Advanced Traffic Management System (ATMS) Program Update

Presented to:

Pinellas Board of County Commissioners

May 1st, 2025

Pinellas County Public Works

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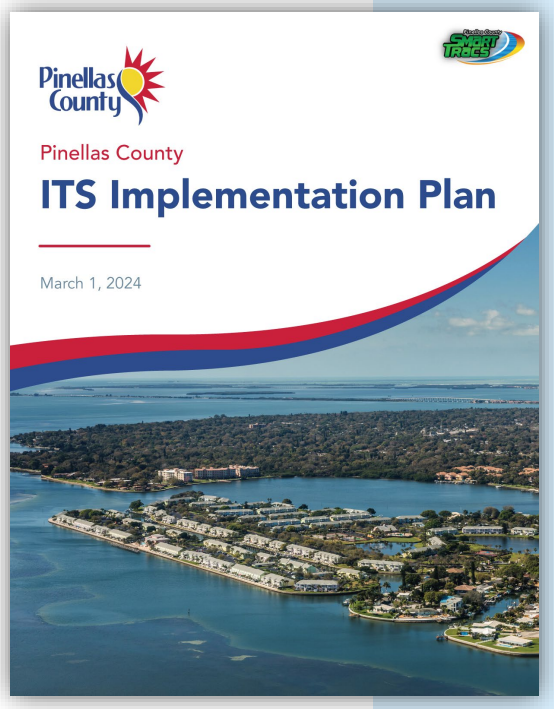
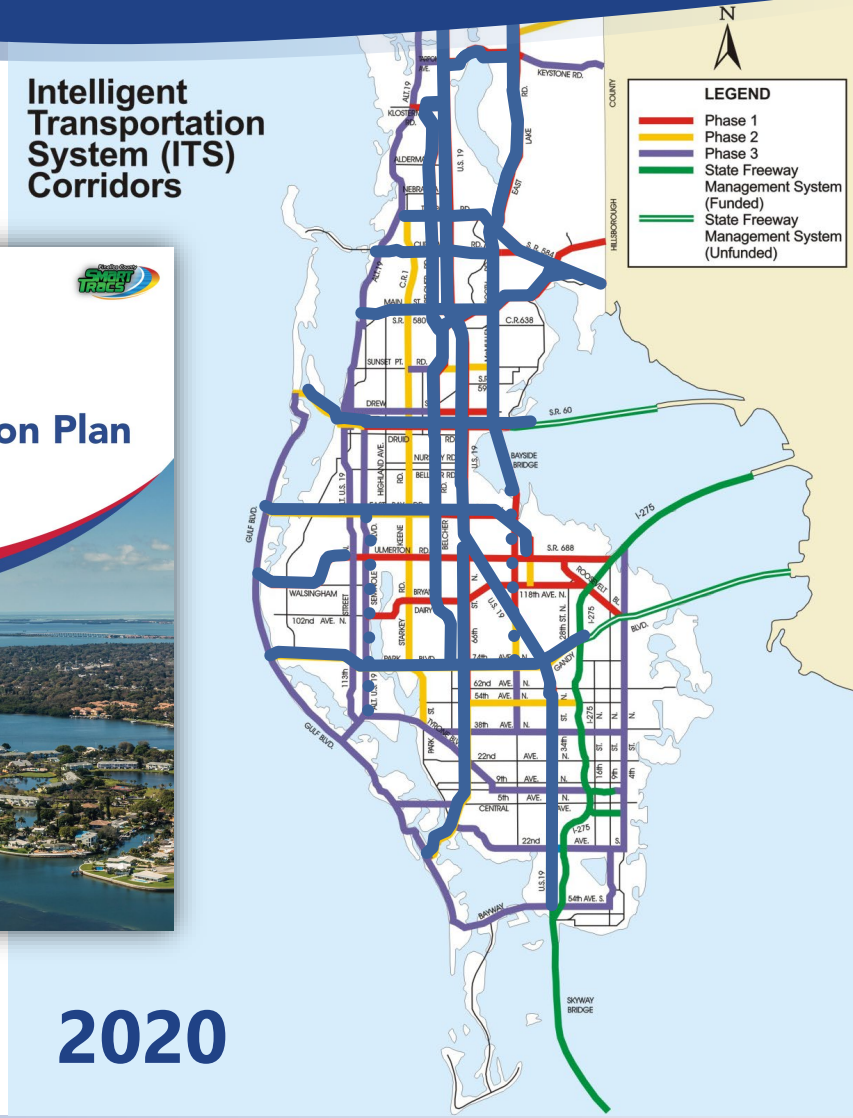
ATMS Program Update

Program Strategy

- **Focus on Arterials and Collectors**
- **Fiber Optic Communication Backbone**
  - **CCTV Cameras:** Complete video coverage of corridors
  - **Dynamic Message Signs:** Located strategically for evacuation and travel-time information
  - **Bluetooth Travel Time Sensors**
- **Traffic Control Center**
  - Includes workstations for **FDOT, St Pete, and Clearwater**





ATMS Program: FY23 – FY26

LOS Improvement Allocation: $18M

Corridor Retiming

- **250** Signals

FY 24 - 79 Signals / 8 Corridors

FY 25 Goal - 95 Signals / 8 Corridors

Video Analytics

- **390** Signals

FY 24 Goal - 6 Signals

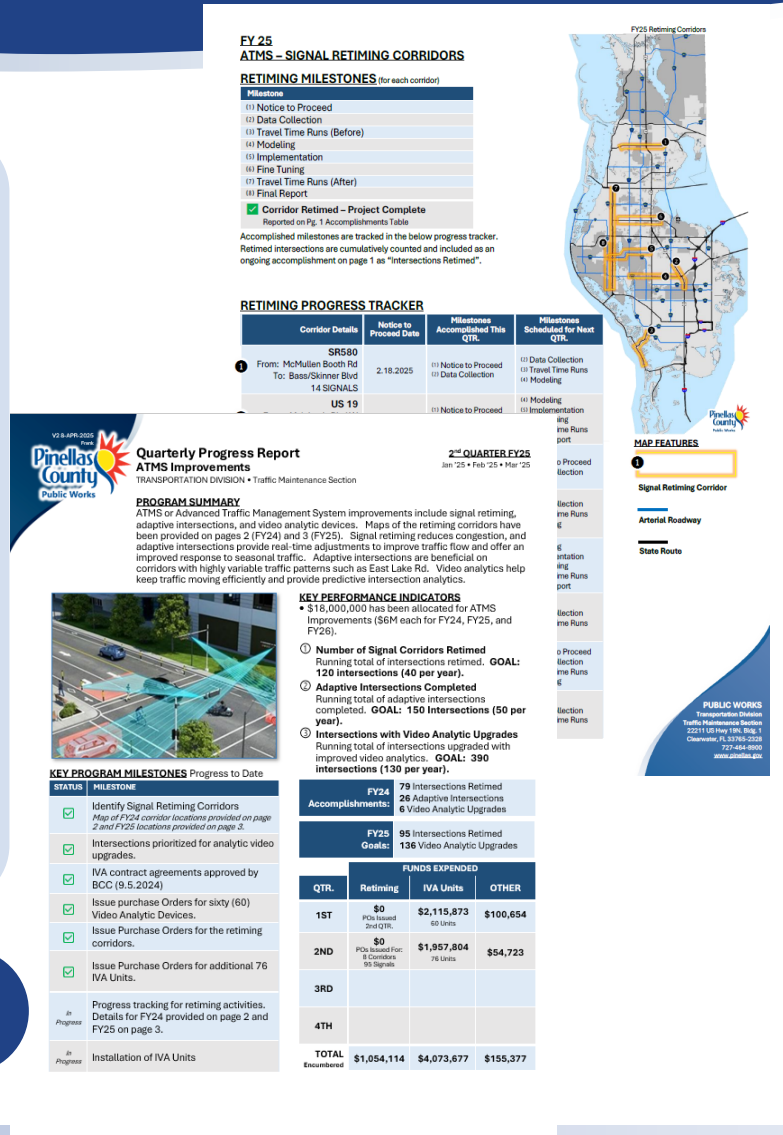
FY 25 Goal - 130 Signals

Quarterly Progress Updates

Projects

- SR 60 Smart Signal Corridor Project
- ATCMTD Smart Cities
- ATMS Projects: SR 580, Curlew Rd, Alderman Rd, & 113th St
- Emergency Vehicle Pre-emption Upgrade
- GIS Fiber Mapping

Ninth Cent Reauthorization: FY26



FY 25
ATMS – SIGNAL RETIMING CORRIDORS

RETIMING MILESTONES (for each corridor)

Milestone
(1) Notice to Proceed
(2) Data Collection
(3) Travel Time Runs (Before)
(4) Modeling
(5) Implementation
(6) Fine Tuning
(7) Travel Time Runs (After)
(8) Final Report
☑ Corridor Retimed – Project Complete

Reported on Pg. 1 Accomplishments Table

Accomplished milestones are tracked in the below progress tracker. Retimed intersections are cumulatively counted and included as an ongoing accomplishment on page 1 as "Intersections Retimed".

RETIMING PROGRESS TRACKER

Corridor Details	Notice to Proceed Date	Milestones Accomplished This QTR.	Milestones Scheduled for Next QTR.
SR580 From: McMullen Booth Rd To: Bass/Skinner Blvd 14 SIGNALS	2.18.2025	(1) Notice to Proceed (2) Data Collection	(2) Data Collection (3) Travel Time Runs (4) Modeling
US 19		(1) Notice to Proceed	(4) Modeling

FY25 Retiming Corridors

MAP FEATURES

Signal Retiming Corridor

Arterial Roadway

State Route

Quarterly Progress Report
ATMS Improvements
TRANSPORTATION DIVISION • Traffic Maintenance Section

2nd QUARTER FY25
Jan '25 • Feb '25 • Mar '25

PROGRAM SUMMARY
ATMS or Advanced Traffic Management System improvements include signal retiming, adaptive intersections, and video analytic devices. Maps of the retiming corridors have been provided on pages 2 (FY24) and 3 (FY25). Signal retiming reduces congestion, and adaptive intersections provide real-time adjustments to improve traffic flow and offer an improved response to seasonal traffic. Adaptive intersections are beneficial on corridors with highly variable traffic patterns such as East Lake Rd. Video analytics help keep traffic moving efficiently and provide predictive intersection analytics.

KEY PERFORMANCE INDICATORS
- $18,000,000 has been allocated for ATMS Improvements ($6M each for FY24, FY25, and FY26).

① **Number of Signal Corridors Retimed**
Running total of intersections retimed. **GOAL: 120 intersections (40 per year).**

② **Adaptive Intersections Completed**
Running total of adaptive intersections completed. **GOAL: 150 Intersections (50 per year).**

③ **Intersections with Video Analytic Upgrades**
Running total of intersections upgraded with improved video analytics. **GOAL: 390 intersections (130 per year).**

KEY PROGRAM MILESTONES Progress to Date

STATUS	MILESTONE
☑	Identify Signal Retiming Corridors *Map of FY24 corridor locations provided on page 2 and FY25 locations provided on page 3.*
☑	Intersections prioritized for analytic video upgrades.
☑	IVA contract agreements approved by BCC (9.5.2024)
☑	Issue purchase Orders for sixty (60) Video Analytic Devices.
☑	Issue Purchase Orders for the retiming corridors.
☑	Issue Purchase Orders for additional 76 IVA Units.
In Progress	Progress tracking for retiming activities. Details for FY24 provided on page 2 and FY25 on page 3.
In Progress	Installation of IVA Units

FY24 Accomplishments:	79 Intersections Retimed 26 Adaptive Intersections 6 Video Analytic Upgrades
FY25 Goals:	95 Intersections Retimed 136 Video Analytic Upgrades

QTR.	FUNDS EXPENDED Retiming	IVA Units	OTHER
1ST	$0 POs Issued 2nd QTR.	$2,115,873 60 Units	$100,654
2ND	$0 POs Issued For: 8 Corridors 95 Signals	$1,957,804 76 Units	$54,723
3RD			
4TH			
TOTAL Encumbered	$1,054,114	$4,073,677	$155,377

PUBLIC WORKS
Transportation Division
Traffic Maintenance Section
22211 US Hwy 19N, Bldg. 1
Clearwater, FL 33765-2328
727-464-8900
www.pinellas.gov

Updated Strategic Plan

The following priorities and associated benchmarks were highlighted in the **Pinellas County Board of County Commissioners** five-year Strategic Plan to guide the County's operations, services and initiatives through 2030.

Resilient Infrastructure and Environment

Pinellas County plans and builds for the future while maintaining adaptable, sustainable infrastructure that enhances transportation.

Smart Service Delivery

Pinellas County continuously enhance public services, business support, and workplace efficiency through innovation, technology, and data-driven improvement.

Resilient Infrastructure and Environment Benchmarks

- **Traffic volume**
- **Travel time to work**
- **County infrastructure report card**

Smart Service Delivery Benchmarks

- **Improve efficiency of service through technology**
- **Satisfaction per budget dollar**

What Does Success Look Like?

Outcomes

Optimized Traffic Flow

- Adaptive and responsive signal timings

Reliable Communications

- Redundant
- County facility connections

Timely Equipment Status Alerts

Faster Response to Congestion & Crashes

- **Jan 2025** – 402 crashes responded to in < 2 minutes
- **2024** – 190 signal timing changes

Identification of Potential Crashes, Near Misses & Wrong Way Driving

Improved Safety, Efficiency & Overall Traffic Management

Overall, success means the traffic network within Pinellas County is **safer for all users, has reduced congestion, and smoother traffic flow.**

Signal Retiming Recent Success: 49th Street

46th Avenue to 94th Avenue

- New timing patterns for **nine (9) intersections**
- Retiming delay reductions achieved:

NB 49th Street

- 63 seconds (**35.2%**) during AM peak period
- 121 seconds (**62.9%**) during PM off-peak period

SB 49th Street

- 81 seconds (**37.9%**) during AM peak period
- 145 seconds (**78.5%**) during PM off-peak period

Total Benefit*
$2,005,500
***Reduced Travel Time and Fuel Consumption**

Benefit to Cost Ratio: 51:1

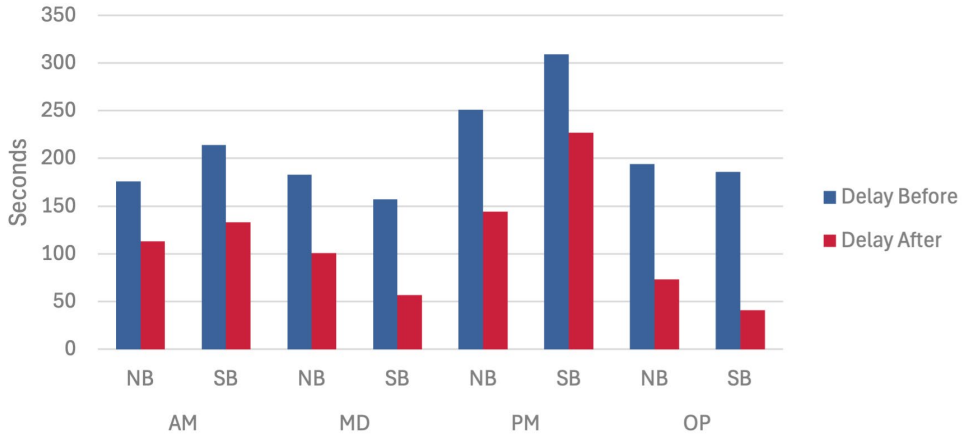
39,000
Weekday Average Daily Traffic (# of Vehicles)

96,400
Reduced Vehicle Hours of Travel

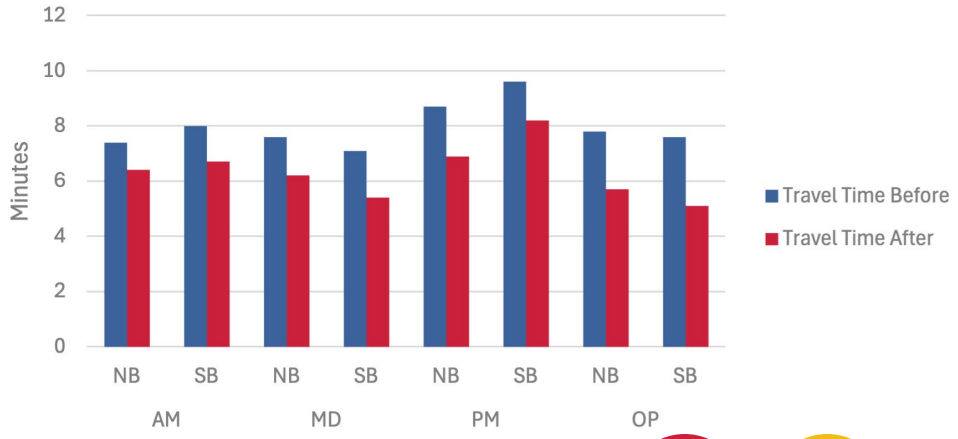
86,000
Reduced Fuel Consumption (Gallons)

1,653,200
Reduced Number of Stops

Delay: Before & After Comparison



Travel Times: Before & After Comparison



Signal Retiming Recent Success: 66th Street

US-19 (Frontage Road) to 46th Avenue N

- New timing patterns for **16 intersections**
- Retiming delay reductions achieved :

66th Street

- 146 seconds (**45%**) during AM peak period
- 181 seconds (**48%**) during PM peak period

Total Benefit*
$10,434,900
***Reduced Travel Time and Fuel Consumption**

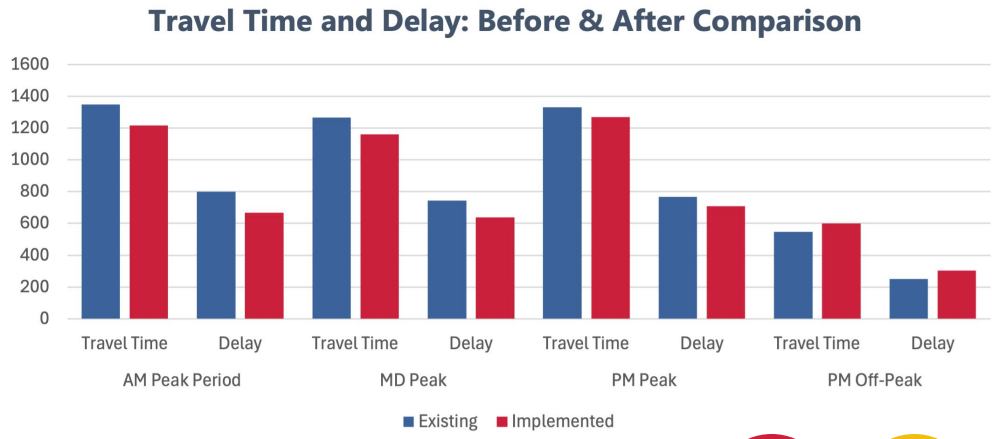
Benefit to Cost Ratio: 115:1

37,755
Weekday Average Daily Traffic (# of Vehicles)

63,700
Reduced Vehicle Hours of Travel

422,800
Reduced Fuel Consumption (Gallons)

22,290,100
Reduced Number of Stops



Adaptive Corridors: Early Use Case Success

Ulmerton Road:

Corridor	Total Mileage	# of Signals	# of 2022 Crashes	2022 Daily Trips	Congestion Cost per Segment per Hour	Travel Time Reduction
Ulmerton Road	4.54	7	160	29,000	$126.70	**3%**

Cost of Installation

- $3,500 per signal at 7 total signals
  + 10% maintenance cost = $26,950.00

Benefits Estimation

- Annual Congestion Opportunity Cost = $33,296.81
- Annual Opportunity Cost for Crash Reduction = $1,909,116

Benefit-Cost Ratio

- B/C Ratio = Total Annual Benefit / Total Annual Cost
  B/C = $1,942,412.81 / $26,950.00 = **$72.07**

Every $1 spent provides $72.07 in benefits

Gulf Boulevard at Belleair Causeway:

Adaptive timings and video analytics help clear heavy traffic resulting from special events in Clearwater.

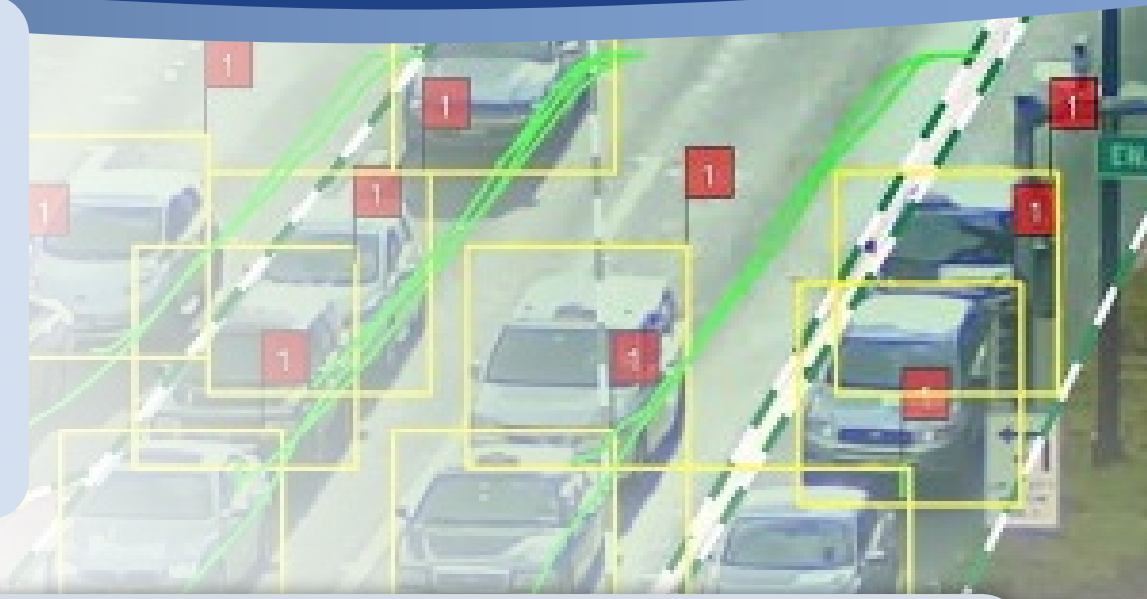
49th Street from 46th Avenue to 94th Avenue:

Adaptive timings are being tested and compared against previous traditional signal retiming.

Video Analytic Devices

Project Overview

- Acquisition and installation of Video Analytic Devices for **60 intersections** is in progress on SR 60, SR 580, US 19, Alt US 19, Belcher Road, East Lake Road, E Bay Drive, Gulf Boulevard, Starkey Road, Tampa Road, Park Boulevard, and Seminole Boulevard
- Purchased an additional 76 IVA units to be installed in 2025.



Intersection Video Analytics

Video Analytics are a tool that utilizes traffic cameras/detection to analyze real-time traffic.

- Detects traffic at intersections to assess congestion levels
- Can modify signal timings in real-time to clear traffic queues
- Safety applications - pedestrian and bicycle detection, wrong way vehicle detection, near-miss detection, and speed monitoring

Benefits of Video Analytics in Traffic Management

- Improved Traffic
- Enhanced Safety Monitoring
- Faster Incident Detection
- Predictive Analytics

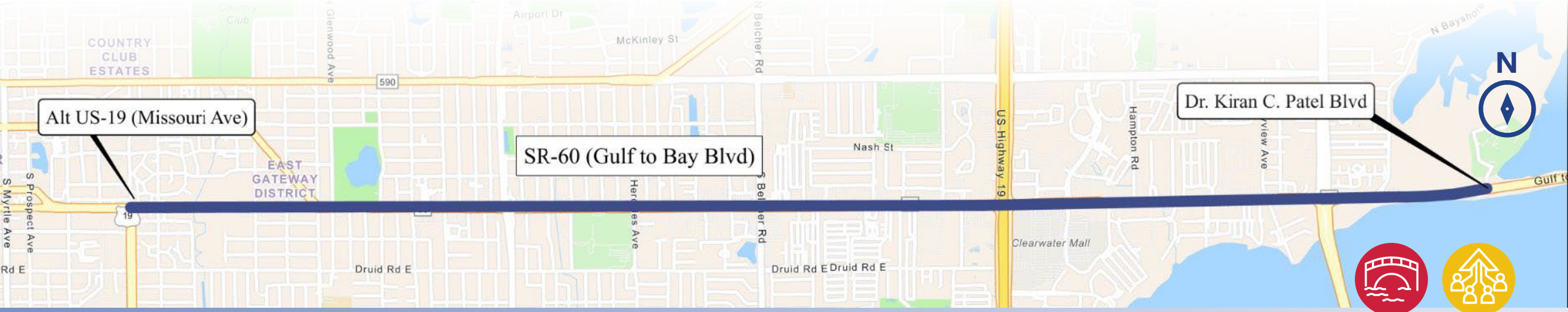
SR 60 SMART SIGNAL Corridor Project

Project Overview

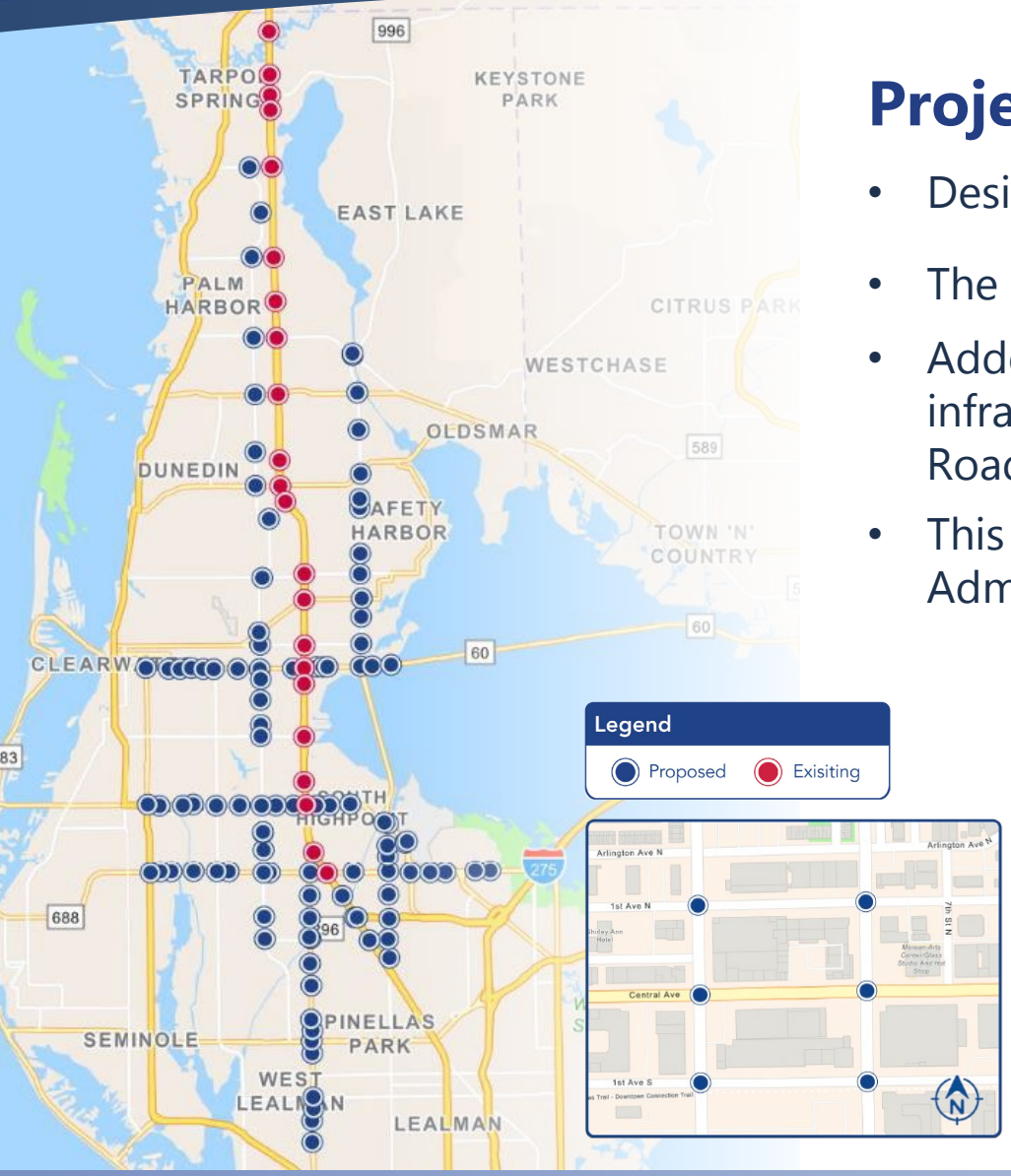
- Funded by FDOT grant
- Implementation is **complete**
- Enhancements include:
  - New signal controllers
  - Improved vehicle detection
  - Advanced pedestrian detection
- 17 Signalized intersections

Project Objectives

- Improve coordinated traffic flow along the SR 60 corridor
- Increase pedestrian safety at the 3 high-pedestrian crossing intersections:
  - Bayshore Boulevard
  - Old Coachman Road
  - Arcturas Avenue
- Reliable, real-time traffic data
- Test and fine-tune adaptive signal timings



ATCMTD Connected Community Project



Project Progress

- Design and implementation is complete
- The 12-month evaluation period began in March 2025.
- Added several new technologies for use in accelerating connected vehicle infrastructure at **100 signalized intersections** along US 19, SR 60, Belcher Road, West Bay Drive and Ulmerton Road.
- This project is partially funded through a grant from the Federal Highway Administration (FHWA).

Project Outcomes

Evaluating the effectiveness of providing **real-time traffic information** to motorists through **connected vehicle technology**, including suggested alternate routes on parallel north-south and east-west corridors in a variety of media, and adjusting signal timing on the parallel corridors. A final evaluation report is due to FHWA upon completion of the 12-month evaluation period.

Current Projects

ATMS Projects

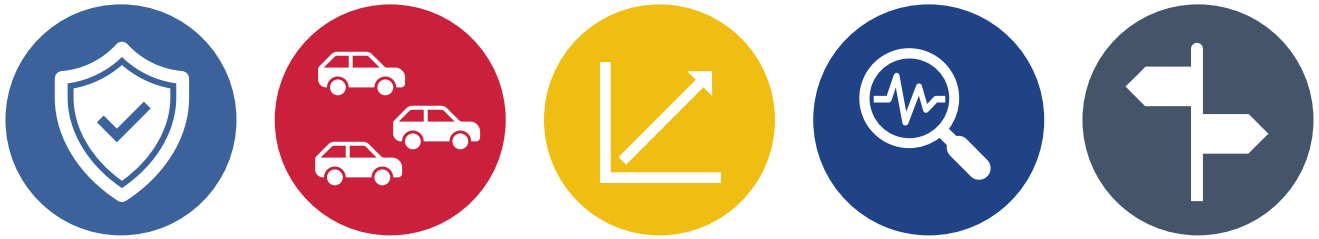
In Design

113th Street from Tom Stuart Causeway to Ulmerton Road

Design Complete/Awaiting Construction Advertisement

- **Alderman Road from Alt US-19 to US-19**
- **North County ATMS Phase 2**
  - SR-580 and Curlew Road from Alt US-19 to US-19

Anticipated Successes



Enhanced Safety

Reduced Congestion

Improved Operational Efficiency

Valuable Data for Informed

Expedited Decision Making

Projects for Purposes of Streamlining Budgets:

Fiber Pilot

- Connecting 18 County facilities along Ulmerton Road
- New fiber in existing County conduit
- Purpose is to evaluate cost savings of utilizing County owned fiber as compared to a fiber lease agreement
- **Installation is complete**
- BTS is evaluating benefits

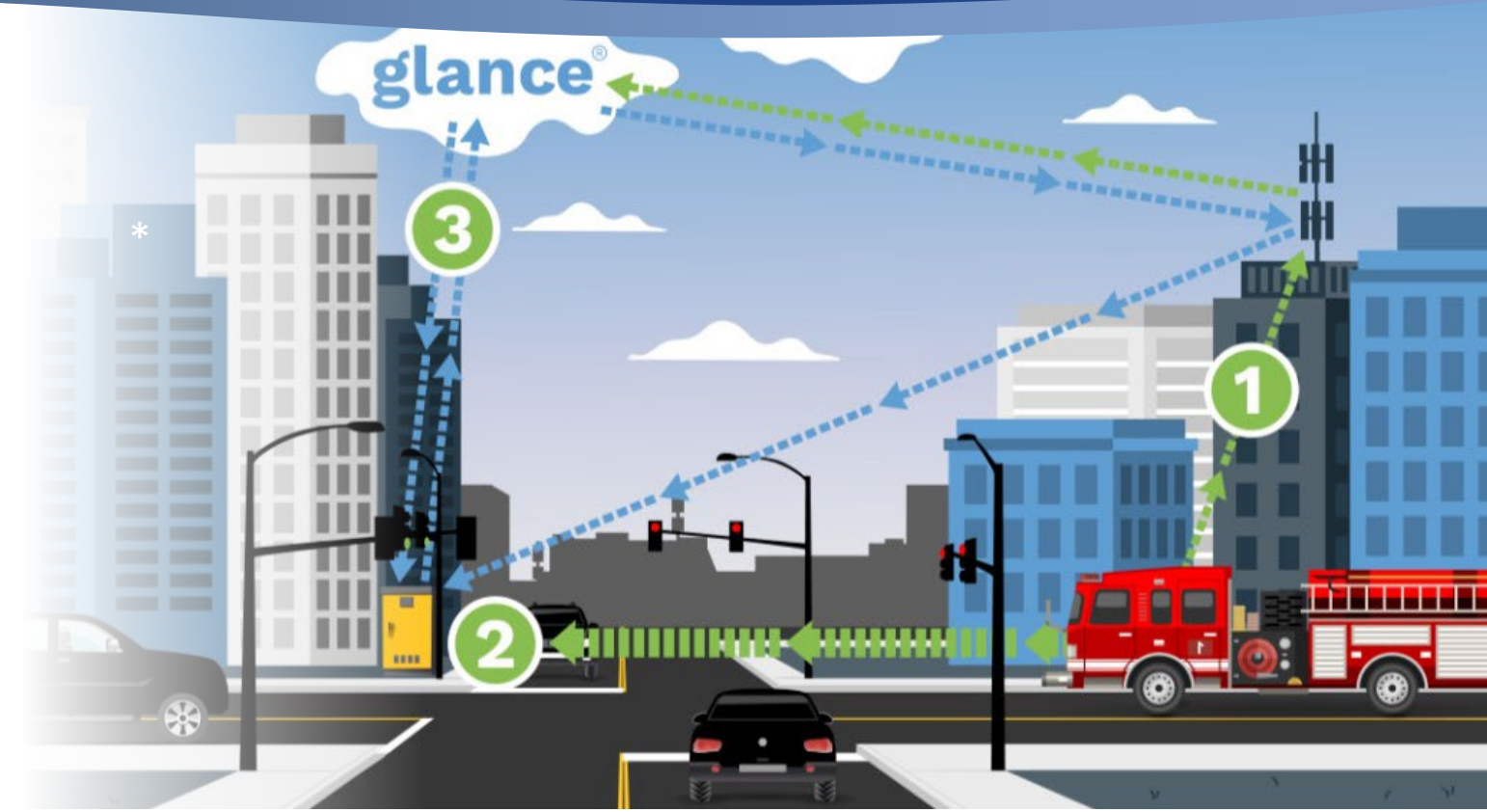
GIS Fiber Mapping

- ARPA project
- Map all County Fiber (PW and BTS) in GIS
- Allows more efficient use of existing fiber and identification of effective upgrades
- **Project is complete**

Emergency Vehicle Preemption Upgrade

Project Overview

- Project goal is to improve traffic flow, safety, and responding units' overall response time
- **Glance Preemption System**
- Equipment is currently being installed at **~270 intersections**, starting with the largest corridors
- Includes all 3 signal maintenance entities:
  - Pinellas County
  - City of Clearwater
  - City of St. Petersburg
- **200 frontline Fire Rescue vehicles** to be outfitted with equipment



1. Notify

The moment a route starts, the in-vehicle unit uses a cellular signal to alert Glance of the emergency call.

2. Preempt

Glance processes the route and communicates wirelessly with the traffic cabinet to clear traffic ahead of the vehicle's arrival.

3. Adapt

Glance monitors route progress in real time and dynamically adapts preemption requests as the situation changes.

Recurring Countywide Events

Ongoing/Recurring

Spring Training: The Philadelphia Phillies in Clearwater late February through March. Clearwater PD – "this was the most successful year in terms of managing traffic."

Valspar Championship: Annual PGA Golf Tour event mid-March in north County.

St Pete Grand Prix: Worked with City of St. Pete to map and monitor road closures in driving applications.

Spring Break: March through April significant increase in beach traffic.

Construction: Multiple ongoing construction projects are monitored.

Upcoming

Control Center Operating Hours: Staffed hours at the Pinellas TMC will be adjusted for efficiency and during designated hours each week. The District 7 RTMC will supplement operations during times where Pinellas TMC is not staffed. Further details to follow.

Pinellas County

Summary

- Original Program Goals Maintained
- Aligned with Strategic Plan
- New Technologies Implementation on Track
- Identify and Address Congestion – Recurring and Non-Recurring
- Focused on Meaningful Performance Metrics that are Outcome Based

Pinellas County

Thank you!

Questions?

Pinellas County