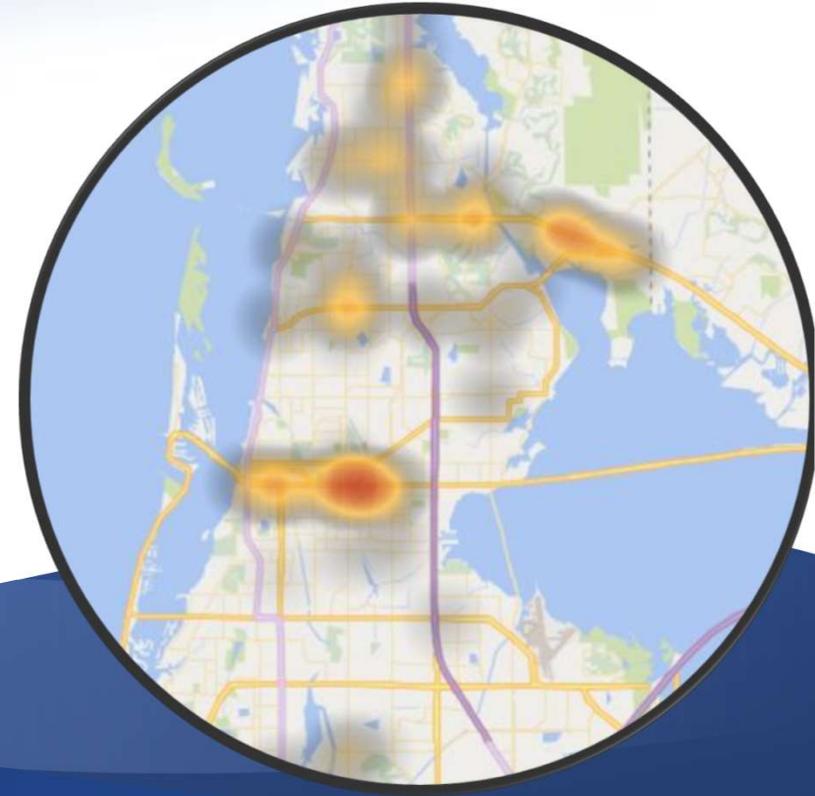


# Pinellas County's IVA (Intersection Video Analytics) Program Overview

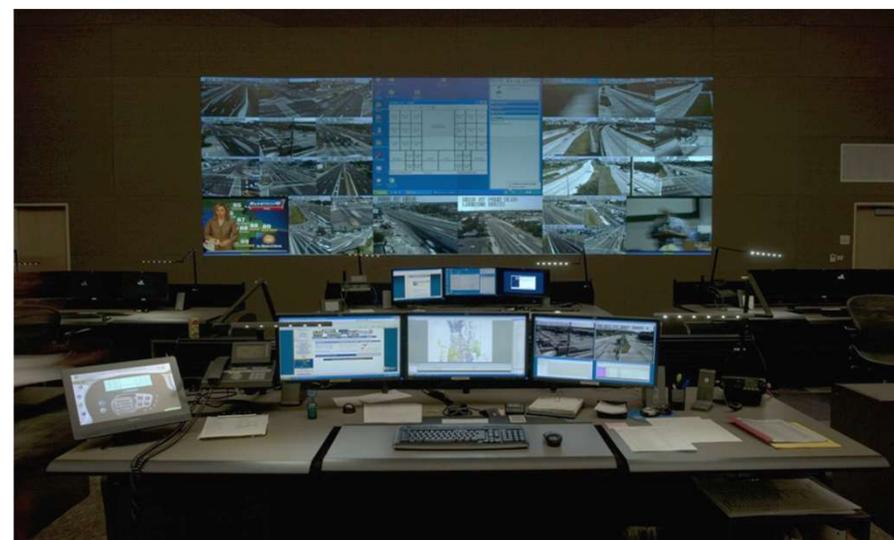


**Pinellas County Public Works**  
**Deneta Jones, Section Manager TMC**



# The System Today

- **400 Miles of Fiber Optic Cable**
- **250 CCTV Cameras**
- **62 DMS Signs**
- **102 Bluetooth Travel Time Sensors**
- **130 Intersection Video Analytic Devices Locations**
- **7 TMC Operators**



# The Next 3 Years



## Board of County Commissioners Allocation: \$18M

- **Video Analytics**
  - 390 Signals
  - FY Goals – 130 Signals
- **Signal Corridors Retimed**
- **Adaptive Intersections**
- **Quarterly Progress Updates**

**Quarterly Progress Report**  
**ATMS Improvements**  
 TRANSPORTATION DIVISION • Traffic Maintenance Section  
 1<sup>ST</sup> QUARTER FY24  
 Oct 23-Nov 23 • 15d: 23

**PROGRAM SUMMARY**  
 A TMS or Advanced Traffic Management System improvements include signal retiming, adaptive intersections, and video analytic devices. Signal retiming reduces congestion, provides 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 (\$9M 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	MIILESTONE
✓	Identify Signal Retiming Corridors Map of corridor locations provided on page 2.
✓	Identify and retain consultants to perform signal retiming.
✓	Identify adaptive intersections for upgrades.
In Progress	Identify and retain contractors to perform adaptive intersection upgrades.
In Progress	Prioritize intersections for analytic video upgrades.

**FY23 Accomplishments:** This is a new program for this fiscal year.

QTR.	Running Total Intersections Retimed	Running Total Adaptive Intersections Completed	Running Total Video Analytic Upgrades
1ST	0 <sup>1</sup>	0 <sup>1</sup>	0 <sup>1</sup>
2ND	0	0	0
3RD	0	0	0
4TH	0	0	0

**Notes:**  
 Purchase Orders are being issued to consultants for the corridors identified on the map on page 2.  
 100 percent is being incurred and realized for the Video Analytic Devices.

**PUBLIC NOTICE**  
 A public notice is being issued to consultants for the corridors identified on the map on page 2.  
 100 percent is being incurred and realized for the Video Analytic Devices.

**ATMS - SIGNAL RETIMING CORRIDORS**  
 (Location Map ->)

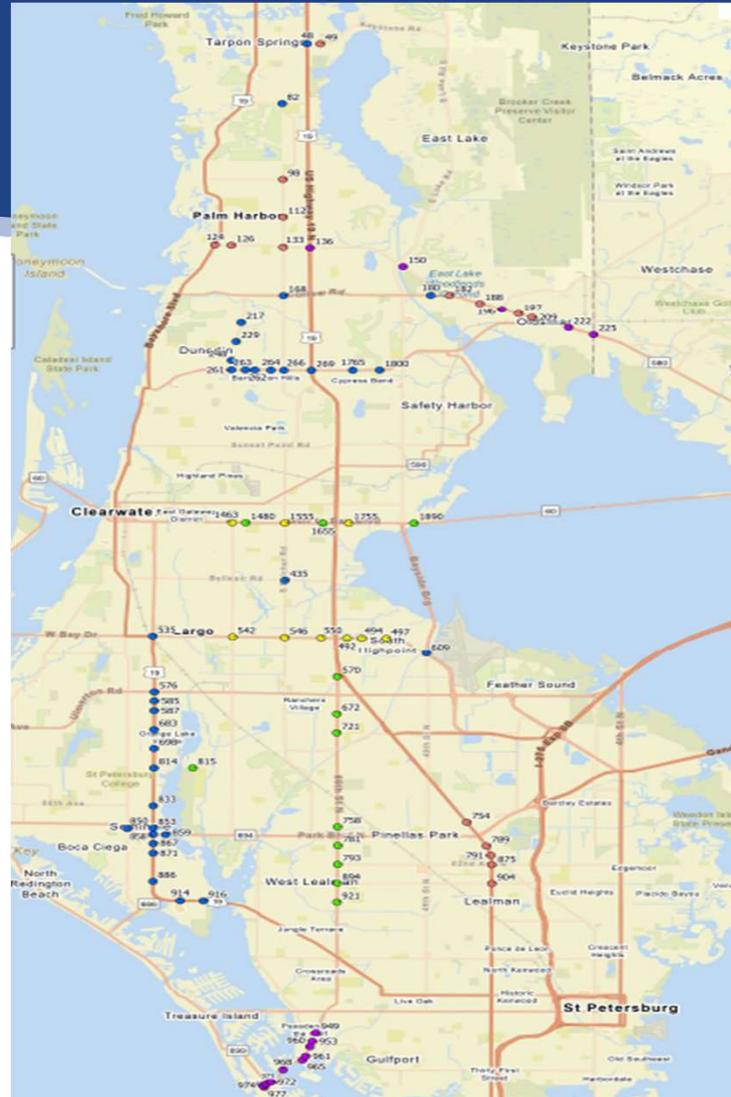
**CORRIDOR KEY**

Corridor	Boundary
① McMullen Booth Rd	From: Collier Rd To: Drew St
② 66 <sup>TH</sup> St	From: US 19 To: 48 <sup>TH</sup> Ave
③ Ulmerton Rd	From: 58 <sup>TH</sup> St To: Feather Sound
④ Alt. 19	From: Collier Rd To: Dedicamen
⑤ 49 <sup>TH</sup> St	From: 45 <sup>TH</sup> Ave To: 34 <sup>TH</sup> Ave
⑥ 49 <sup>TH</sup> St	From: 14 <sup>TH</sup> To: Lake
⑦ Gulf Blvd	From: Corey Ave To: Pinellas Bayway
⑧ Drew St	From: Hampton To: Keene Rd

**MAP FEATURES**

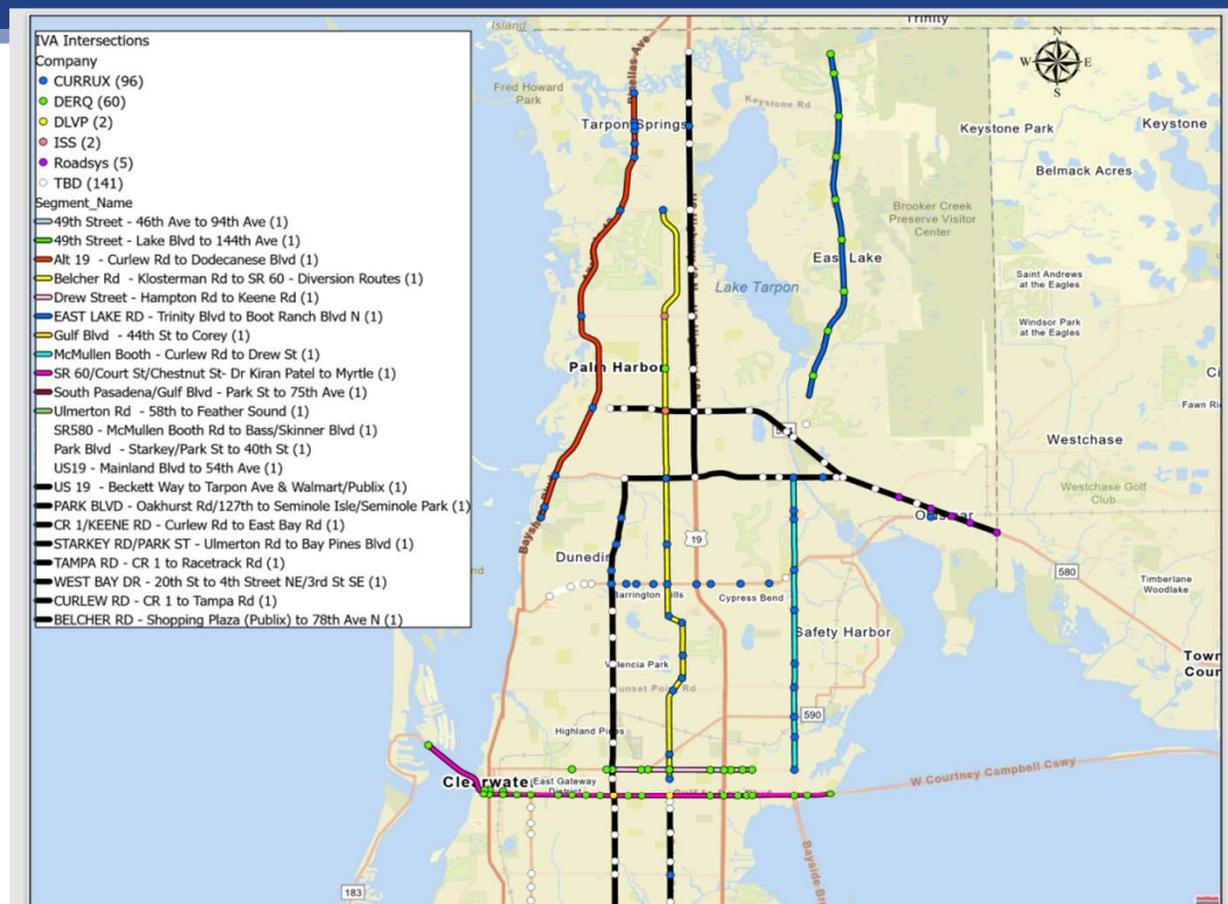
- Unincorporated Area
- Arterial Road
- State Road
- Interstate
- Signal Retiming Corridor

# IVA Locations



# IVA Priority List

- **Signal Re-Timing Corridors**
  - **Base Line (SPM)**
- **Law Enforcement**
  - **Grant Funded**
    - **Speeding**
    - **Illegal Crossings**
    - **Red Light Running**
- **Citizen Concerns**



# Video Analytics

## 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
- Pre and Post Studies after a treatment has been implemented



### Benefits of Video Analytics in Traffic Management

 <p><b>Improved Traffic</b></p>	 <p><b>Enhanced Safety Monitoring</b></p>	 <p><b>Faster Incident Detection</b></p>	 <p><b>Predictive Analytics</b></p>
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# Types of Analytics



## Safety Events

- Crash
- Near miss (vehicle-VRU)
- Near miss (vehicle-vehicle)
- Illegal crossing
- Pedestrian signal violation
- Red light violation
- Wrong way driver
- Stopped vehicle
- Illegal turning movement
- Lane compliance violation

### SAFETY INSIGHTS SNAPSHOT

LAST 30 DAYS

LAST 7 DAYS

BETWEEN 01-21-2026 AND 01-27-2026



#### HIGH SEVERITY EVENTS

**1** / 11  
 HIGH SEVERITY  
 VEHICLE-VEHICLE  
 NEAR MISS EVENTS

# Examples of Analytics



Wrong Way



Illegal Crossing



VRU - Near Miss



Near Miss

# IVA Program - Dedicated Staff



## 7 Team Members

### 1 IVA Lead –

- Oversees and reviews analytics daily

### 6 TMC Operators –

- Each dedicates one day per week to support the IVA program

REPORT DATE 09-02-25 DATA DATE 09-01-25. AI still in learning process

	EVENTS	# of Events need a recommendation	Recommendations	PROCESS	VIDEO/FILE NAME	NOTES
<b>DERQ - SR 60 at Bayshore Blvd</b>						
Near Miss VRU (Near Miss Vehicle to Ped)						
Near Miss-V V (Near Miss Vehicle to Vehicle)	4	1	STRIPING	Pavement markings		
Illegal Crossing (Jaywalkers, Crosswalk Violations)		1	STRIPING	Pavement Markings		
Pedestrian Signal Violation	73					
Red Light Violation	24	1	POLICE ENFORCEMENT			
Wrong Way (Wrong Direction)						LT's crossing over SB lanes
Stopped Vehicle (Lane Stopped)						FYA
Lane Crossing (Lane Compliance Violation)		1	STRIPING	Pavement Markings		

\*IVA Report sent 05-13-25 and 06-18-25

IVA ANALYTICS								
Operator Event Checklist								
Red Light Crossing Alert								
	LOCATION	LANE	DATE	TIME	TIME IN RED	SPEED	NOTES	OPERATOR
1	Seminole Blvd at 126th Ave N	NB	10/13/2025	9:59 AM	1.5	30		Alyn Lynne
2		NB		9:44 AM	1.2	44.3		
3		NB		9:37 AM	1.7	21.7		
4		SB		9:33 AM	1	34.3		
5		SB		9:26 AM	1.6	22.7	done	

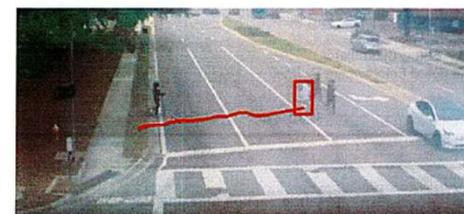
# IVA Report

## SR 60 at Arcturas Ave

- School Dismissal
- Pedestrian Crossings

<b>SAFETY</b>	<b>IVA REPORT</b>
<b>INTERSECTION VIDEO ANALYTICS – ROUTING SHEET</b>	
Location: SR 60 at Arcturas Ave Video Checked Date: April 2025 (various dates) Routed to: Jeff Thompson P.E., Traffic Operations Engineer Casey Morse, School Transportation Safety Coordinator Prepared by: Deneta Jones Date Closed:	
<b>SYSTEM</b>	<b>ANALYTIC</b>
<input checked="" type="checkbox"/> DERQ (4 Locations)  <input type="checkbox"/> CURRUX (16 Locations)  <input type="checkbox"/> DLVP (9 Locations) <input type="checkbox"/> ROADSYS <input type="checkbox"/> ISS	<input checked="" type="checkbox"/> Intersection Crossing (Jaywalkers, Crosswalk Violations, Red Light Crossing Alert)  <input type="checkbox"/> Stopped Vehicles (Lane Stopped)  <input type="checkbox"/> Lane Crossing (Lane Compliance Violation) <input type="checkbox"/> Near Miss (Near Miss Vehicle to Vehicle, Near Miss Vehicle to Ped) <input type="checkbox"/> Wrong Direction (Wrong Way Driver)
<b>Comments:</b> High School jaywalking 7:30 to 11:30AM WO #	
<b>Final Recommendations:</b> Ask Casey Morse to contact Clearwater High School for Education. Bring up at STEPS meeting Traffic Engineering to Contact Law Enforcement for Jaywalking Enforcement.	
S:\Division\TrafficMgmt\SIGNALS\TMC - OPERATORS\IVA\REPORTS\SR60 AT ACTURAS AVE - 5-12-25 - IVA REPORT.docx	

Video/File Name(s):  
681d0eaf4e6bd70012026bfc



Pedestrian Compliance Analysis (Heat Map):



S:\Division\TrafficMgmt\SIGNALS\TMC - OPERATORS\IVA\REPORTS\SR60 AT ACTURAS AVE - 5-12-25 - IVA REPORT.docx



# Coordination with other Agencies

## Working Together for Safer Roads



### Schools:

- Collaborate on school-zone safety and crossing improvements

### FDOT:

- Coordinate signal timing and regional initiatives for bike and ped safety

### Neighboring Municipalities:

- Share insights and strategies for consistent traffic flow and safety across jurisdictions

### Forward Pinellas:

- Share insights and strategies for consistent traffic flow and safety across jurisdictions



# Coordination with other agencies



## Law Enforcement:

- Uses our data to identify red-light violations, define parameters, and focus patrols where they matter most

## Vendors:

- Collaboration – AI Component



### 66th St Corridor - Red Light Violations

(Speed is in MPH +/- 10 MPH)

Select all

Aug 2025

Sep 2025

Oct 2025

**Intersection**

102nd Ave & 97/98th St	66th St & 118th Ave	66th St & 142nd Ave	66th St & 54th Ave	66th St & 70th Ave	66th St & 82nd Ave	66th St & Park Blvd	66th St and Bryan Dairy Rd
66th St & 102nd Ave	66th St & 126th Ave	66th St & 46th Ave	66th St & 62nd Ave	66th St & 78th Ave	66th St & 94th Ave	66th St & Ulmerton Rd	SR 60 & Bayshore Boul...

**Direction**

- Select all
- EB
- NB
- WB

**Speed**

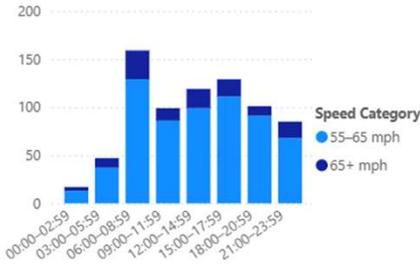
- Select all
- 0-45 mph
- 45-55 mph
- 55-65 mph
- 65+ mph

**Day of Week**

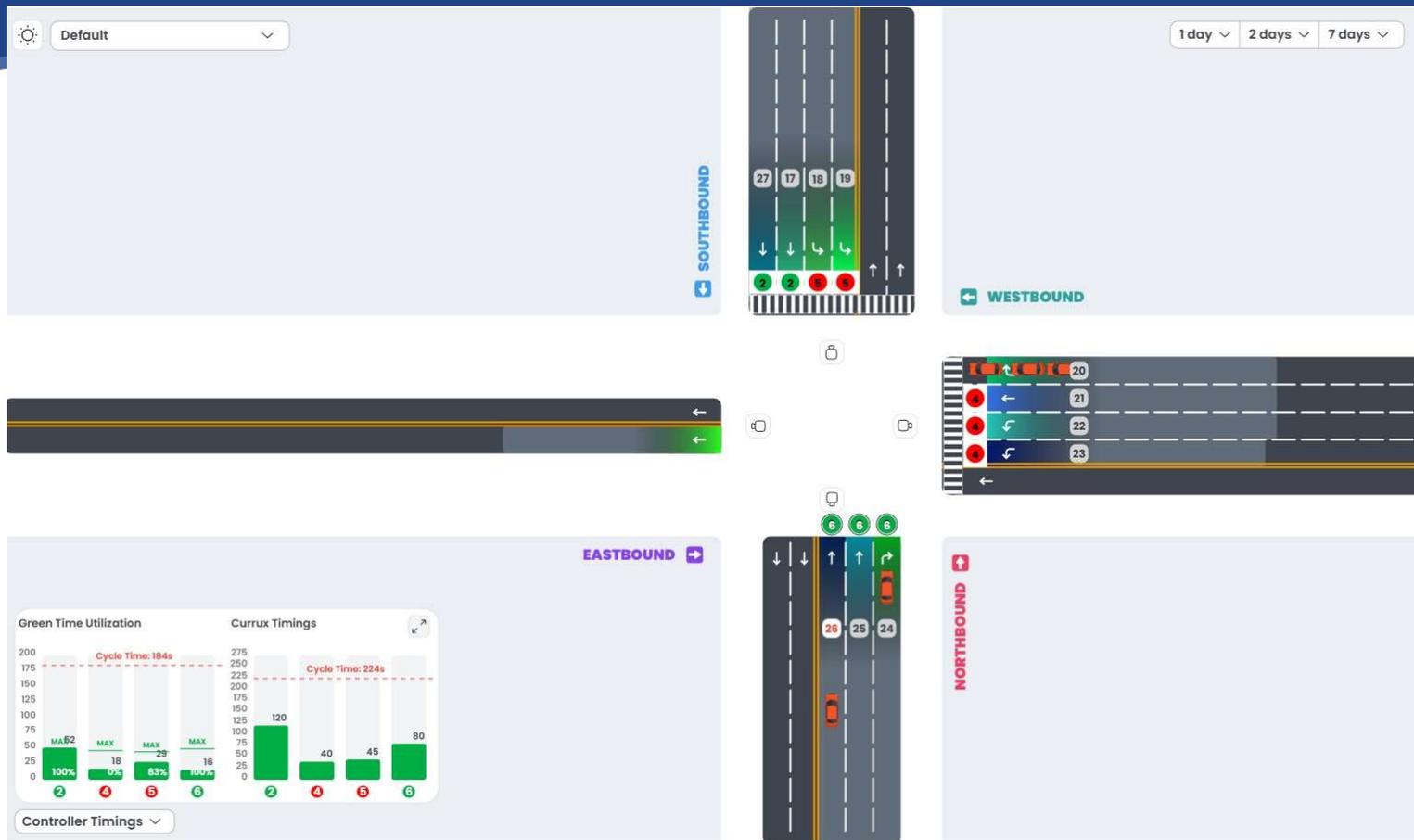
- Select all
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Sunday



Hour Block	Total Violations	Average Speed
00:00-02:59	17	61.94
03:00-05:59	47	61.87
06:00-08:59	159	61.75
09:00-11:59	99	60.58
12:00-14:59	119	61.27
15:00-17:59	129	60.34
18:00-20:59	101	60.25
21:00-23:59	85	61.69



# Digital Twin/Adaptive Signal Timing



# Turning Movement Counts

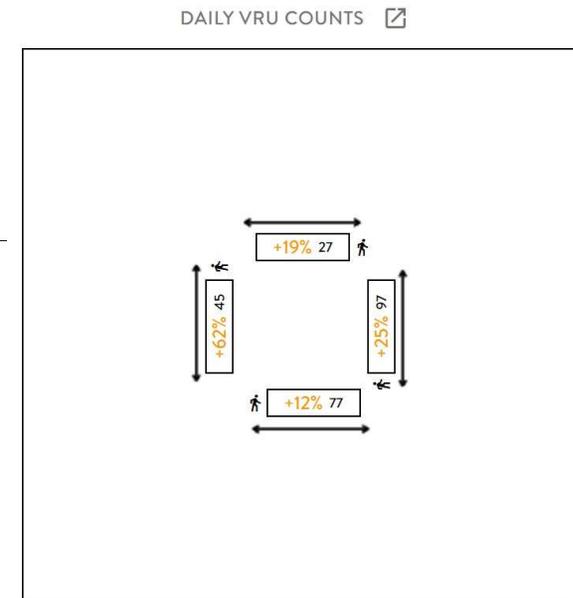
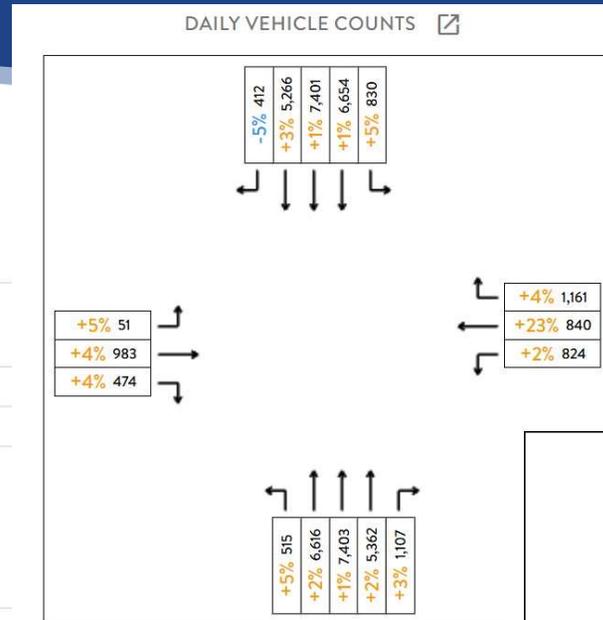


**AM PEAK HOUR**  
07:45 AM - 08:44 AM

**MID-DAY PEAK HOUR**  
02:45 PM - 03:44 PM

**PM PEAK HOUR**  
04:45 PM - 05:44 PM

Time Interval	NB			App. Total
	LT	TH	RT	
Peak Hour Analysis From 07:45 AM - 08:44 AM				
07:45 AM - 07:59 AM	1	423	20	444
08:00 AM - 08:14 AM	5	389	19	413
08:15 AM - 08:29 AM	3	394	20	417
08:30 AM - 08:44 AM	12	393	23	428
<b>Total Volume</b>	21	1599	82	1702
<b>% App. Total</b>	1.23%	93.95%	4.82%	
<b>% Heavy Vehicle</b>	0.00%	2.88%	2.44%	2.82%
<b>PHF</b>	0.438	0.945	0.891	0.958



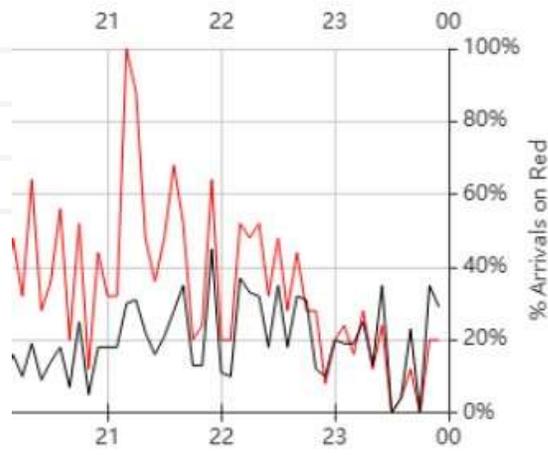
# Types of Signal Performance Measures (SPM)



Title	Object Counts	Speed (avg)	Arrivals On Green (avg)	Level of Service (avg)	Notifications	Queue Len
<input type="checkbox"/> Bay Pines Blvd @ 100th Way N	7075	29.5 mp/h	63.3%	B	14	2.5
<input type="checkbox"/> Bay Pines Blvd @ 95th St N	1755	25.7 mp/h	55.6%	B	0	0.0
<input type="checkbox"/> Belcher Rd @ Belleair Rd	13468	38.6 mp/h	71.4%	B	41	2.1
<input type="checkbox"/> Belcher Rd @ Curlew Rd	17096	19.7 mp/h	82.5%	B	24	2.0
<input type="checkbox"/> CRI @ Michigan	109	35.7 mp/h	70.2%	B	0	0.7
<input type="checkbox"/> CRI @ San Christopher	228	38.4 mp/h	68.0%	B	0	0.3
<input type="checkbox"/> CRI @ Solon	138	25.2 mp/h	55.8%	B	0	0.4

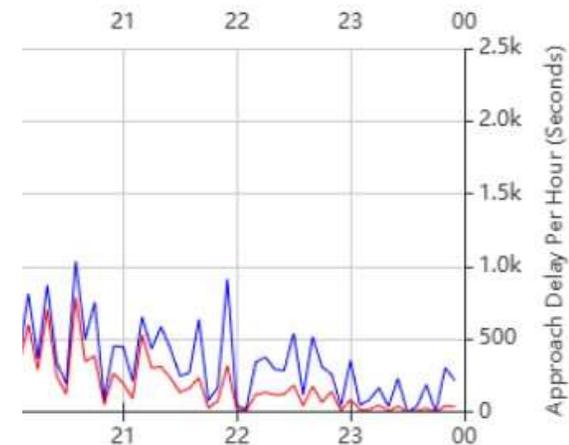
LOS

TOTAL # ARRIVALS ON RED - 2,673  
TOTAL % ARRIVALS ON RED - 11.07%



Arrivals on Red

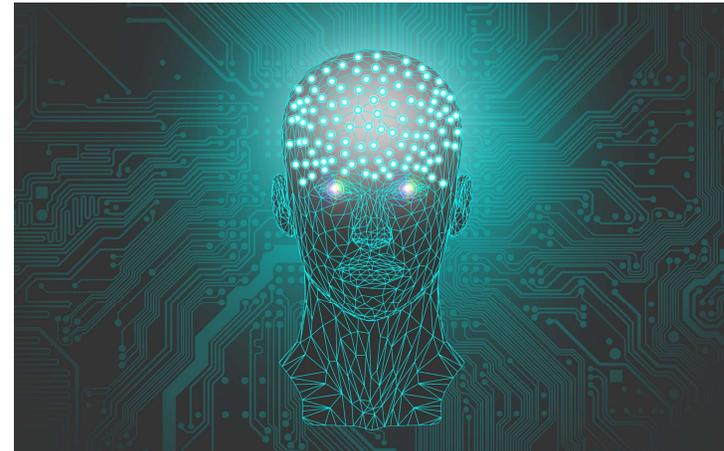
TOTAL DELAY - 162,319(s)  
AVERAGE DELAY PER VEHICLE - 6.724(s)



Vehicle Delay



**Newfound Insights**



**AI Technology**

**Pre and Post Studies - Measure**



***Questions?***

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