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**



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



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 copperbased 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)









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











The Present Broward Traffic Management Center



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



Enhanced Operation

Integration of intelligent transportation system (ITS) technologies

Celebrating

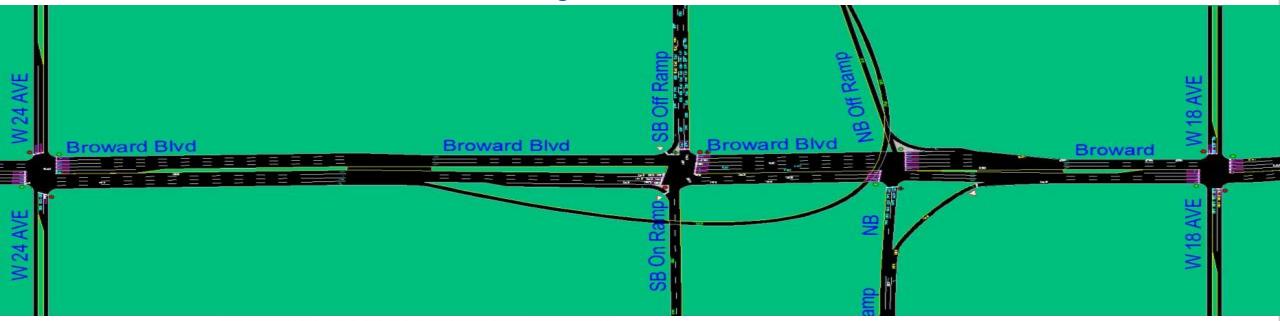
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- Video, radar and thermal-based detection systems
- Remote troubleshooting
- Advanced programming options



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



Integrated Arterial Management and Operations

- Real-time coordination with FDOT Freeway and Arterial Management Programs
- Quicker response to incidents and equipment damage

Celebrating

- Synchronized timing plans for special events
- Municipal planning and partnerships



Is Based on Partnership

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





CITY OF FORT LAUDERDALE





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					
	Time Frame	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



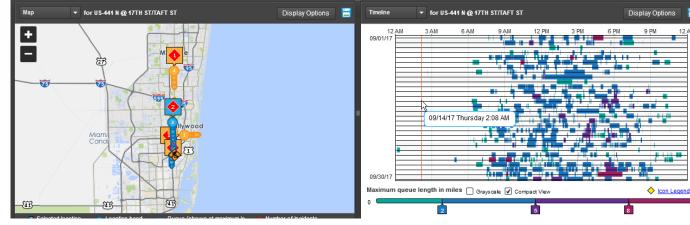
Mobility Through Real-Time Data Analytics

- Google
- Waze
- RITIS
 - Inrix
 - HERE

#1 Bottleneck Ranking - Using HERE data

Bottleneck Ranking Table for SR-842 between SR-817/University Dr and US-1/Federal Hwy/6Th Ave, SR-838 between US-1/Federal Hwy and US-441/SR-7/40Th Ave, SR-816 between SR-817/N University Dr and US-1/SR-5/N Federal Hwy, US-1 between SR-816/Oakland Park Blvd/31St St and E Broward Blvd, SR-817 between SR-842/Broward Blvd and SR-816/Oakland Park Blvd, US-441 between SR-824/Broward Blvd and SR-816/31St St/Oakland Pk Blvd, SR-858 between US-441/SR-7/S 60Th Ave and SR-816/Oakland Park Blvd, US-441 between SR-824/Broward Blvd and SR-816/31St St/Oakland Pk Blvd, SR-858 between US-441/SR-7/S 60Th Ave and SR-816/Oakland Park Blvd, US-1/SR-5/S 18Th Ave/Federal Hwy, SR-820 between Dykes Rd/160Th Ave and US-1/Federal Hwy/Young Cir, US-441 between SR-858/Miramar Pky and SR-870/50Th St/Commercial Blvd, SR-817 between SR-856/Miramar Pky and SR-816/Oakland Park Blvd, US-1 between SR-854/203Rd St and Taft St, and SR-818 between US-441/SR-7 and SR-817/University Dr between Sptember 1, 2017 and September 30, 2017 (220 total)

Rank	Мар	Head Location (approximate)	v Impact 🌖	Aver 🌗	Averag 🌗	Total duration 🌗	A 🌗	Speed-Diff 🕕	Speed-P 🌗	Volume E 🌗	Delay Surrogate 🌗	External Tool L
1	v	FL-858/HALLANDALE BEACH BLVD W @ I-95	29,087.89	1.94	8 h 48 m	11 d 00 h 05 m	1	415,631.29	38,279.41	23,908.00	9,936,912,770.60	-
2	✓	US-441 S @ FL-824/PEMBROKE RD	17,869.04	2.23	5 h 25 m	6 d 18 h 31 m	0	274,292.51	22,989.39	22,000.00	6,034,435,153.23	
3		US-441 N @ 17TH ST/TAFT ST	15,932.43	2.36	4 h 40 m	5 d 20 h 19 m	2	231,801.24	18,714.54	26,953.00	6,247,738,797.35	
4	✓	US-441 N @ FL-870/50TH ST/COMMERCIAL BLVD	15,643.50	2.39	4 h 12 m	5 d 06 h 05 m	1	231,094.52	18,222.09	28,900.00	6,678,631,700.02	
5		US-1 S @ FL-854/203RD ST	15,611.66	2.25	4 h 07 m	5 d 03 h 31 m	1	231,370.32	18,005.42	17,024.00	3,938,848,275.88	M 🔝
6		FL-820 W @ FL-823/FLAMINGO RD	15,314.06	2.16	4 h 40 m	5 d 20 h 10 m	10	284,577.30	18,016.17	23,625.00	6,723,138,643.44	Marka 🔤
7		FL-817 S @ ORANGE DR/45TH ST	14,507.10	2.88	3 h 19 m	4 d 03 h 34 m	3	272,408.37	18,296.90	27,407.00	7,465,896,111.16	
8		US-441 S @ FL-816/W OAKLAND PARK BLVD/	14,479.76	2.43	3 h 43 m	4 d 15 h 36 m	1	240,081.42	17,391.25	24,788.00	5,951,138,185.59	





LAKE RIDGE

Rocco's Taco:

Broward Health Medical Center O The Galleria at Fort Lauderdal

> Sert Lau Marriott

Fort Lauderdale Beach

NW 14th

NW 7th St

O Dillard

RIVERBEN

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Mobility Through Intelligent Systems

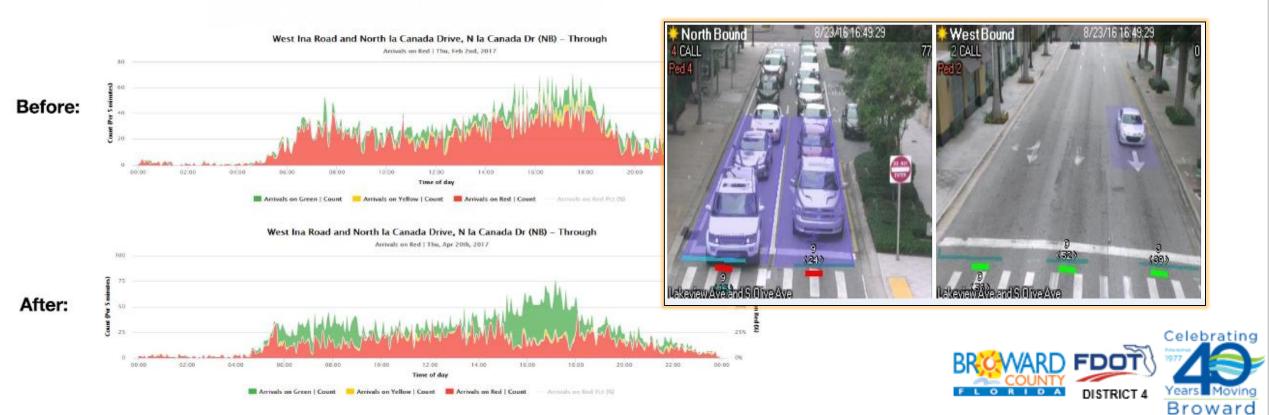
- Freight Mobility and Management
- Moveable Bridge ITS
- At Grade Railroad ITS



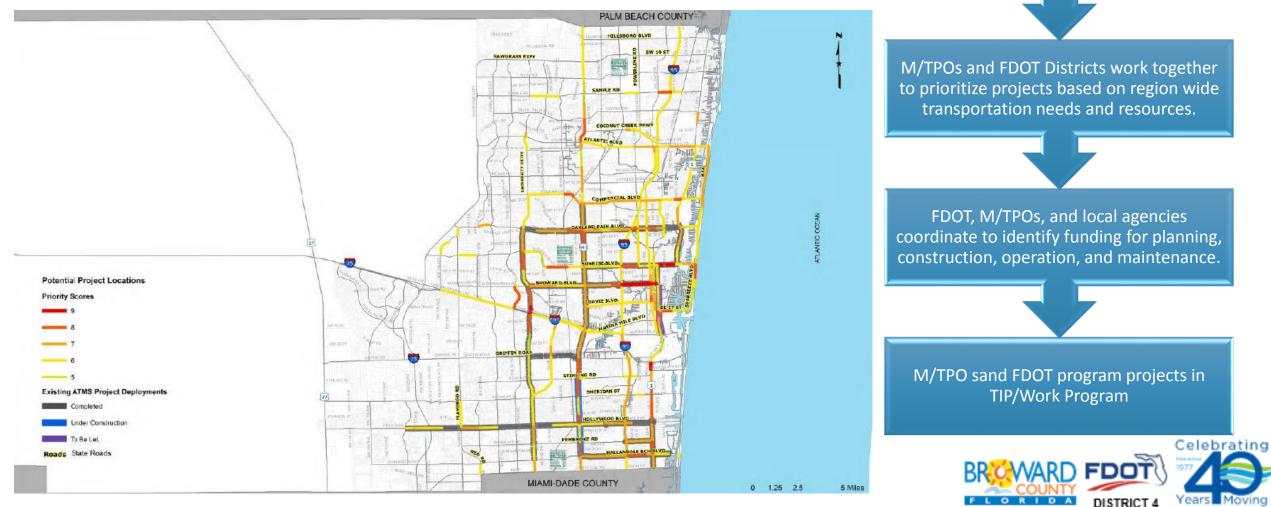
DISTRICT 4

Broward

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

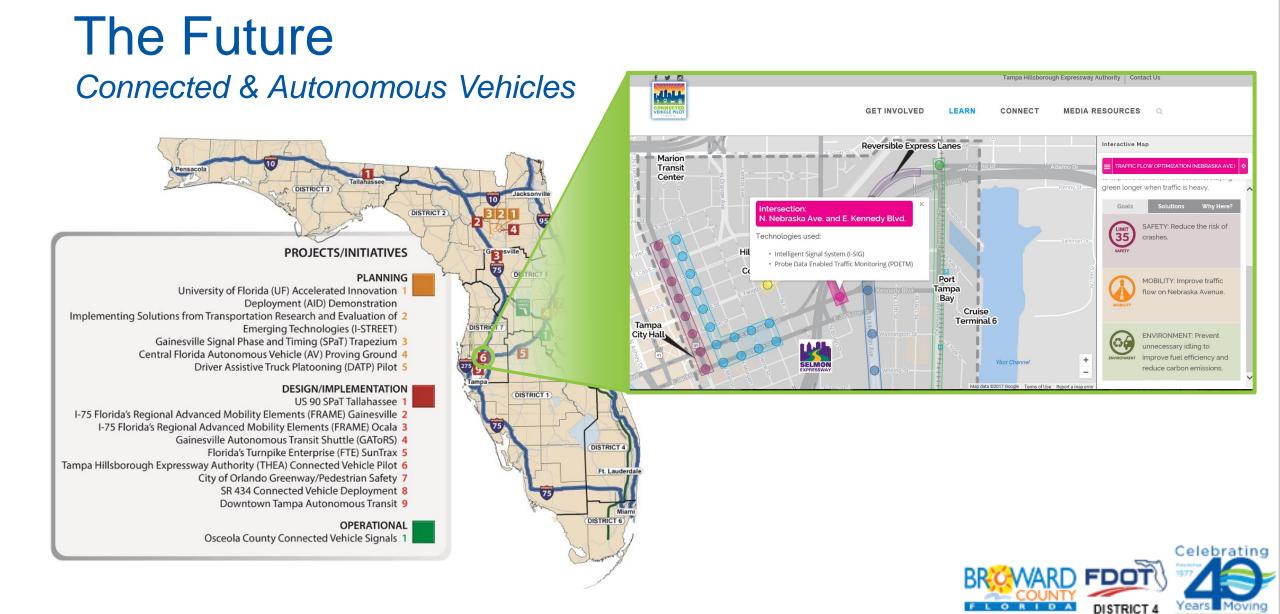


The Future FDOT District 4 TSM&O Master Plan



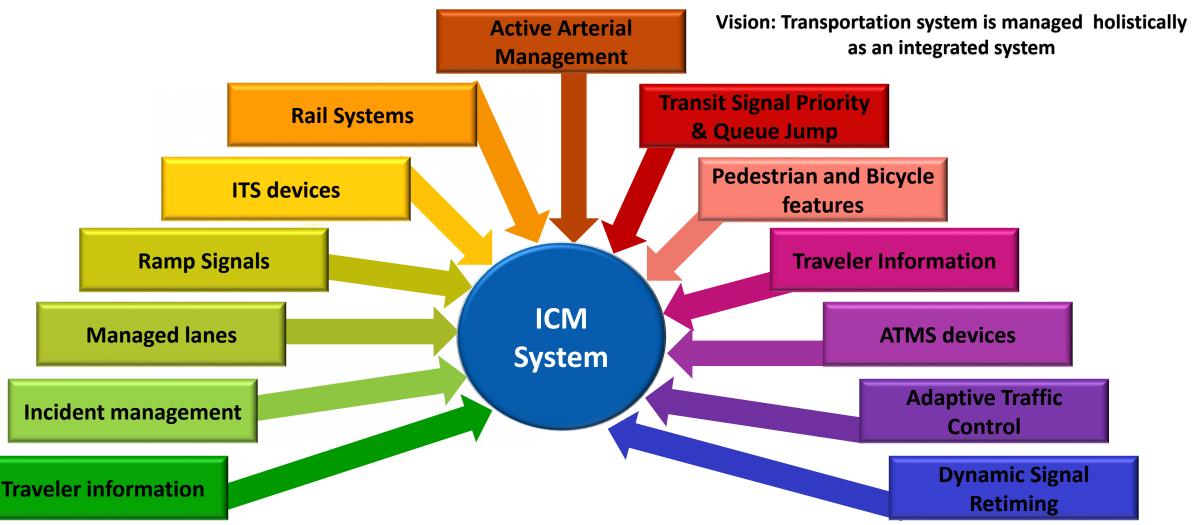
TSM&O projects identified by FDOT, M/TPOs, or local agencies.

Broward



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Integrated Corridor Management (ICM)



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