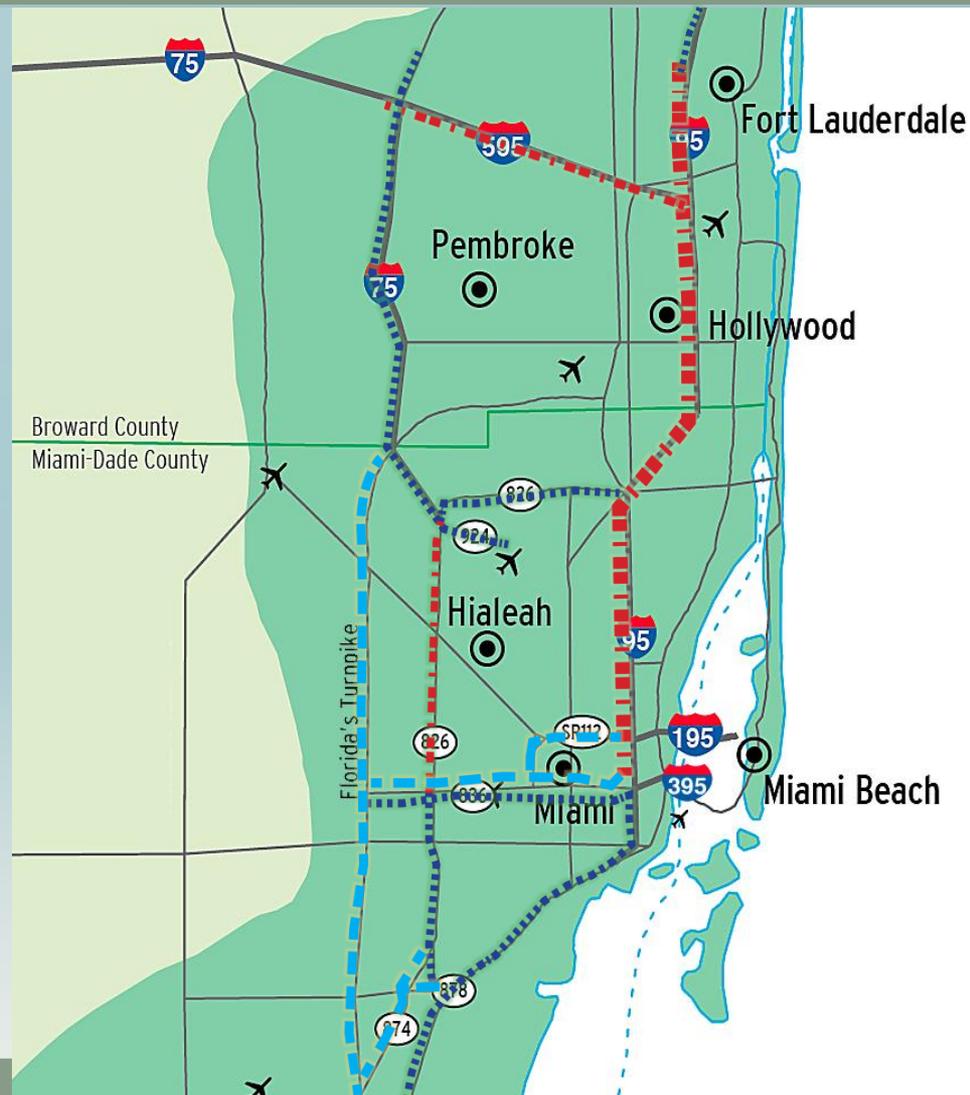
DISTRICT 6 TSM&O TOOLBOX EXAMPLES





REGIONAL EXPRESS LANE NETWORK

- Connecting Facilities
- On-going Development and Future Operations
 - Enhance Mobility
 - Seamless Operations
 - Establish Interagency Agreements
 - Prioritize Investments
 - Establish Performance Metrics





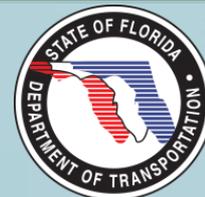
REGIONAL EXPRESS LANE NETWORK

- Regional Concept of Transportation Operations Study

- NTP issued in 02/2012
- Completion Anticipated by early 2013

- Regional ConOps

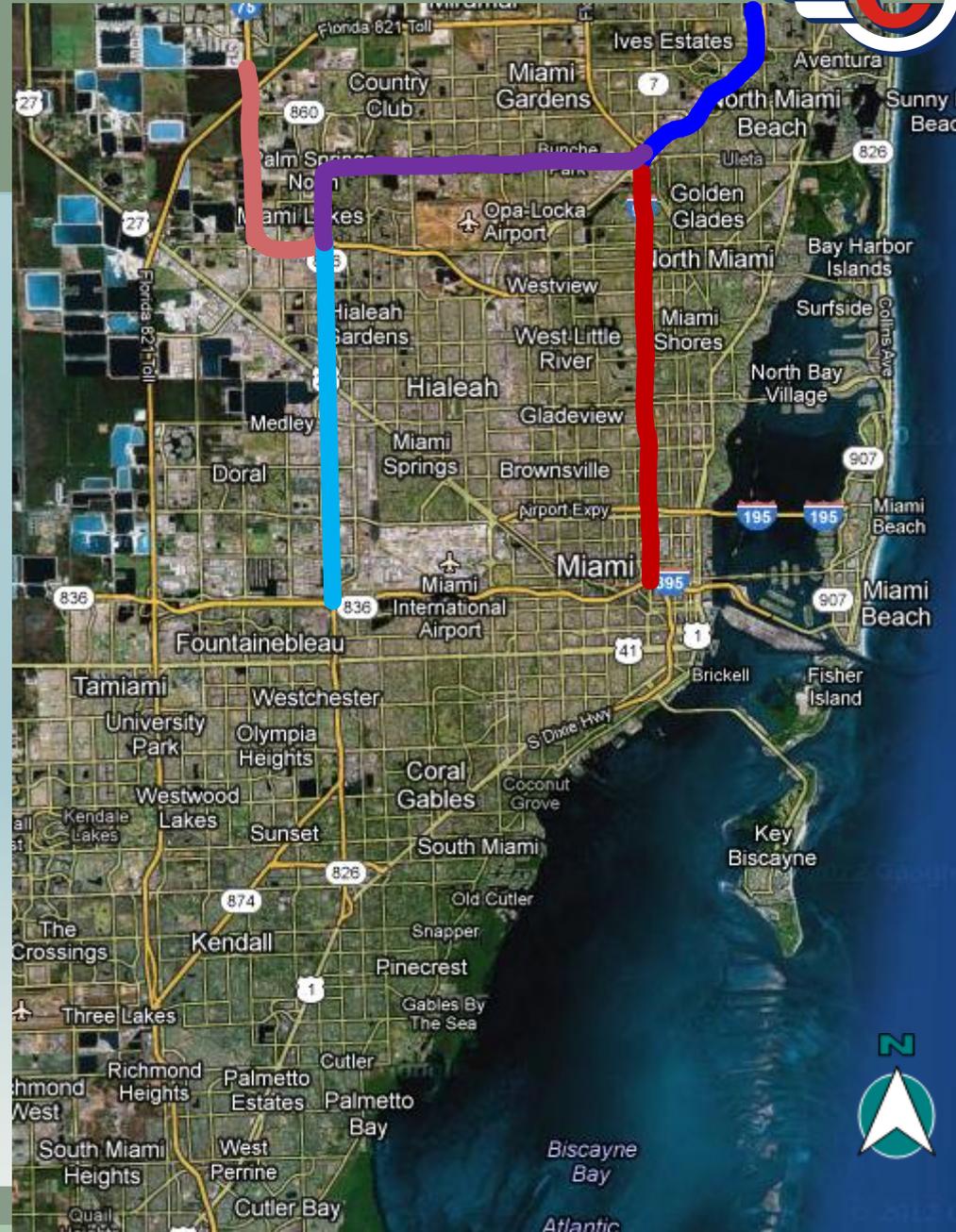
- Defines Roles & Responsibilities
- Details the Issues and Agreements
- Establishes a Framework for Future





D6 EXPRESS LANES PROJECTS

- I-95 Express Phase 1 (operational)
- I-95 Express Phase 2 (underway)
- I-75 Managed Lanes (ML) Potential P3
- Palmetto ML
 - SR 836 to I-75 PD&E/Potential P3
 - I-75 to I-95 PD&E





95 EXPRESS

WHY AND HOW

- Congestion & Trip Reliability
- Transit & HOV Lane Performance
- Widening Prohibited
- Costly Alternatives
- Urban Partnership Agreement
- Demand Management
- DBF with Rapid Delivery
- Concurrent Deployments of Multiple Strategies
- Freeway & Transit Operations Management



Transportation Systems Management & Operations

Managing and Operating for an Efficient Transportation System



95 EXPRESS

95 EXPRESS

Tolling/Dynamic Pricing



Ramp Signaling



Express Bus/Transit



Demand Management





95 EXPRESS

PERFORMANCE UPDATE

Average Speed (MPH)

	2008 HOV Study ¹				FY 2009 ³				FY 2010 ⁴			
	SB		NB		SB		NB		SB		NB	
	HOV	GPL	HOV	GPL	EL	GPL	EL	GPL	EL	GPL	EL	GPL
AM Peak Period ²	20.3	15.3	/	/	--	--	/	/	63.7	51.0	/	/
PM Peak Period ²	/	/	18.1	18.8	/	/	56.7	41.3	/	/	55.8	41.3
Overall	--	--	--	--	--	--	61.1	54.9	64.3	57.5	61.6	56.7



Average Volume (vphpl²)

	2008 HOV Study				FY 2009				FY 2010			
	SB		NB		SB		NB		SB		NB	
	HOV	GPL	HOV	GPL	EL	GPL	EL	GPL	EL	GPL	EL ¹	GPL
AM Peak Period	1,548	1,331	/	/	--	--	/	/	1,244	1,607	/	/
PM Peak Period	/	/	1,455	1,597	/	/	1,152	1,347	/	/	1,236	1,346
Overall (Weekdays)	--	--	--	--	--	--	472	963	543	1,135	522	941



Transportation Systems Management & Operations

Managing and Operating for an Efficient Transportation System



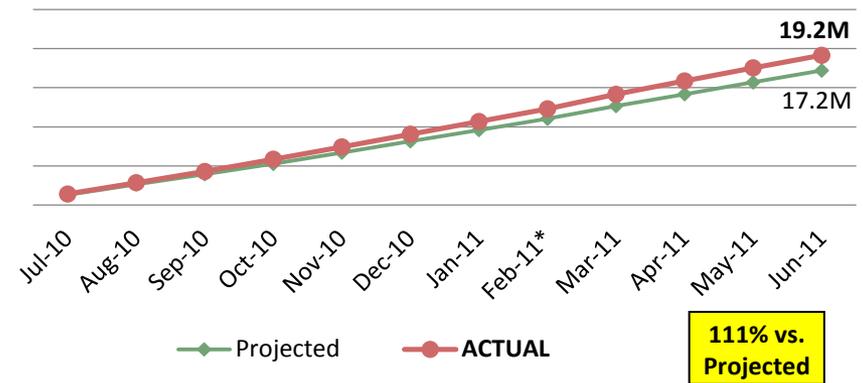
95 EXPRESS

PERFORMANCE UPDATE

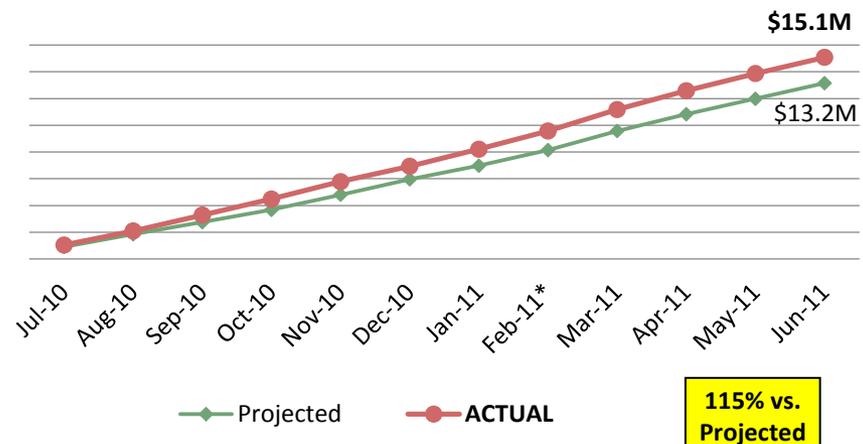
- Volume
 - 1.6 Million Trips/Month
 - 21% Increase
- Revenue
 - \$1.3 Million/Month
- Peak Period Benefits
 - 12/15 MPH
 - Person Throughput



FY 2011 Cumulative Monthly EL Traffic Volume
Projected vs. Actual (Millions)



FY 2011 Cumulative Monthly EL Revenue
Projected vs. Actual (\$Millions)





PERFORMANCE UPDATE

Peak Period¹ Person Throughput Comparison with Express Bus Ridership

	SOUTHBOUND				NORTHBOUND			
	General Purpose Lanes		HOV/ Express Lanes		General Purpose Lanes		Express Lanes	
	2008	2010	2008 ²	2010	2009 ³	2010	2009 ³	2010
Volume	4,740	6,506	1,300	3,051	6,863	7,032	2,322	2,594
AVO	1.15	1.17	2.20	1.30	1.39	1.32	1.39	1.45
Person Throughput	5,452	7,610	2,353	4,132	9,540	9,280	3,228	3,829
Lane Group $\Delta / \Delta\%$ ⁴	+2,158/+40%		+1,779/+76%		-260/-3%		+601/+19%	
By Direction $\Delta / \Delta\%$	+3,937/+50%				+341/+3%			
Overall $\Delta / \Delta\%$	+4,278/+21%							

Source: FDOT 2008 HOV Study and 2010 HOV Study

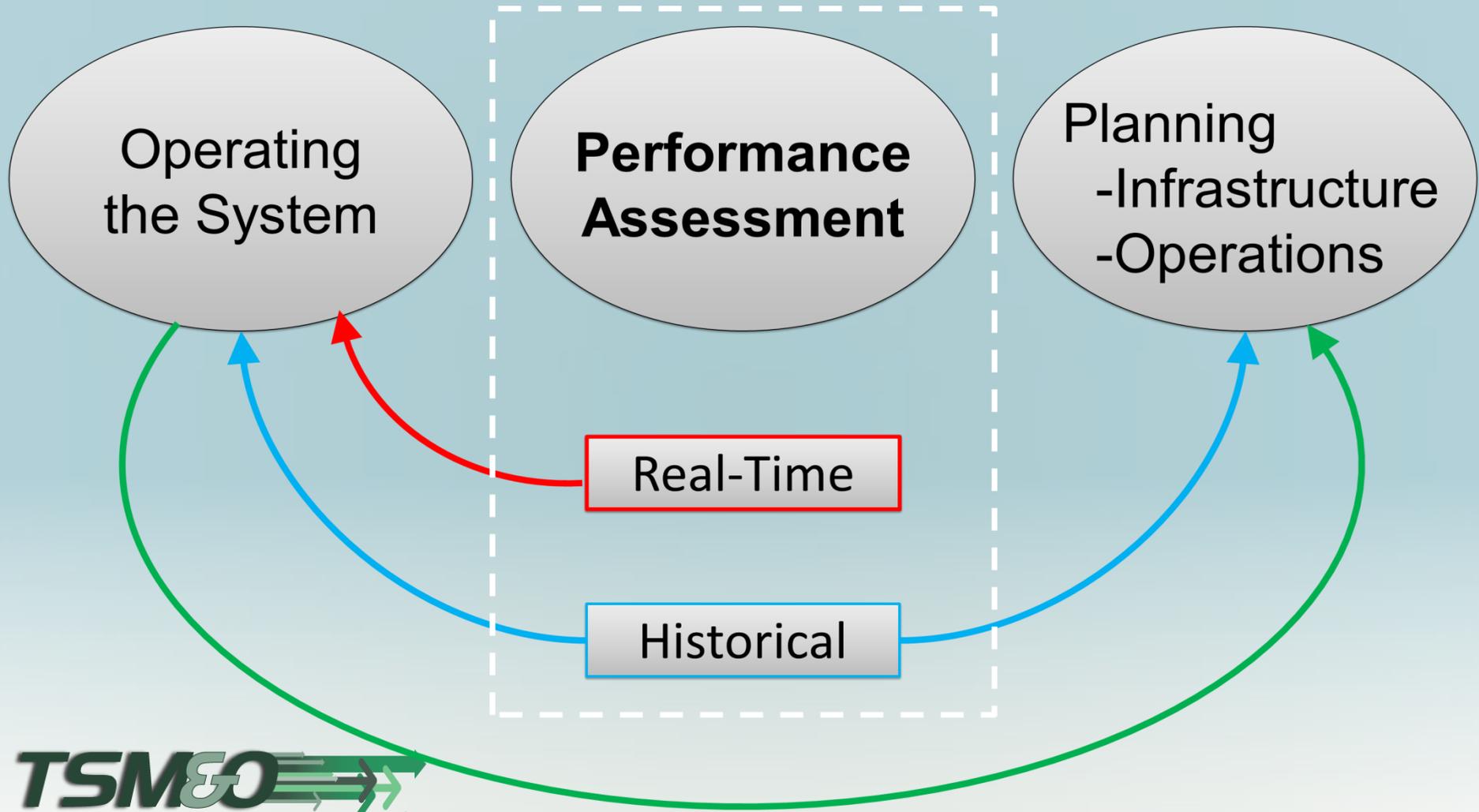
¹Southbound values represent AM Peak Period; northbound values represent PM Peak Period

²HOV lane was a single lane in each direction in 2008

³Northbound values compared to values shown in 95 Express Midyear Report dated October 2009

⁴ $\Delta / \Delta\%$ = Change/ Percent Change

PERFORMANCE BASED OPERATIONS AND PLANNING



SYSTEM EVOLUTION

95 Express Phase 2 Extension

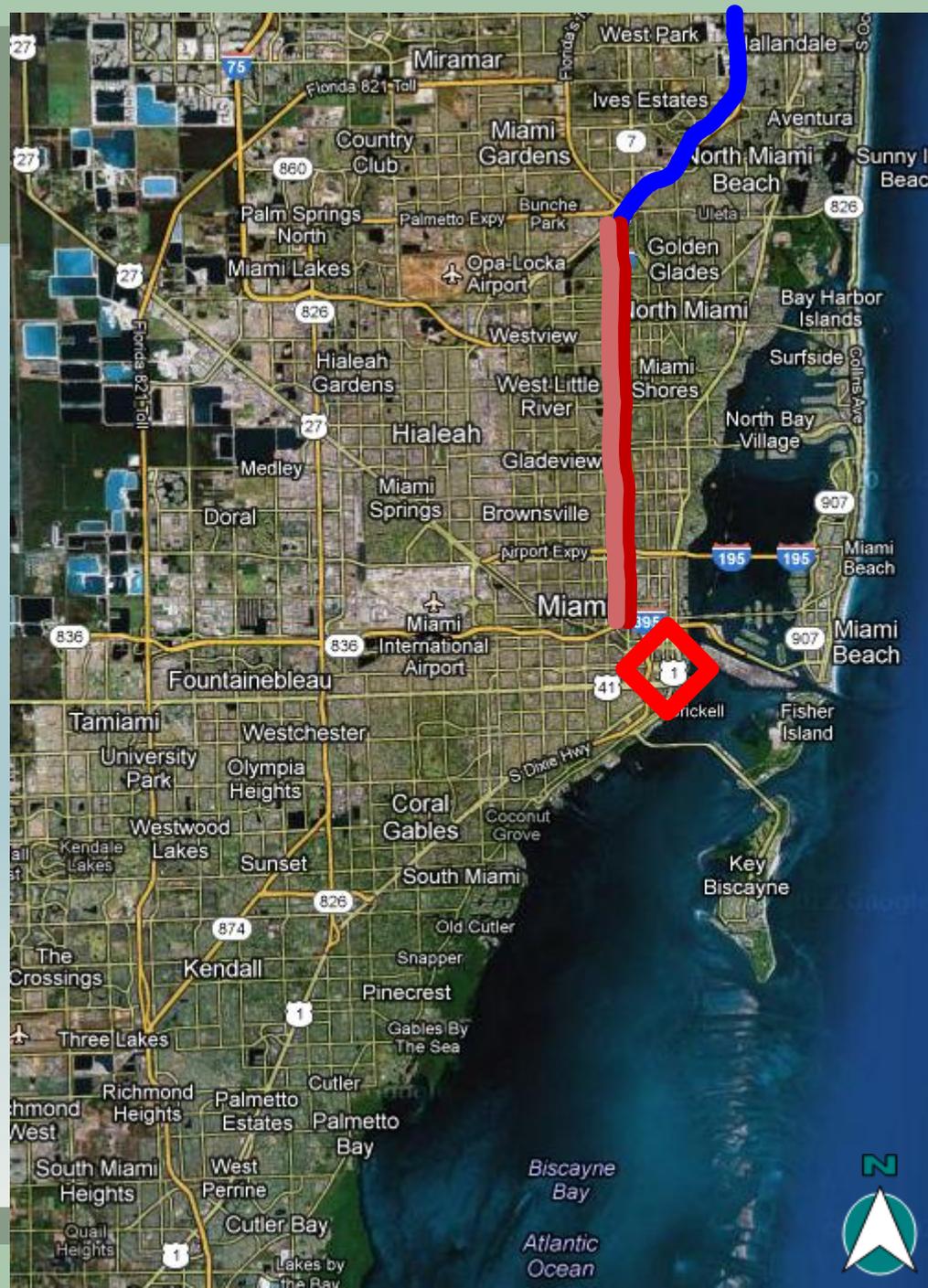
- Connect to I-595 Express
- Construction phase

SR 7 / I-95 Corridor

- Integrated Corridor Management Approach
 - Proof of concept
 - Arterial
 - Limited Access
 - Transit Bus
 - Tri-rail
 - Park & Ride

CBD Accessibility/Reliability

- Impact of Parking Supply and Demand Management
 - FDOT funded research
 - Final recommendation phase



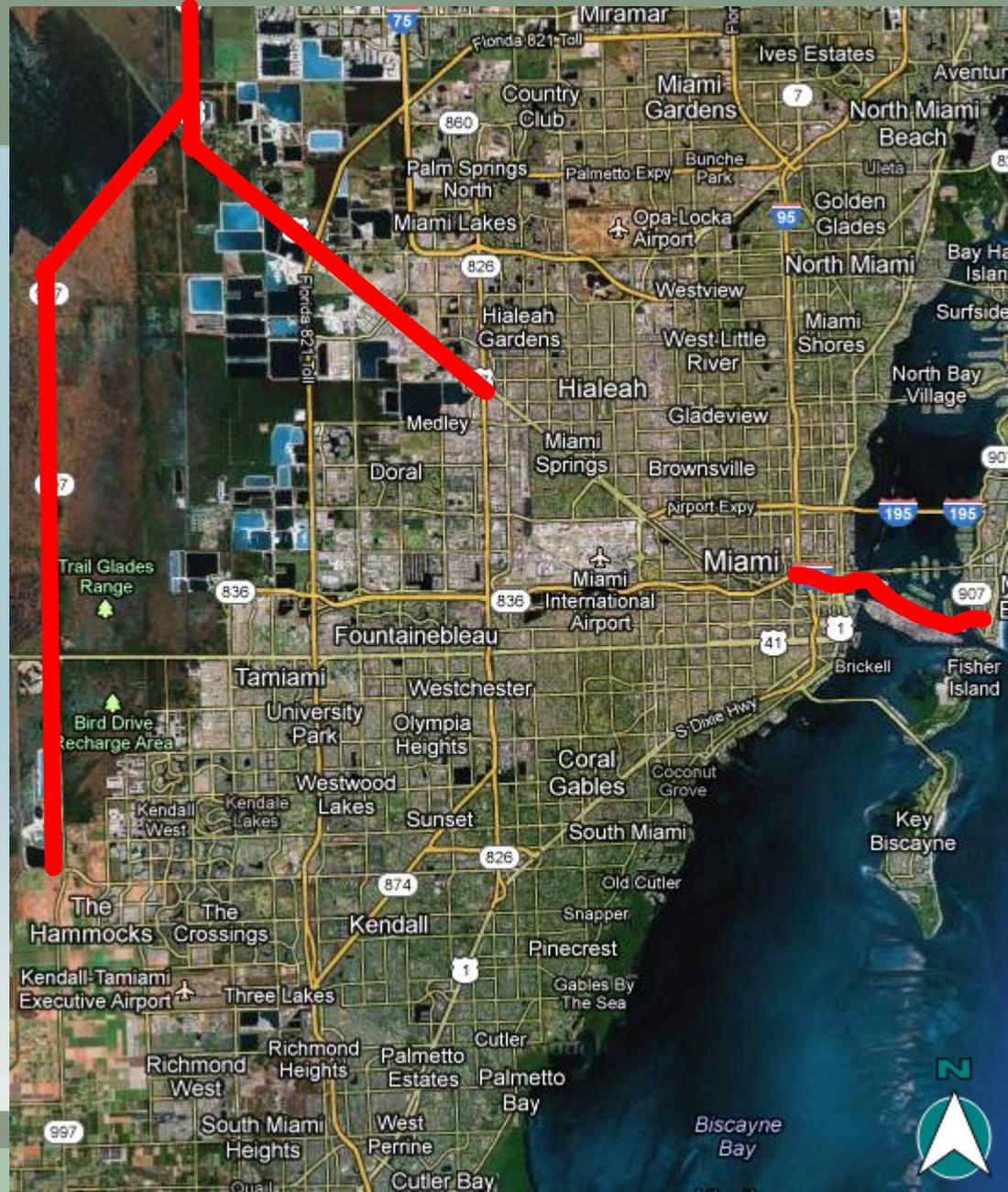
OTHER TSM&O COMPONENTS

- Incident Management (RISC, IRV, RR)
- Traveler Information (511, DMS, web, text alerts)
- Special/Weather Event Management
- Work Zone Management



ARTERIAL MANAGEMENT

- Incident Management Program - Arterial RISC
 - Krome Avenue
 - US 27
 - MacArthur Causeway
- Arterial System Management Master Plan



ARTERIAL MANAGEMENT

- Performance Measurement
 - Technology Evaluations
 - Bluetooth
 - INRIX
 - MVDS
- Pilot TSM&O Deployment Corridors
 - US 1
 - SR 7



ARTERIAL MANAGEMENT

- ATMS Project
 - By Miami-Dade County
 - Ongoing / 6-year plan
 - Upgraded controllers
 - Upgraded communication infrastructure
 - Add video monitoring and new TMC
 - Test adaptive software
 - Expand emergency vehicle signal priority system
 - Expand bus priority system

SUCCESS FACTORS

- Recognize that TSM&O is a paradigm shift
 - Operating in a data rich environment
 - How do we use this data to make better decisions for the benefit of our customers?
- Organizational commitment
 - Interagency coordination
 - Culture of collaboration
 - Work-force / organizational alignment
 - Significant emphasis on operations and maintenance



QUESTIONS?

Maximizing the Utility of Transportation Infrastructure
Offering Users a Predictable, Reliable Choice
Addressing the Congestion Problems of the Region

