FDOT Traffic Operations & Safety Studies Consultant Services

Presented by Stefan Escanes, PE, PTOE

Metric Engineering, Inc.



Stefan Escanes, PE, PTOE

Project Manager + Transportation Planning Manager

- With Metric since 2012
- His traffic engineering expertise spans from transportation planning to signalization design and smart work zone systems implementation
- Experience includes management of multiple concurrent work orders and data intensive large-scale projects through the various TSM&O, traffic operations, signalization, transportation planning, and PD&E Study contracts
- Additional experience includes traffic analyses for Traffic Operations and PD&E Studies using the latest traffic simulation software including Vissim, Aimsun, Synchro, Sidra, Corsim and more

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Metric is a full-service firm with expertise to deliver any project from concept to completion and beyond, with a focus on applying future technologies for the safety and convenience of today's travelers.

Our Services

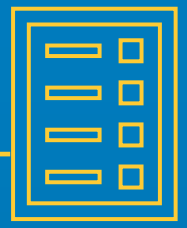
- CEI
- ITS CEI
- TSM&O
- Technology
- TMC Operations
- Planning
- PD&E
- Roadway
- Environmental
- EMS
- Connected Vehicles

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Presentation Outline

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Presentation Outline



- FDOT Vision and Mission
- Traffic Engineering & Operations Office Divisions
- What is a Traffic Study?
- FDOT Traffic Operations & Safety Studies Consultant
  - FDOT Traffic Engineering Support Services
  - Traffic Study Origination
  - Sample Study
- Incorporation of Technology

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FDOT Vision & Mission

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FDOT
Vision & Mission

VISION

- As one FDOT team, we serve the people of Florida by providing a transportation network that is well planned, supports economic growth, and has the goal of being congestion and fatality free.

MISSION

- The department will provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity, and preserves the quality of our environment and communities.



Traffic Engineering and Operations Office

Vision

✓ Provide leadership and serve as a catalyst in becoming the national leader in mobility.

Mission

✓ Improve safety and mobility through the efficient application of traffic engineering principles and practices.

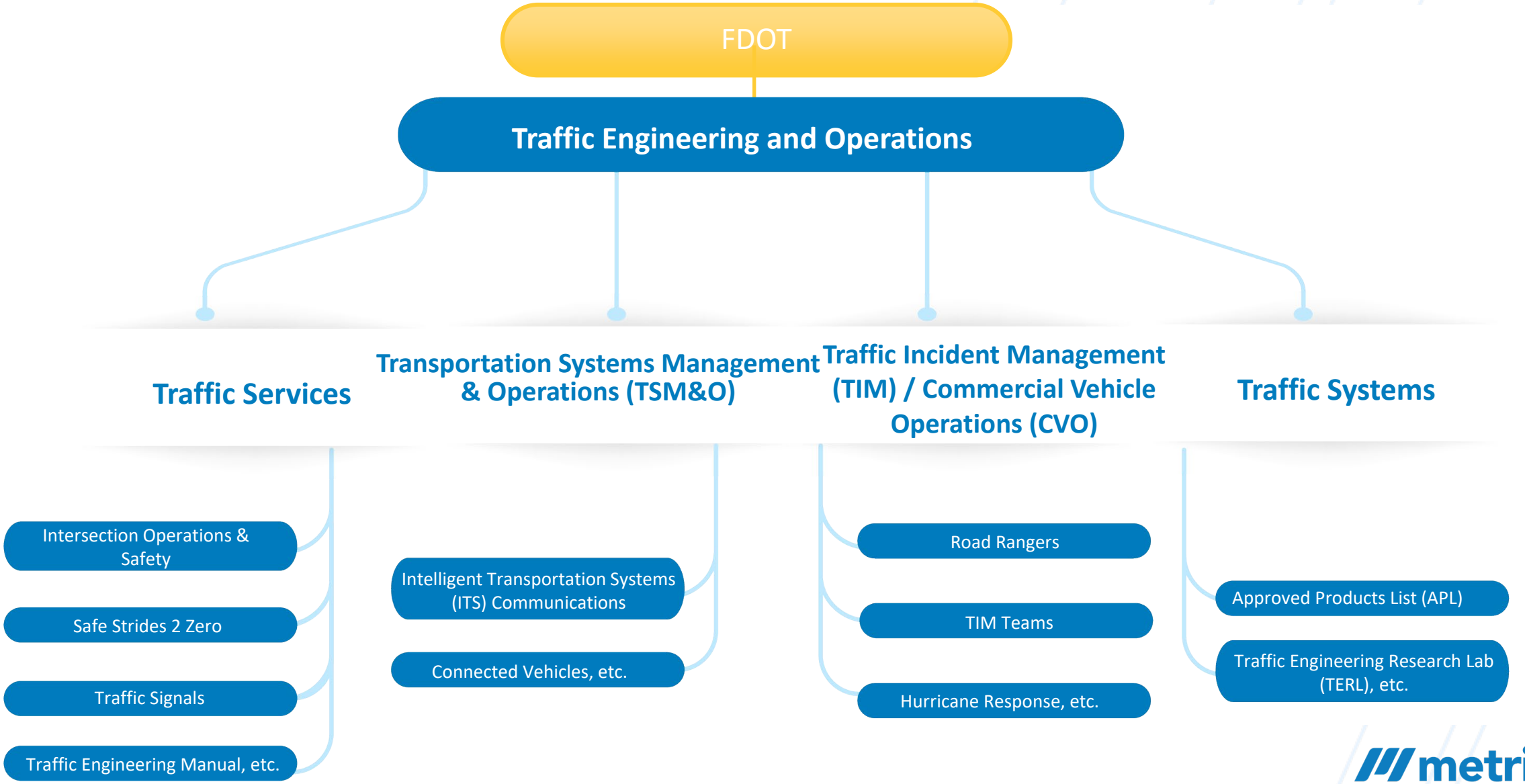
TARGET ZERO
FATALITIES & SERIOUS INJURIES

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Traffic Engineering & Operations Office Divisions

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Traffic Engineering & Operations Office Divisions



What is a Traffic Study?

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Traffic Studies

- **What is a Traffic Study?**
  - A traffic study is an engineering investigation to evaluate a transportation system.
- **Purpose of a Traffic Study?**
  - Identify and document any deficiencies to determine what improvements are warranted.
  - Vital part to enhance the safety and performance of our freeways, state roads, and local arterial streets.
- **Components of a Traffic Study?**
  - Determine purpose of the individual study
  - Data Collection
  - Project Traffic (depends on project type)
  - Analyze data (apply engineering principles, standards & guidelines)
  - Identify the improvements required

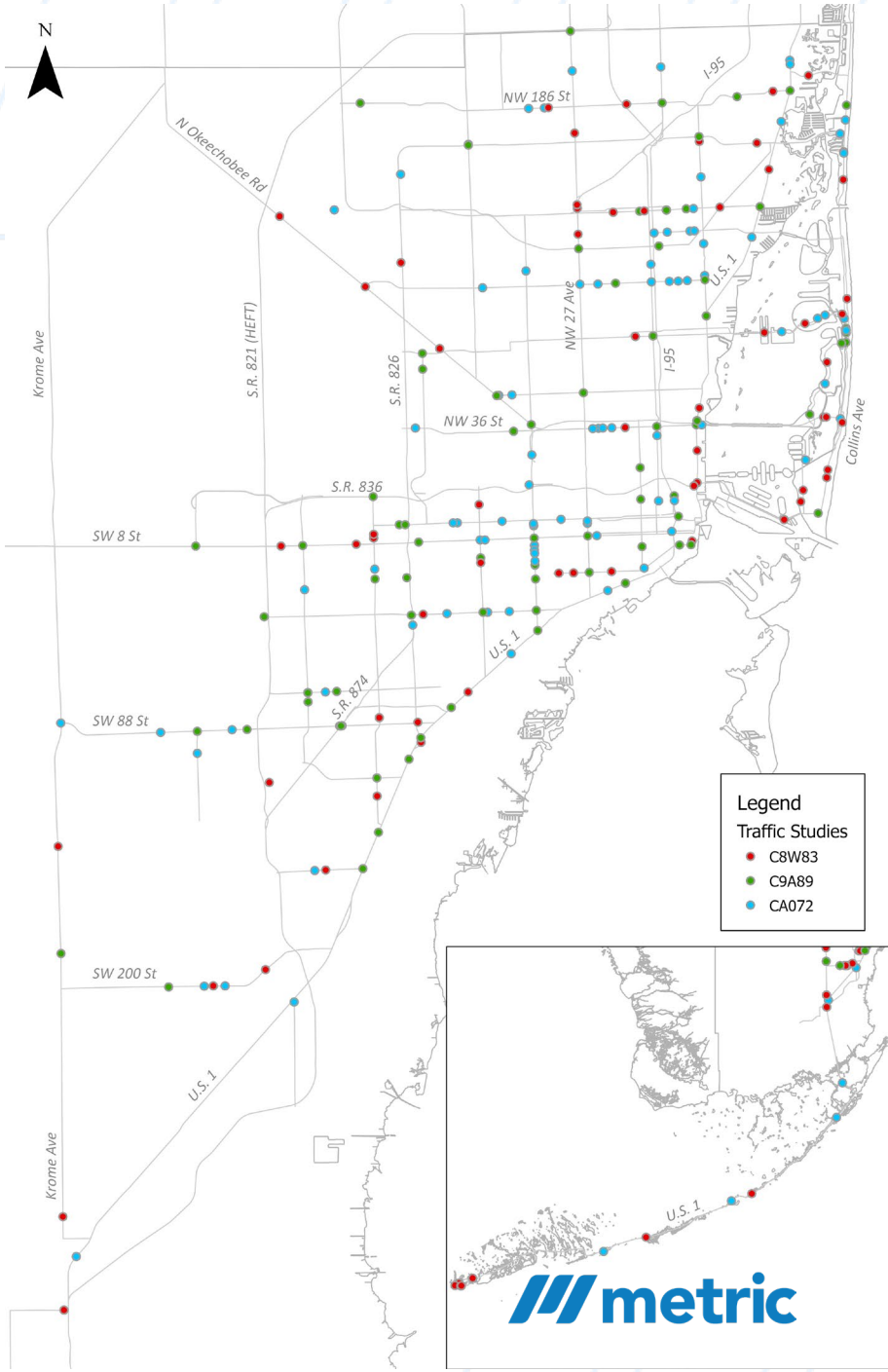


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FDOT Traffic Engineering Support Services

- **Contract Services Types**
  - 1: Qualitative Assessment
  - 2: Signal Warrant Analysis
  - 3: Intersection Analysis
  - 4: Arterial Analysis
  - 5: Left Turn Phase Warrant Analysis
  - 6: Other Traffic Engineering Related Studies
  - 9: Fatal Crash Review
  - 10: Speed Zone Study
  - 12: High Crash Location Studies
  - 13: Traffic Operations Safety Reviews
  - 17: Bottleneck Mitigation Studies
  - 18: Mid-Block Pedestrian Crossing Evaluation



Traffic Study Origination

Identifies Traffic or Safety Concern

Citizen | Homeowners Association | County/City | Agency

Reaches FDOT Traffic Operations

Correspondence Tracking Program (CTP) Number Assigned

CTP Assigned to Study Team

Review CTP | Select type of Service to Evaluate Concern

Perform Study

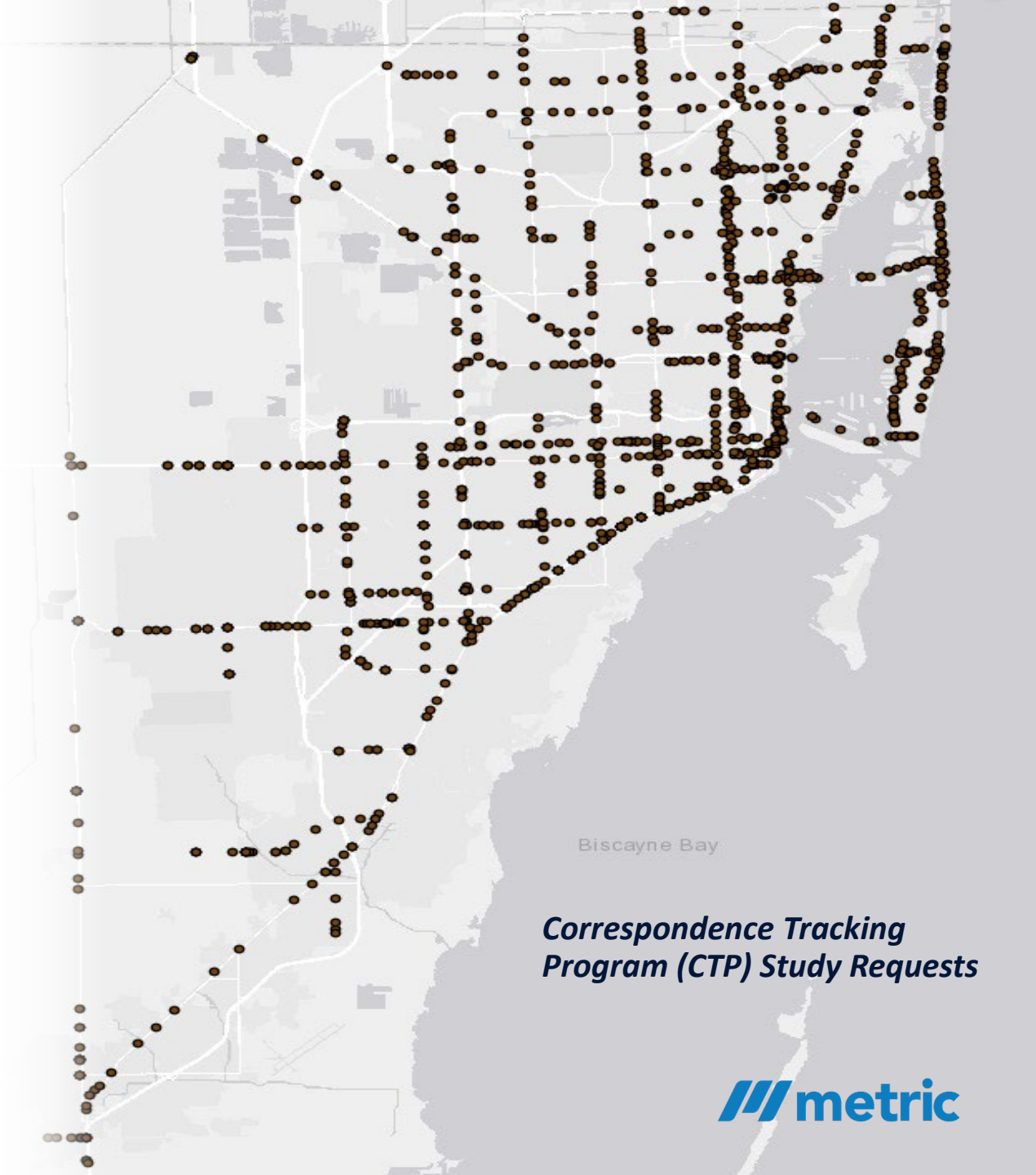
Evaluate the issue | Identify Improvements | Recommendations

FDOT Reports back to Original Requestor

Study Results

Improvements Programming

Assigned to Design Contract | Present at Scoping Committee Meeting for Programing



Correspondence Tracking Program (CTP) Study Requests

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Traffic Study: Pedestrian Evaluation

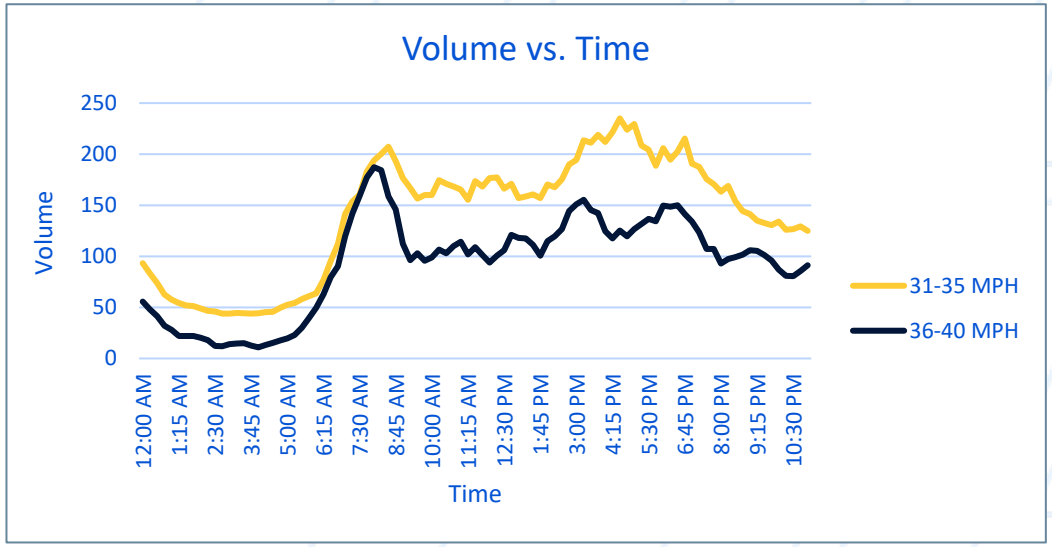
- **Locations:**
  - SR A1A /Indian Creek Drive at 65 Street and 67 Street
- **CTP Concerns:**
  - Inadequate pedestrian features
  - Pedestrian-Vehicle Conflicts in Crosswalks
  - Speeding
- **Study Type:**
  - Other Traffic Engineering Related Studies



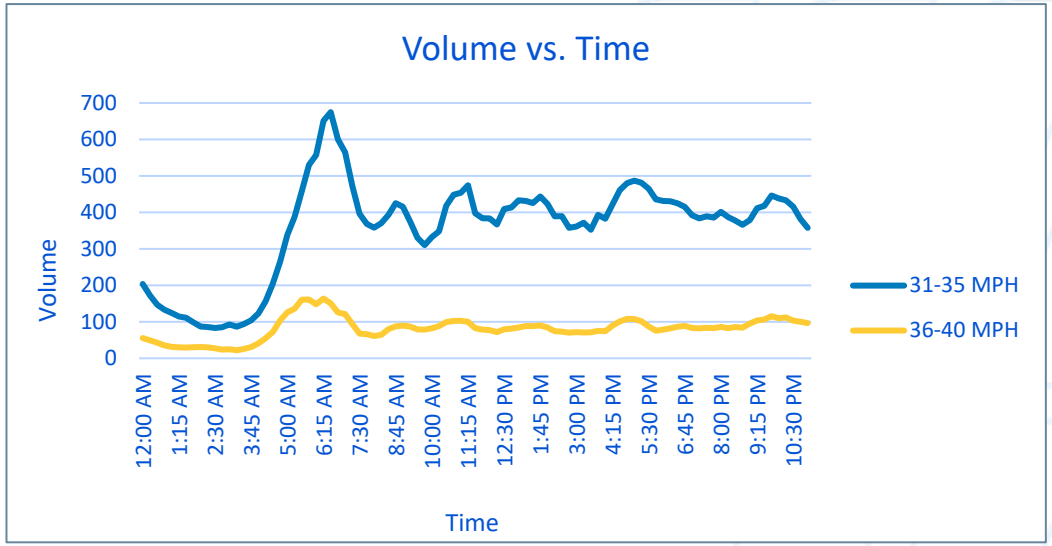
Traffic Study: Pedestrian Evaluation

- Data Collection
  - Spot Speed Study
  - 72-Hour Traffic Counts
  - Eight-hour Turning Movement Counts
  - Eight-hour Pedestrian counts
  - Existing Signal Timing Plans

Intersection	DIR	AM		MID DAY		PM			
		7:15 - 8:15	8:15 - 9:15	12:15 - 1:15	1:15 - 2:15	3:00 - 4:00	4:00 - 5:00	5:00- 6:00	6:00 - 7:00
Indian Creek Dr 65 Street	NB	6	2	10	6	5	7	8	5
	SEB	9	19	8	17	12	10	13	21
	EB	10	13	15	10	23	16	24	23
	WB	4	8	6	12	7	5	9	14
Indian Creek Dr 67 Street	NB	12	11	5	12	15	21	20	20
	SEB	0	0	2	1	4	5	5	10
	EB	16	21	9	14	23	19	17	33
	WB	12	16	11	14	15	9	13	23
	SB	14	24	14	17	16	19	24	31



Northbound Vehicular Speeds versus Time of Day



Southbound Vehicular Speeds versus Time of Day

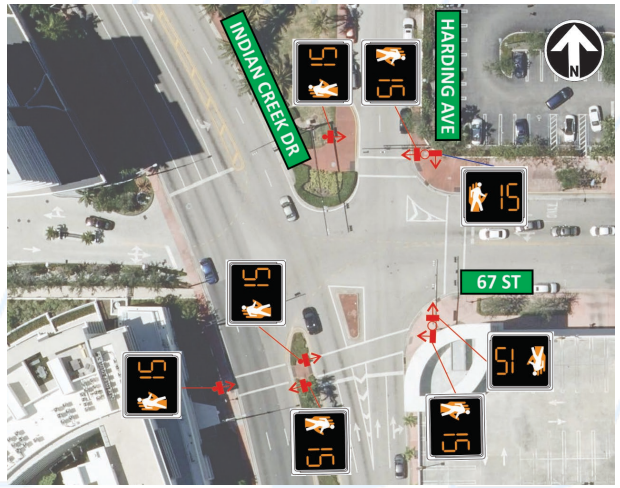
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Traffic Study: Pedestrian Evaluation

- Field Reviews
  - Pedestrian features/infrastructure
  - Traffic operations observations
  - Pavement, signing, and markings conditions
  - Pedestrian-Vehicle Conflicts in Crosswalks



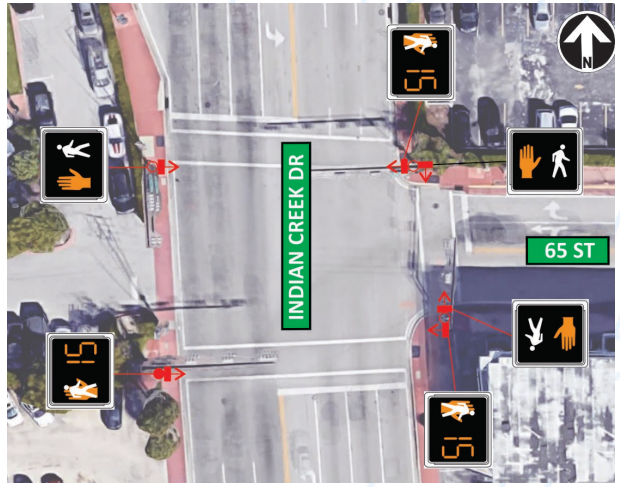
Pedestrian-Vehicle Conflict at 67 Street



67 Street Ped Features



Northbound SR A1A Queues



65 Street Ped Features

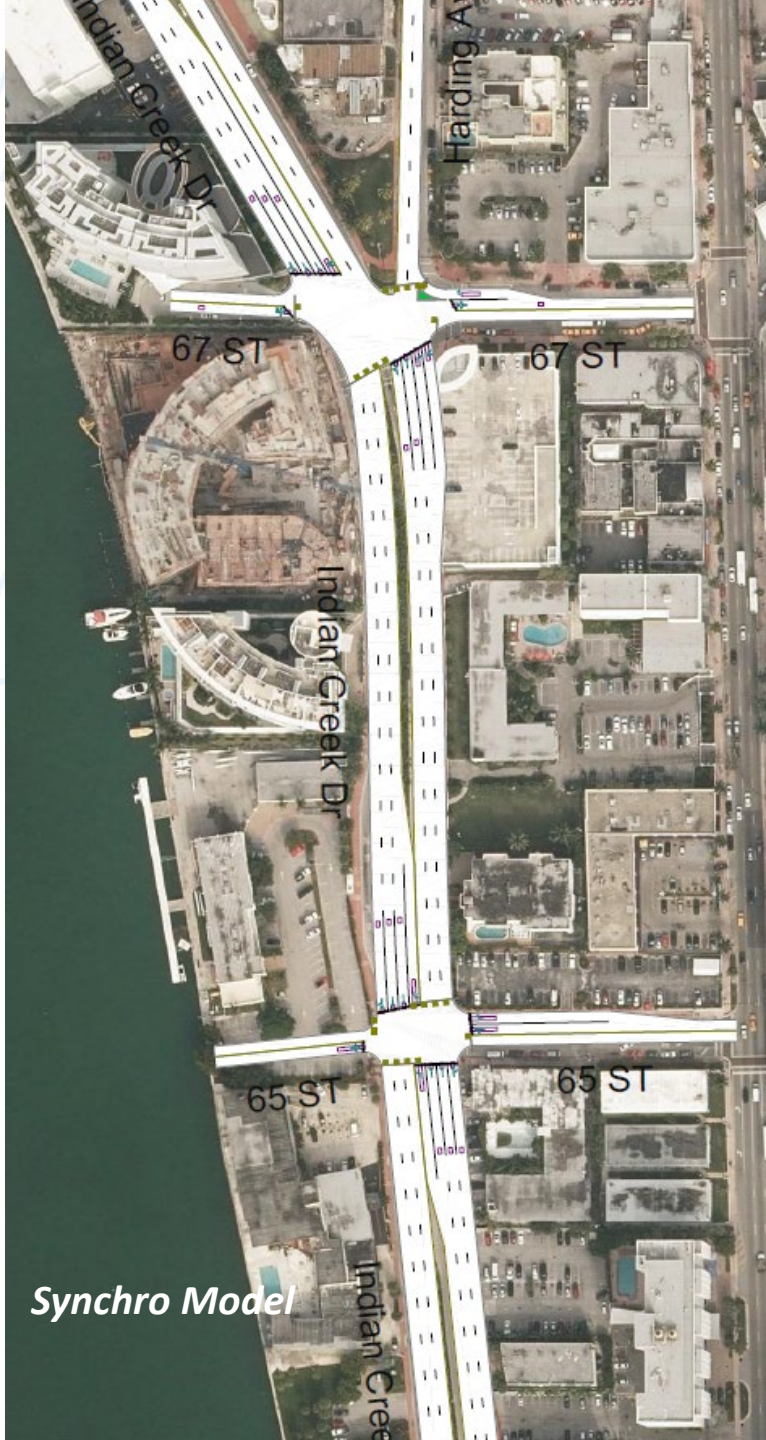
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Traffic Study: Pedestrian Evaluation

- **Level of Service Analysis**
  - Existing Conditions
  - Adjusted (Extended Pedestrian Clearance at 67 Street)
  - Leading Pedestrian Interval (LPI)

Intersection	Approach	Existing				Adjusted				LPI			
		AM		PM		AM		PM		AM		PM	
		Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
Indian Creek Drive at 65 Street	EB	66.3	E	68.1	E	-	-	-	-	75.1	E	74.8	E
	WB	118.7	F	85.1	F	-	-	-	-	167.3	F	91.2	F
	NB	8.1	A	8.8	A	-	-	-	-	10.6	B	11.5	B
	SB	14.3	B	9.2	A	-	-	-	-	24.7	C	14.7	B
	Overall	**17.8**	**B**	**13.1**	**B**	-	-	-	-	**28.4**	**C**	**17.7**	**B**
Indian Creek Drive at 67 Street	EB	81.2	F	72.9	E	80.3	F	72.0	E	79.5	E	74.2	E
	WB	85.9	F	84.9	F	83.6	F	82.2	F	84.5	F	80.2	F
	NB	4.2	A	27.4	C	4.2	A	27.5	C	4.6	A	37.2	D
	SB	10.2	B	10.3	B	10.7	B	10.6	B	13.7	B	12.8	B
	Overall	**10.6**	**B**	**19.6**	**B**	**11.0**	**B**	**19.7**	**B**	**13.4**	**B**	**24.4**	**C**

Delay and LOS beyond LOS D Target



Synchro Model

Traffic Study: Pedestrian Evaluation

- **Recommendations**
  - Implement Leading Pedestrian Interval
    - Coordinate signal timing modifications with maintaining agency
  - Install speed feedback sign for the northbound direction in the median

Always Consider Constructability Elements (structures, drainage, roadway, environmental, power source for new devices, etc.)



Northbound Speed Feedback Sign

Intersection	TOD	Plan	Cycle (sec)	Offset (sec)	Interval	Movements						
						NBL	NBT	SBL	SBT	WBL/T	EBL/T	PED
						1	6	5	2	4	8	3/7
Indian Creek Drive at 65 Street	ALL	ALL	-	-	Yellow	3.7	4.0	3.7	4.0	4.0	4.0	-
					Red	2.0	2.0	2.0	2.0	2.1	2.1	-
	8:00 - 9:00	1	180	39	Green	6	130	6	130	26	26	-
						5	126	5	126			5
	3:15 – 4:15	16	180	142		7	119	7	119	36	36	-
						6		6		32	32	5
Indian Creek Drive at 67 Street	ALL	ALL	-	-	Yellow	-	4.0	4.0	4.0	4.0	4.0	-
					Red	-	2.4	2.4	2.4	2.7	2.7	-
	8:00 – 9:00	1	180	37	Green	-	117	18	141	26	26	-
						-	114		138	24	24	5
	3:15 – 4:15	16	180	43		-	105	13	124	43	43	-
						-	102		121	41	41	5

Recommended Green Time Interval Changes highlighted in yellow

Signal Timing Modifications for incorporation of LPI

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Incorporation of Technology

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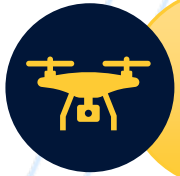
Metric is a technology focused firm that specializes in transportation planning and design.

With every project, we look at ways to link innovation and real-world experiences to keep our clients on the cutting-edge of transportation technology.

Metric offers a convergence of technology with traditional civil engineering services with a focus on the future goal of connected and autonomous vehicle infrastructure (i.e., express lanes, reversible lanes, ramp metering, Transportation Systems Management & Operations (TSM&O) strategies, Integrated Corridor Management (ICM), and more.



Convergence of technology with traditional civil engineering (i.e., express lanes, reversible lanes, CV, TSM&O, ICM)



Drone technology and applications & interactive public involvement tools



Linking innovation and real-world experience to remain on the cutting-edge of transportation technology



Focus on the future goal of CV/AV infrastructure

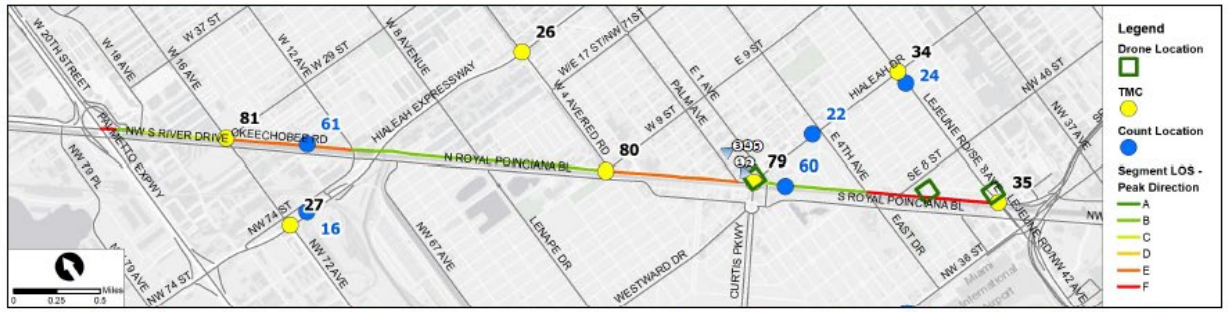
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Bottleneck Identification & Prioritization

Districtwide use of Drones

Identify System Impacts

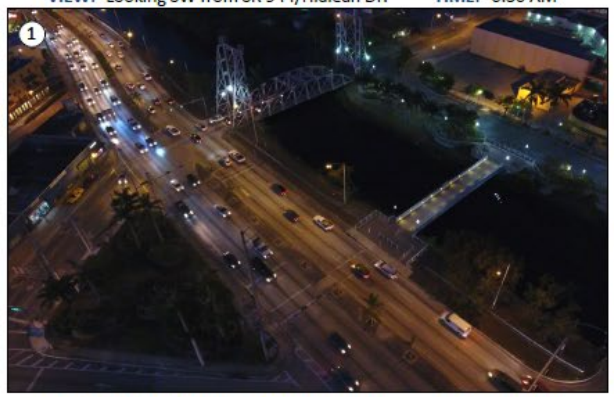
Identify Duration of Impacts



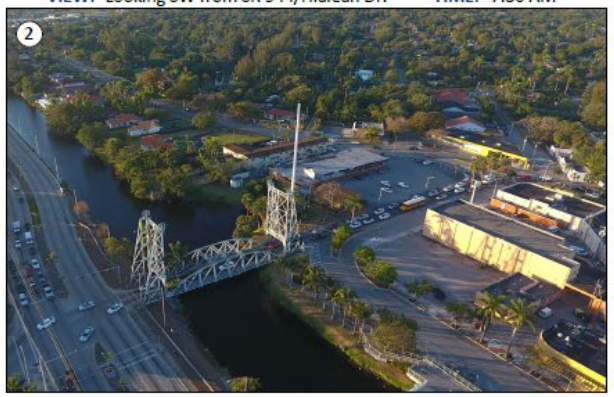
SR 25 / US 27 / Okeechobee Road

Access Class: 4	Functional Class: Principal Arterial
Travel Time & Delay Study	From: SR 826/Palmetto Expressway To: SR 953/SW 42 Avenue
Bottleneck Details	Location: SR 944/Hialeah Drive/NW 54 Street Duration: 2 hours Impact Area: SEB Approach
Queue	Initial: 400 feet Max: 1,400 feet Direction: Southeastbound

VIEW: Looking SW from SR 944/Hialeah Dr. TIME: 6:30 AM



VIEW: Looking SW from SR 944/Hialeah Dr. TIME: 7:30 AM



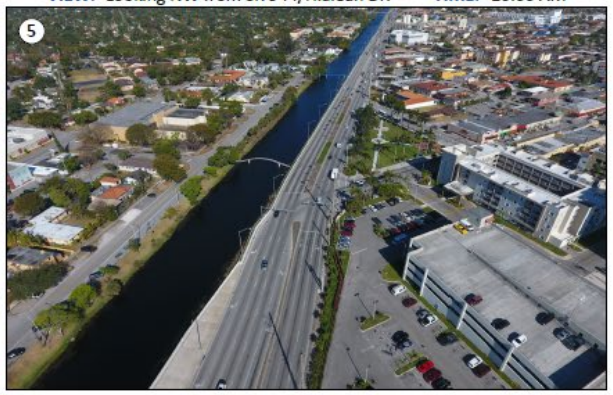
VIEW: Looking NW from SR 944/Hialeah Dr. TIME: 8:00 AM



VIEW: Looking NW from SR 944/Hialeah Dr. TIME: 9:00 AM



VIEW: Looking NW from SR 944/Hialeah Dr. TIME: 10:00 AM



Field Notes

- 6:30 AM: SEB and NWB traffic volumes begin to increase
- 7:30 AM: SEB volumes have increased. The SEB queues on US 27 extend 1,000 ft. SEB traffic needs a minimum of two cycles to clear.
- 8:00 AM: SEB traffic volumes appear to have reached capacity and queues now extend 1,400 feet. Queues on the side streets are high dues to the long green time on US 27. Many side streets appear to need multiple cycles to clear
- 9:00 AM: NEB and SEB traffic patterns seem to have peaked. SEB queues now extend 1,300 feet.
- 10:00 Traffic patterns in the SE B direction has improved to less than a 200 feet queue. Traffic clears in one cycle.

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Bottleneck Identification & Prioritization

Comprehensive Bottleneck Assessment Matrix

PARAMETER SCORING: ++ (1.0) + (0.8) o (0.6) - (0.4) -- (0.2)

CORRIDOR #	BOTTLENECK LOCATION	CRITERIA														Total
		FACILITY TYPE	5	SPEED-FLOW RELATIONSHIP	10	INTIAL CONGESTION TIME OF DAY	10	DURATION	25	MAX QUEUE LENGTH	15	TRAVEL TIMES	15	BOTTLENECK IMPACT AREA	20	
1 & 18	SR 9 / NW 27 Avenue at SR 944 / NW 54 Street	Urban Principal Arterial	-- 1.0	Index graph is steady	++ 10.0	7:30 AM	+ 8.0	45 minutes	++ 25.0	1,300 feet	+ 12.0	LOS F	-- 3.0	SR 9 SB, Localized	++ 20.0	79.0
2	SR 9 / SW 57 Avenue at US 41 / SW 8 Street	Urban Principal Arterial	-- 1.0	Nearby count not available, observation showed progressively poor operations (negative trend assumed)	- 4.0	7:00 AM	o 6.0	2 hours	o 15.0	1,800 feet	o 9.0	LOS E	- 6.0	EB and NB approaches to downstream intersections	+ 16.0	57.0
3 & 18	SR 25/US 27/ Okeechobee Road at SR 944/Hialeah Dr	Urban Principal Arterial	-- 1.0	Index graph is steady showing a capacity of approx. 700vph/ln	++ 10.0	7:30 AM	+ 8.0	2.5 hours	o 15.0	1,400 Feet	+ 12.0	LOS E	- 6.0	SEB to the downstream intersection	+ 16.0	68.0
4	SR 94 / SW 88 Street at SR 874 NB/SB Ramps	Urban Principal Arterial	-- 1.0	Index graph shows upward parabola for most of the morning traffic period	-- 2.0	6:30 AM	- 4.0	3.0 hours	- 10.0	4,500 Feet	-- 3.0	LOS C	+ 12.0	SR 94 EB Corridor approaching SR 874	o 12.0	44.0
5	SR 94 / SW 88 Street at SW 122 Avenue	Urban Principal Arterial	-- 1.0	Index graph shows upward parabola with congestions beginning to dissipate around 9:15 AM	-- 2.0	6:30 AM	- 4.0	3.0 hours	- 10.0	7,400 feet	-- 3.0	LOS F	-- 3.0	SR 94 EB Corridor in addition to NB approaches	-- 4.0	27.0
6	SR 823 / NW 57 Avenue at SR 826 Ramps	Urban Principal Arterial	-- 1.0	Nearby count not available, observations indicate fluctuation in queues (wave-like)	o 6.0	7:00 AM	o 6.0	2.5 hours	o 15.0	3,500 feet	-- 3.0	LOS F	-- 3.0	SB Corridor	o 12.0	46.0
7	SR 825 / NW 137 Avenue at SR 94 / SW 88 Street	Urban Principal Arterial	-- 1.0	Index graph is steady	++ 10.0	7:00 AM	o 6.0	1.0 hour	+ 20.0	1,200 feet	+ 12.0	LOS F	-- 3.0	SR 825 NB, Localized	++ 20.0	72.0
8 & 12	SR 826 / NE 167 Street at SR 915 / NE 6 Avenue	Urban Principal Arterial	-- 1.0	Index graph is steady on SR 915 and field observations revealed steady flows on SR 826	++ 10.0	7:30 AM	+ 8.0	30 minutes	++ 25.0	1,000 feet	+ 12.0	LOS C	+ 12.0	SR 826 EB, Localized	++ 20.0	88.0
9	SR 860 / NE 186 Street at NE 15 Avenue	Urban Minor Arterial	- 2.0	Overall index graph is steady with a slight negative trend from a reduction in traffic demand	++ 10.0	7:45 AM	++ 10.0	2.0 hours	o 15.0	2,000 feet	- 6.0	LOS D	o 9.0	SR 860 EB Corridor	o 12.0	64.0
10	SR 860 / NW 186 Street at NW 87 Avenue	Urban Minor Arterial	- 2.0	Index shows a negative trend	- 4.0	7:30 AM	o 6.0	2.0 hours	o 15.0	750 feet	++ 15.0	LOS C	+ 12.0	Localized	++ 20.0	74.0
11	SR 826 / NE 163 Street at US 1 / Biscayne Blvd	Urban Principal Arterial	-- 1.0	Index graph mostly shows a negative trend	- 4.0	7:30 AM	+ 8.0	1.5 hours	+ 20.0	1,700 feet	o 9.0	LOS F	-- 3.0	SR 826 EB Approach and closely spaced intersection	+ 16.0	61.0
12 & 13	SR 922 / NE 125 Street at NE 6 Avenue & Dixie Highway	Urban Minor Arterial	- 2.0	Index shows positive trend and remains stable	+ 8.0	8:00 AM	++ 10.0	1.5 hours	+ 20.0	900 feet	++ 15.0	LOS F	-- 3.0	Mostly remains local with downstream impacts	+ 16.0	74.0
14	SR 932 / NW 103 Street at NW 17 Avenue	Urban Principal Arterial	-- 1.0	Index graph shows steady flows	++ 10.0	6:30 AM	- 4.0	3 hours	- 10.0	550 feet	++ 15.0	LOS C	+ 12.0	Localized	++ 20.0	72.0
15	SR 933 / NW 12 Avenue at NW 7 Street	Urban Minor Arterial	- 2.0	Index shows steady flow	++ 10.0	7:00 AM	o 6.0	2 hours	o 15.0	900 feet	++ 15.0	LOS E	- 6.0	Queues impact EB and NB downstream intersections	- 8.0	62.0
16	SR 934 / NW 79 Avenue at NW 7 Avenue	Urban Principal Arterial	-- 1.0	Index shows wave-like trend	o 6.0	7:00 AM	o 6.0	2 hours	o 15.0	1,200 feet	+ 12.0	LOS F	-- 3.0	EB and WB with downstream impacts	- 8.0	51.0
17	SR 934 / NW 74 Street at NW 72 Avenue	Urban Principal Arterial	-- 1.0	Index shows wave-like trend	o 6.0	7:15 AM	o 6.0	1.5 hours	+ 20.0	Aerials unavailable	o 9.0	LOS F	-- 3.0	WB Approach	+ 16.0	61.0
20	SR 953 / NW 42 Avenue at SR 25 / US 27 / Okeechobee Rd	Urban Principal Arterial	-- 1.0	Index graph shows steady north of congested segment (pictures & travel times reveal low capacity)	- 4.0	6:30 AM	- 4.0	3.5 hours	-- 5.0	2,700 feet	-- 3.0	LOS F	-- 3.0	SEB and SB corridors impacted	-- 4.0	24.0
22	SR 959 / SW 57 Avenue at SW 40 Street / Bird Road	Urban Minor Arterial	- 2.0	Index graph shows steady flows	++ 10.0	8:30 AM	++ 10.0	1.0 hour	+ 20.0	1,700 feet	o 9.0	LOS D	o 9.0	NB corridor	o 12.0	72.0
23	SR 968 / Flagler Street at SW 78 Avenue	Urban Minor Arterial	- 2.0	Index shows wave-like trend	o 6.0	7:30 AM	+ 8.0	2.0 hours	o 15.0	3,400 feet	-- 3.0	LOS F	-- 3.0	SR 968 EB Corridor	o 12.0	49.0
24	SR 972 / SW 13 Street at SW 2 Avenue	Urban Minor Arterial	- 2.0	Index shows positive and steady trend	++ 10.0	8:30 AM	++ 10.0	45 minutes	++ 25.0	1,400 feet	+ 12.0	LOS F	-- 3.0	SR 972, Localized	++ 20.0	82.0
25	SR 973 / NW 87 Avenue at SW 24 Street / Coral Way	Urban Principal Arterial	-- 1.0	Index graph shows steady flows	++ 10.0	8:00 AM	++ 10.0	1.5 hours	+ 20.0	800 feet	++ 15.0	LOS D	o 9.0	EB and NB, Localized	++ 20.0	85.0
26	SR 973 / NW 87 Avenue at SR 836 EB Ramps	Urban Principal Arterial	-- 1.0	Nearby count not available, travel time data and observations indicate segment operates under oversaturated conditions	- 4.0	7:30 AM	+ 8.0	2.0 hours	o 15.0	1,700 feet	o 9.0	LOS F	-- 3.0	NB SR 973 and downstream intersection impacts	+ 16.0	56.0
27	SR 973 / SW 87 Avenue at SW 112 Street	Urban Minor Arterial	- 2.0	Nearby count not available, observations indicate fluctuation in queues (wave-like)	o 6.0	8:30 AM	++ 10.0	1.0 hour	o 15.0	2,500 feet	-- 3.0	LOS D	o 9.0	Three approaches to downstream intersections	- 8.0	53.0
28	SR 976/SW 40 Street at SR 826 SB Off-ramp	Urban Principal Arterial	-- 1.0	Index graph is mostly steady with a dip from 8-8:30 AM	+ 8.0	7:00 AM	o 6.0	2.5 hours	o 15.0	1,600 feet	o 9.0	LOS E	- 6.0	EB and NB, Localized	++ 20.0	65.0

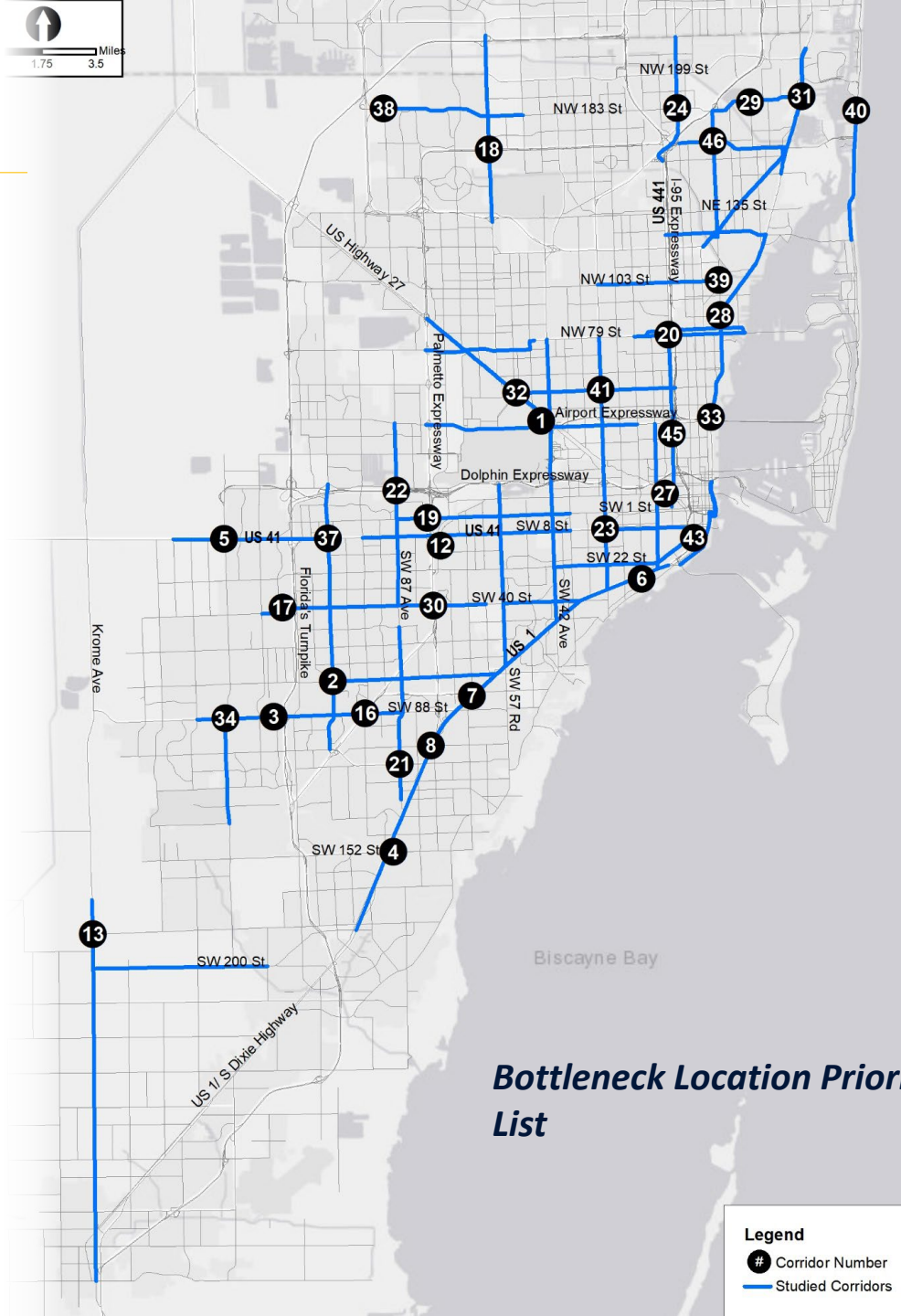
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Bottleneck Identification & Prioritization

Bottleneck Location Priority List

Rank	Bottleneck Location	Score
1	SR 953 / NW 42 Ave at SR 25 / US 27	24
2	SR 985 / SW 107 Ave at SR 986 / SW 72 St	26
3	SR 94 / SW 88 St at SW 122 Ave	27
4	US 1 / SR 5 / South Dixie Hwy at SW 152 St	27
5	US 41 / SR 90 / SW 8 Street at SR 825 / SW 137 Ave	27
6	US 1 / SR 5 / South Dixie Hwy at SW 17 Ave	29
7	US 1 / SR 5 / South Dixie Hwy at SW 67 Ave	31
8	US 1 / SR 5 / South Dixie Hwy at SW 104 St	33
9	SR 994 / SW 200 St at SW 147 Ave	34
10	SR 976 / SW 40 St at SW 42 Ave	35
11	US 41 / SR 90 / SW 8 St at SR 953 / SW 42 Ave	36
12	US 41 / SR 90 / SW 8 St at SW 74 Ave	36
13	SR 997 / Krome Ave at SW 184 St	38
14	SR 948 / NW 36 Street at East Dr	39
15	US 1 / SR 5 / South Dixie Hwy at SW 42 Ave	40
16	SR 94 / SW 88 St at SR 874 Interchange	44
17	SR 976 / SW 40 St at Turnpike Interchange	44
18	SR 823 / NW 57 Ave at SR 826 Interchange	46
19	SR 968 / Flagler St at SW 78 Ave	49
20	SR 934 / NW 79 Ave at NW 7 Ave	51
21	SR 973 / SW 87 Ave at SW 112 St	53
22	SR 973 / NW 87 Ave at SR 836 Interchange	56
23	SR 9 / SW 27 Ave at US 41 / SW 8 St	57

Rank	Bottleneck Location
24	US 441 / SR 5 at NW 183 St
25	SR 826 / NE 163 St at US 1 / Biscayne Blvd
26	SR 934 / NW 74 St at NW 72 Ave
27	SR 933 / NW 12 Ave at NW 7 St
28	US 1 / SR 5 / Biscayne Blvd at NE 87 St
29	SR 860 / NE 186 St at NE 15 Ave
30	SR 976/SW 40 St at SR 826 Interchange
31	US 1 / SR 5 / Biscayne Blvd at NE 185 St
32	SR 25/US 27/ Okeechobee Rd at SR 944
33	US 1 / SR 5 / Biscayne Blvd at NE 38 St
34	SR 825 / NW 137 Ave at SR 94 / SW 88 St
35	SR 932 / NW 103 St at NW 17 Ave
36	SR 959 / SW 57 Ave at SW 40 St / Bird Road
37	SR 985 / SW 107 Ave at SW 8 St
38	SR 860 / NW 186 St at NW 87 Ave
39	SR 922/NE 125 St at NE 6 Ave & Dixie Hwy
40	SR A1A / Collins Ave at 178 St
41	SR 9 / NW 27 Ave at SR 944 / NW 54 St
42	US 1 / SR 5 / Brickell Ave at SE 13 St
43	SR 972 / SW 13 St at SW 2 Ave
44	SR 973/ NW 87 Ave at SW 24 St / Coral Way
45	US441/SR7/NW 7Ave at SR25/US27/NW36 St
46	SR 826 / NE 167 St at SR 915 / NE 6 Ave

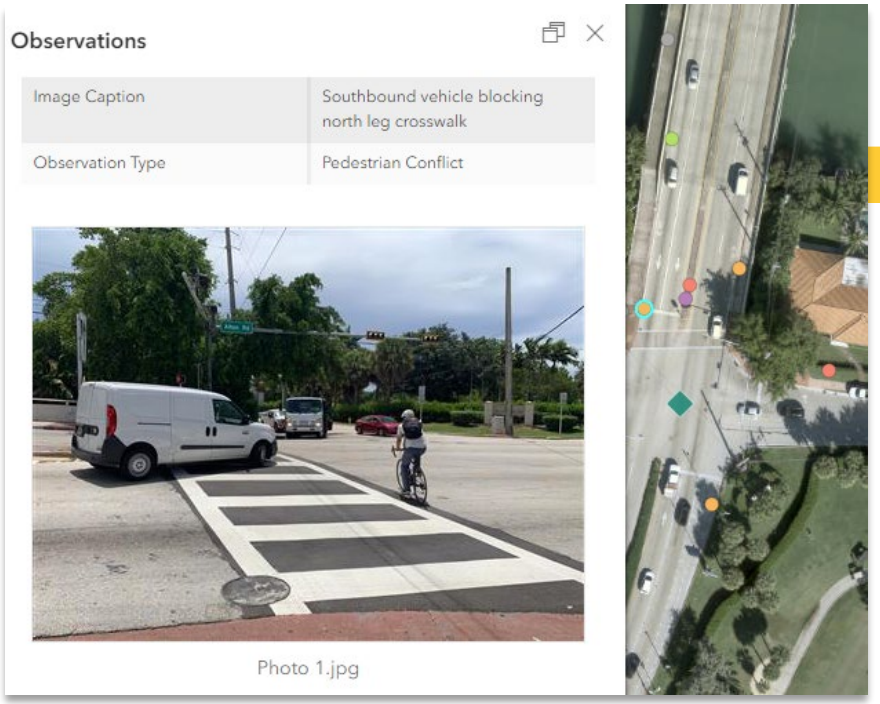


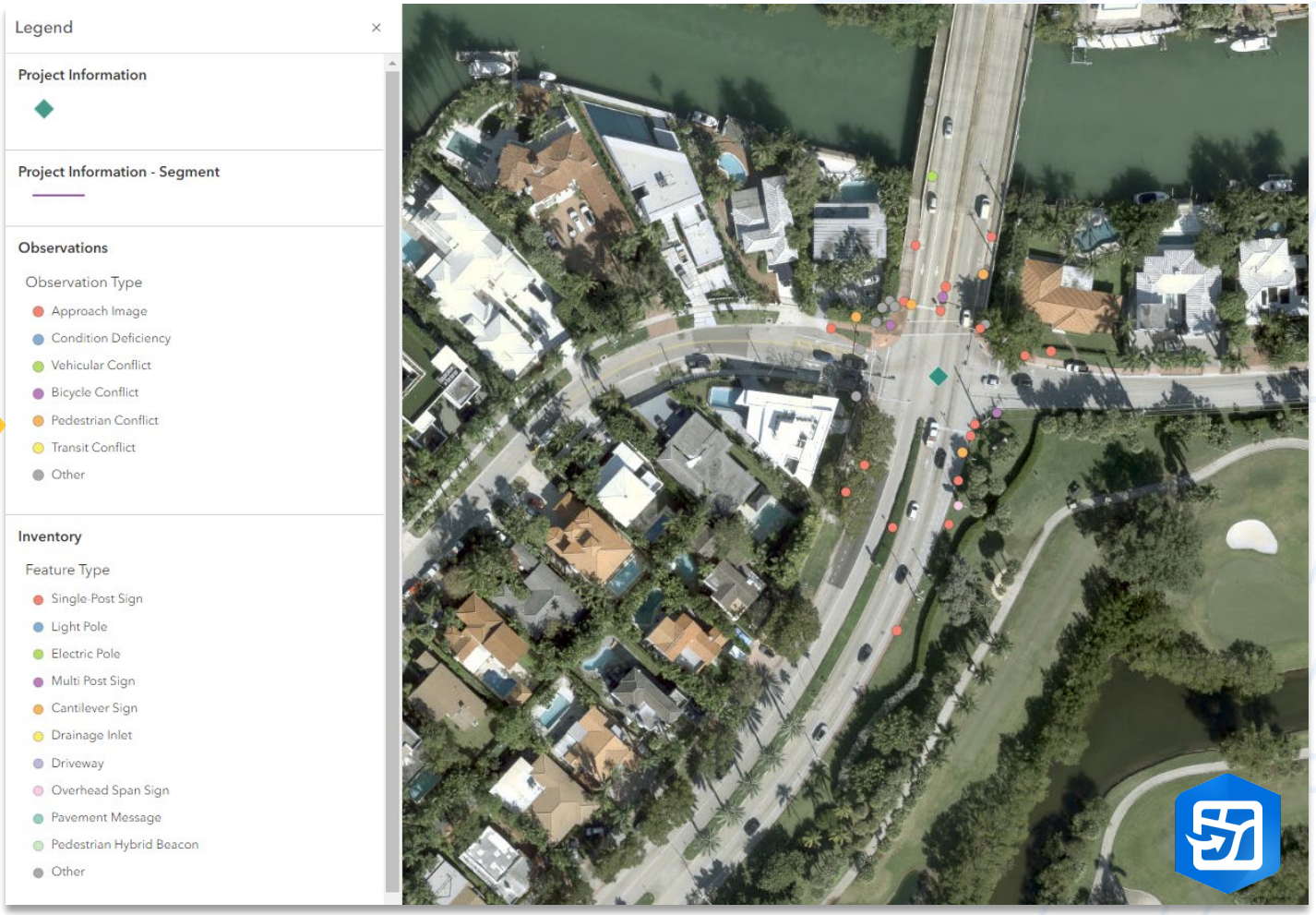
Bottleneck Location Prior List

metric

Field Reviews

- **ArcGIS Field Maps Application**
  - Document observations
  - Study location inventories
  - Simplify Report Production
  - Build database



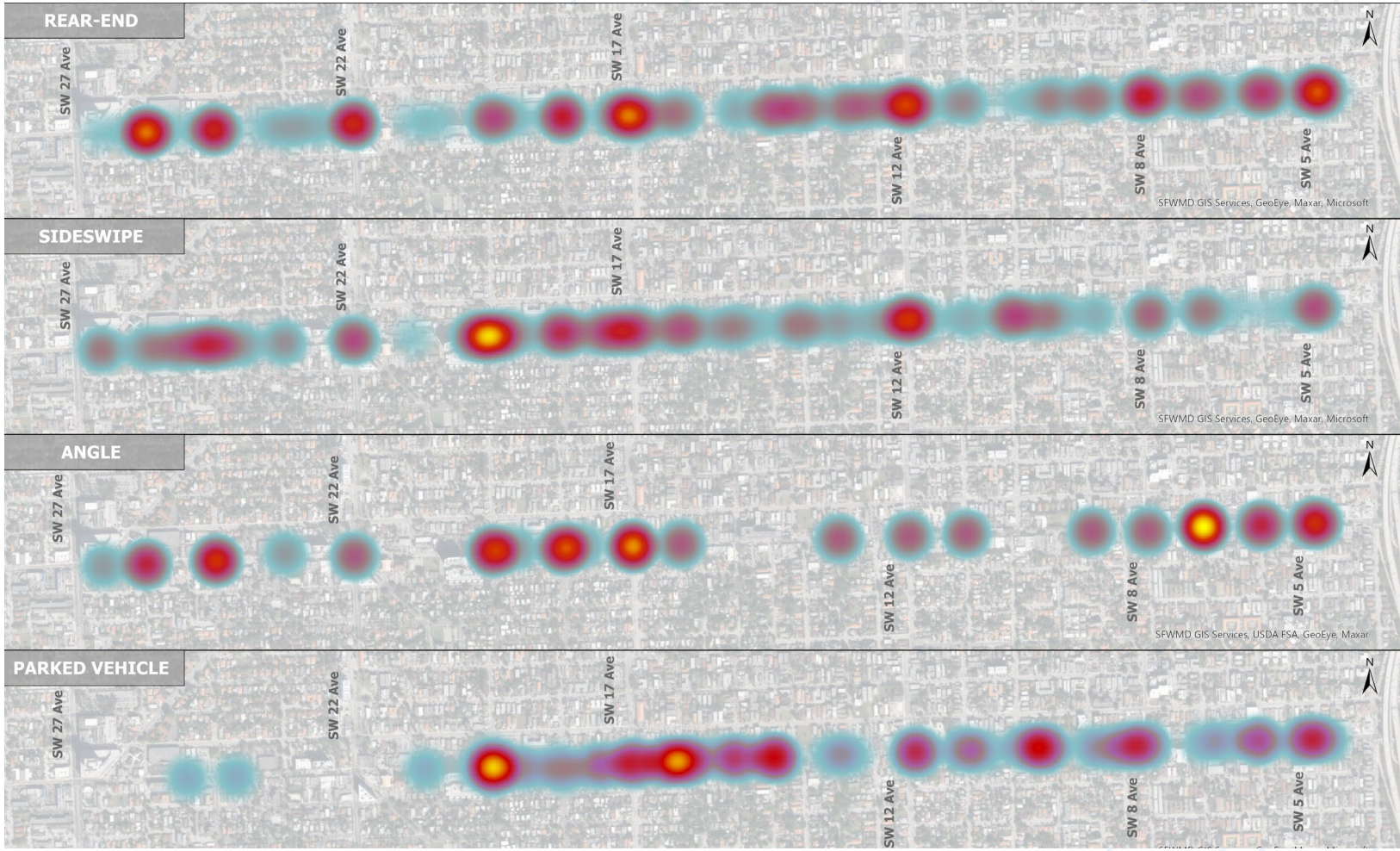


Customized ArcGIS Field Maps Application for field reviews

metric

Crash Analysis

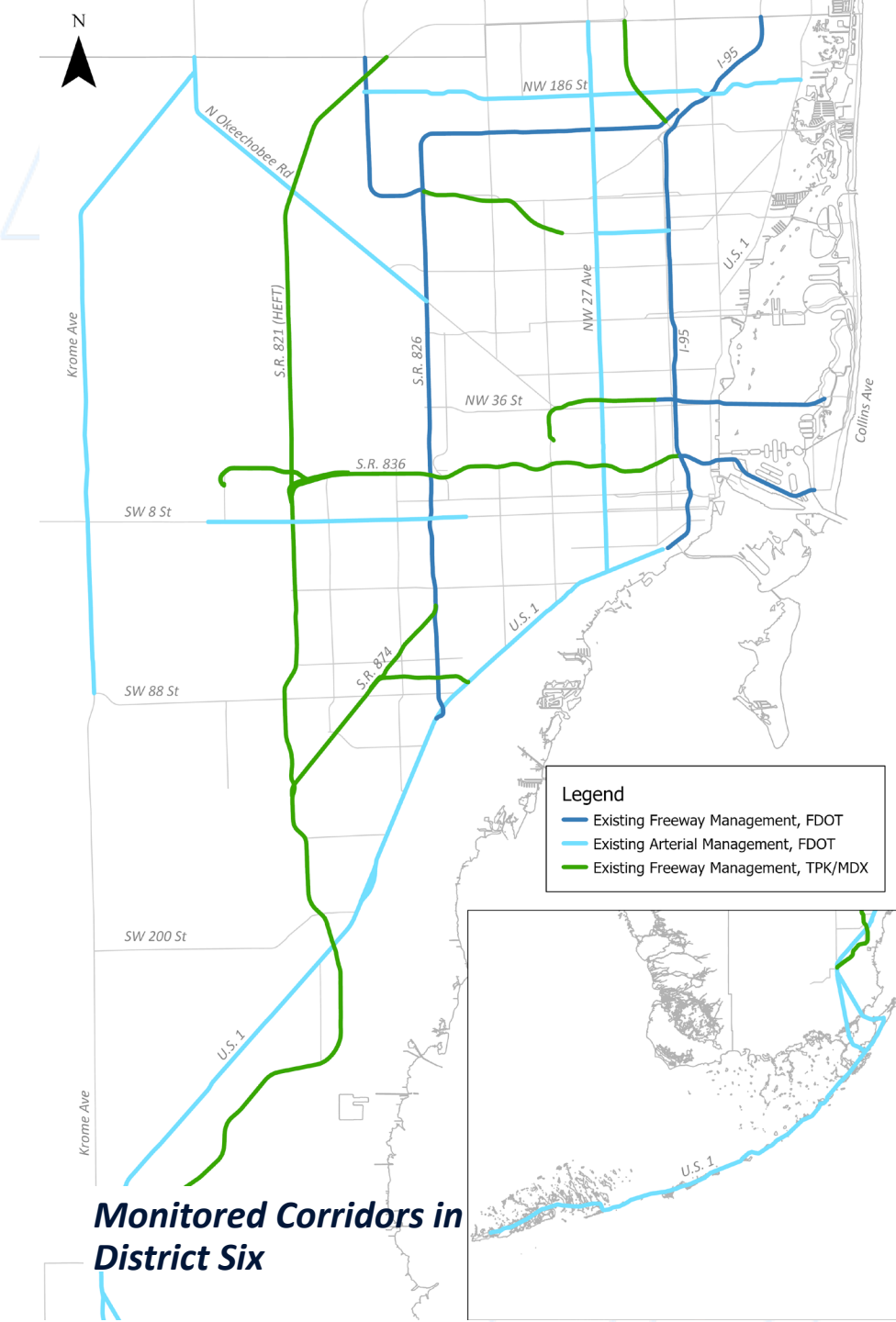
- **Spatial Analysis of Crash Data**
  - Heat Maps
  - Automate Mapping
  - Crash Statistics
    - Crash Type, severity, etc.
    - Emphasis Areas
    - Vulnerable Users



Crash Data Heat Maps

Leverage Technology & Operations

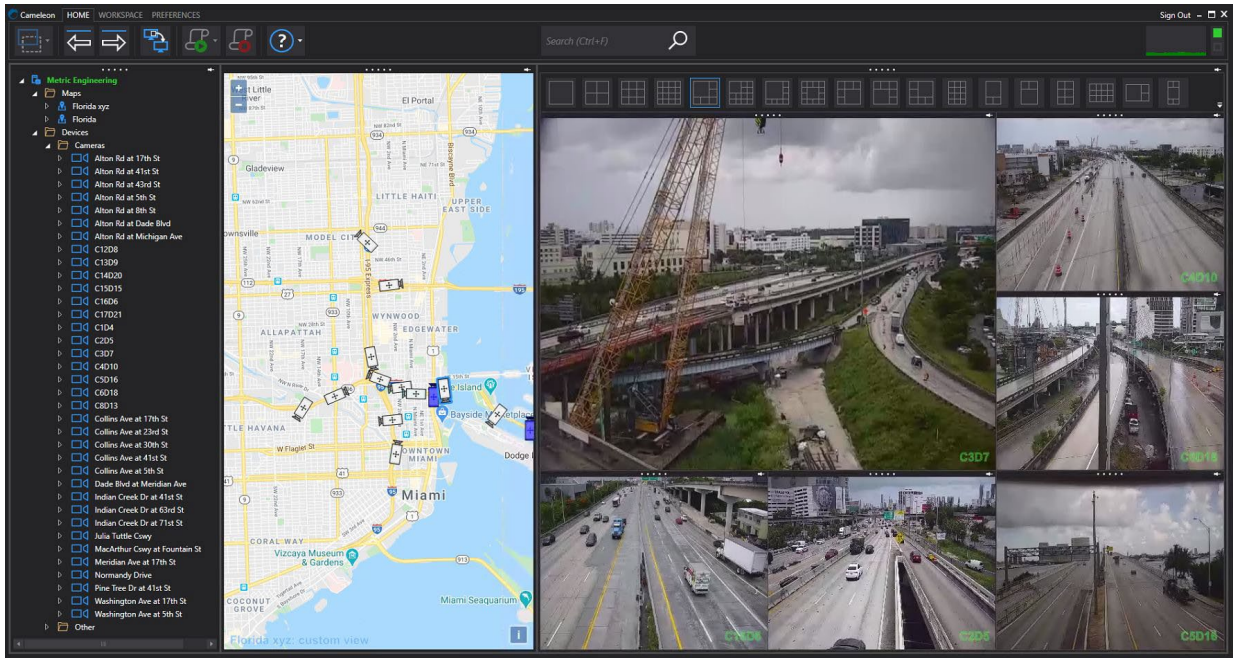
- **Awareness of surrounding projects/master plans**
  - Miami-Dade County Signal System Upgrade
    - Adaptive Signals (SCOOT)
    - Automated Signal Performance Measures (ATSPM)
  - TSM&O Master Plan
  - Planned Projects (RRR, PD&E, etc.)
  - SMART PLAN
  - KEYS COAST (Monroe County Connected Vehicles)
- TSM&O Activities
  - TSM&O Network
  - Monitored Corridors



Monitored Corridors in District Six

Leverage Technology & Operations

- TSM&O Master Plans Experience
  - Districts 3, 5, and 6, Counties, Expressway Authorities, Transportation Planning Organizations (TPOs)
- Smart Work Zones (SWZ)
- Traffic Management Center Operations
- Signal Retiming



I-395 Design-Build (SWZ)





TSM&O Master Plans

metric

Open Discussion

Thank you!

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metric

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Thank you!!