

Palm Beach County Traffic Signal Systems

Current Operations and Future Outlook



Engineering & Public Works Department
Traffic Division



TPA Governing Board Meeting
May 19, 2022

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Overview

- PBC Traffic Division Overview
- Traffic Signal Systems & Intelligent Transportation Systems (ITS)
- Active Arterial Management Program
- Ongoing Efforts & Future Outlook

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Palm Beach County Engineering & Public Works Department - Traffic Division



Intelligent Transportation System

- real time control and monitoring of 850 traffic signals, 180 CCTV installations and other ITS devices connected over 470 miles of fiber-optic communications network



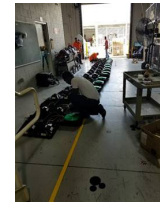
- Roadside Vendor Program
- Traffic Calming Program
- Annual Pathway Program

- Designing, installing, and maintaining
 - Signalization of more than 1,100 traffic signal devices and over 70 coordinated signal systems
 - Pavement markings
 - Signing



Traffic Analysis and Performance Standards

- Major road construction projects
- Land development
- Site planning
- Transportation planning
- Street Lighting
- Traffic Accident Records



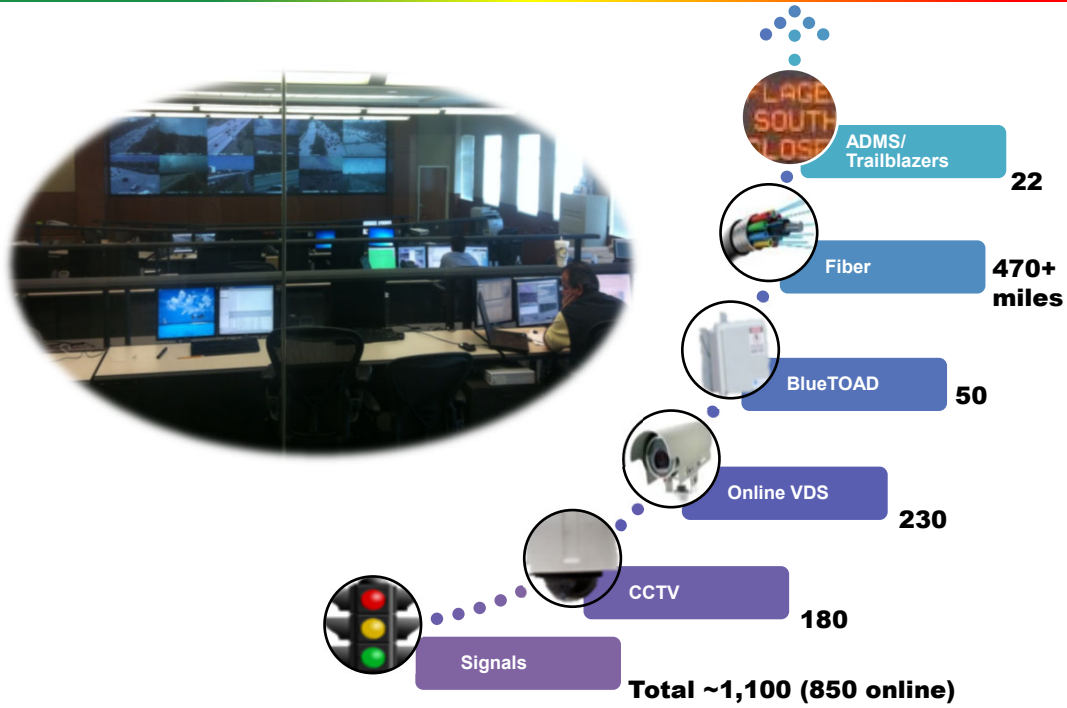
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Traffic Signal System – Operation & Maintenance Responsibilities

- Approximately **1,200** total traffic signals and school flashers
- About **40%** of all devices fall on the State Highway System (**SHS**). PBC operates and maintains on behalf of the Florida Department of Transportation (FDOT) through a Traffic Signal Maintenance and Compensation Agreement
- With the exception of the City of Boca Raton and the Town of Palm Beach, PBC assumes operation and maintenance responsibilities of traffic signals in all other municipalities for virtually no cost to them

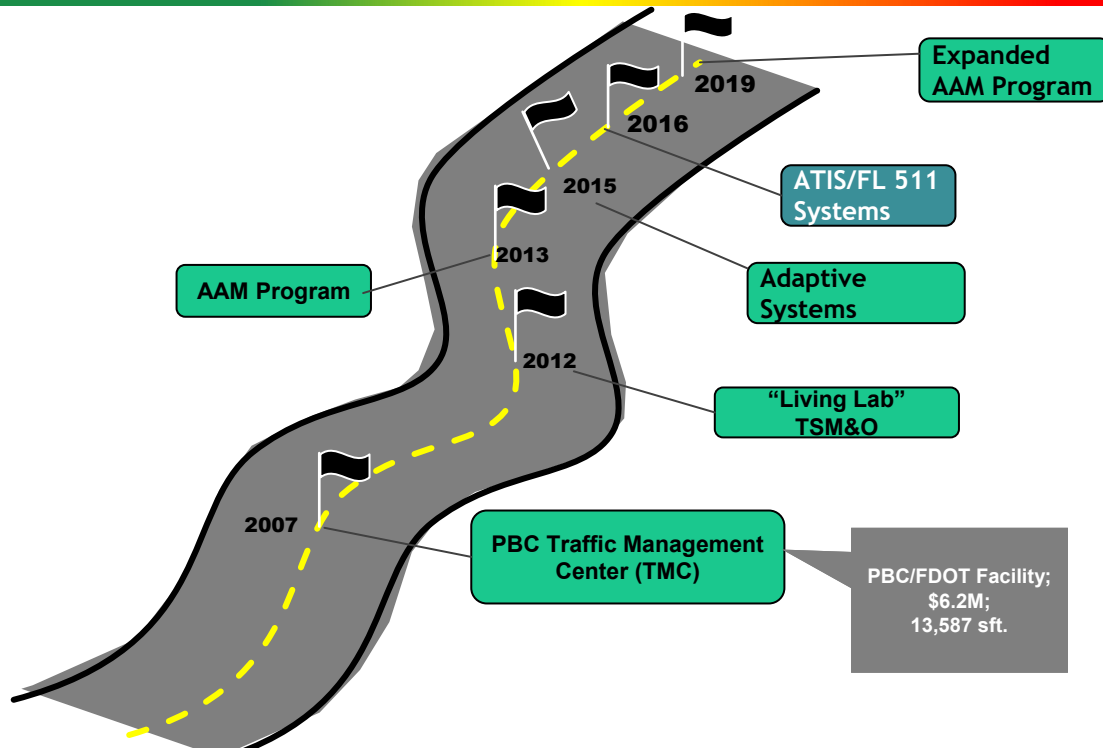
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Devices & ITS Systems



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"Road Map" ...



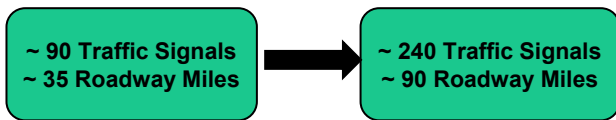
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Active Arterial Management (AAM) Program

- **Proactive System:** maximize safety and throughput while minimizing delays
- **Performance Based:** goal of improving travel time and travel time reliability
- **Integrated Program:** to optimize the performance of existing multimodal infrastructure

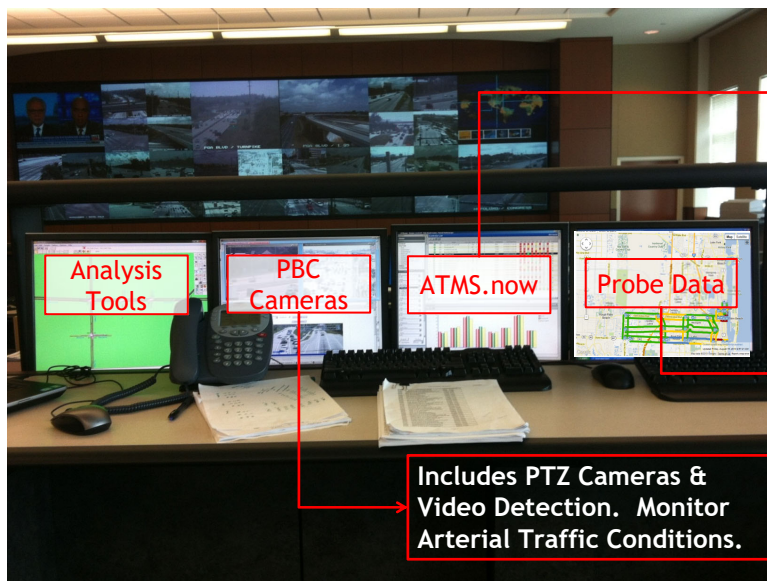


2019: Expanded Program



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Active Arterial Management (AAM) Program



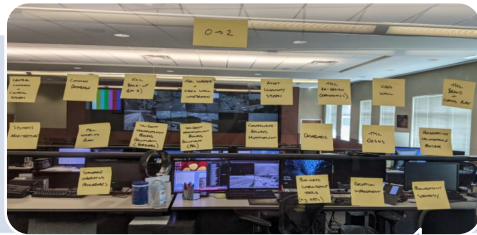
Monitor and adjust signal timing in real-time

- Travel-Time Data
- Speed Data
- Real Time Status of arterials
- Travel Time Reliability Measures



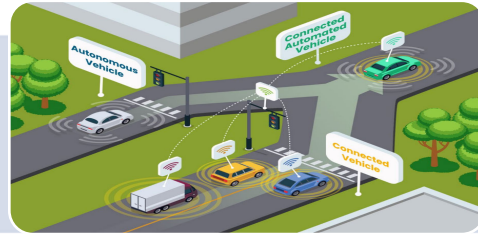
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Ongoing Efforts & Future Outlook



Infrastructure

- TMC Revamp: update 2007 configuration
- CCTV Camera Coverage: upgrade and expansion
 - *Active Arterial Management Expansion*
- Advanced Traffic Controllers: expanded features; proper protocols for future applications; standard intended for open architecture



Technology

- Smart Tools: Probe Analytics vs. Hardware
- Transit Signal Priority (TSP)/Emergency Vehicle Preemption (EVP)
- Connected Vehicle Technology: 2018 PBC initiative pending
- FDOT Pilot: Near-Miss Detection System

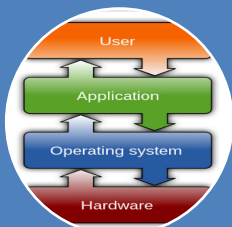
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Challenges moving forward...



Investing in Right Technology

- PBC's Adaptive Traffic Control Experience: *decommissioned*
- Connected Vehicle Applications: FCC '21 Ruling (DSRC vs. C-V2X)
- Vehicle Detection: alternate methods have not been reliable
- Data & Analytics: hardware investments likely no longer needed



Proprietary Nature of Industry

- Vendor-specific hardware and software
 - PBC's current vendor: utilized in **47** FL agencies; ~ **60K** traffic signals nationwide (out of approx. 300K traffic signals)



Operations & Maintenance

- Costs
- Systematic Replacements & Upgrades: *short life cycle*

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2022 INRIX US Signals Scorecard

Regionally: PBC's traffic signal performance exceeds that of neighboring counties (comparable characteristics, demand, patterns)

Statewide: FL had 9 intersections that made the top 25 worst urban signalized intersections (delay per vehicle). (5 in Miami-Dade, 2 in Broward)

MPOs Listed by Signal Count

MPO	Signals	D/V (Secs)	D/V Δ (%)	DHD/Signal	DHD/Signal Δ	Annual CO ₂ (Tonnes)	Annual Oil (Barrels)
Miami-Dade MPO	2,876	24.9	13%	209	63%	702,259	1,829,077
MetroPlan Orlando	1,973	21.4	16%	194	74%	447,625	1,165,867
Broward MPO	1,407	22.1	13%	243	80%	398,225	1,037,201
North Florida TPO	1,321	17.6	11%	141	38%	218,104	568,066
Palm Beach MPO	1,122	20.0	14%	198	67%	259,582	676,097
Hillsborough MPO	1,114	22.1	13%	199	71%	258,966	674,493
Pinellas County MPO	844	21.7	19%	181	72%	178,235	464,223
Sarasota-Manatee MPO	543	19.7	14%	190	65%	120,123	312,868
Polk County TPO	524	19.3	12%	153	44%	93,431	243,347
Space Coast TPO	486	17.5	8%	140	49%	79,344	206,658

'D/V' – Delay per Vehicle in Seconds
'DHD' – Daily Hours of Delay

Miami-Dade Co.: 2020: \$150 million to overhaul antiquated signal system

Broward Co.: Surtax funds to expand fiber optic network & add adaptive traffic control systems

Contact PBC's Traffic Division

Thank you. Questions?

Contact Us

Traffic Division

2300 North Jog Road, 3rd Floor
West Palm Beach, FL 33411

To report a traffic problem, you can contact the Traffic Division by email or phone as follows:

Damaged or Malfunctioning Traffic Signal or Sign

Email: ENG-FixTrafficSignal@pbcgov.org
Phone: [561-683-6885](tel:561-683-6885)

Traffic Signal Timing Concerns or Questions

Email: ENG-FixSignalTiming@pbcgov.org
Phone: [561-684-4030](tel:561-684-4030)

Street Light Repairs or Requests

Email: ENG-Streetlighting@pbcgov.org
Phone: [561-684-4030](tel:561-684-4030)

All Other Traffic Concerns

Email: ENG-TrafficDivision@pbcgov.org
Phone: [561-684-4030](tel:561-684-4030)