

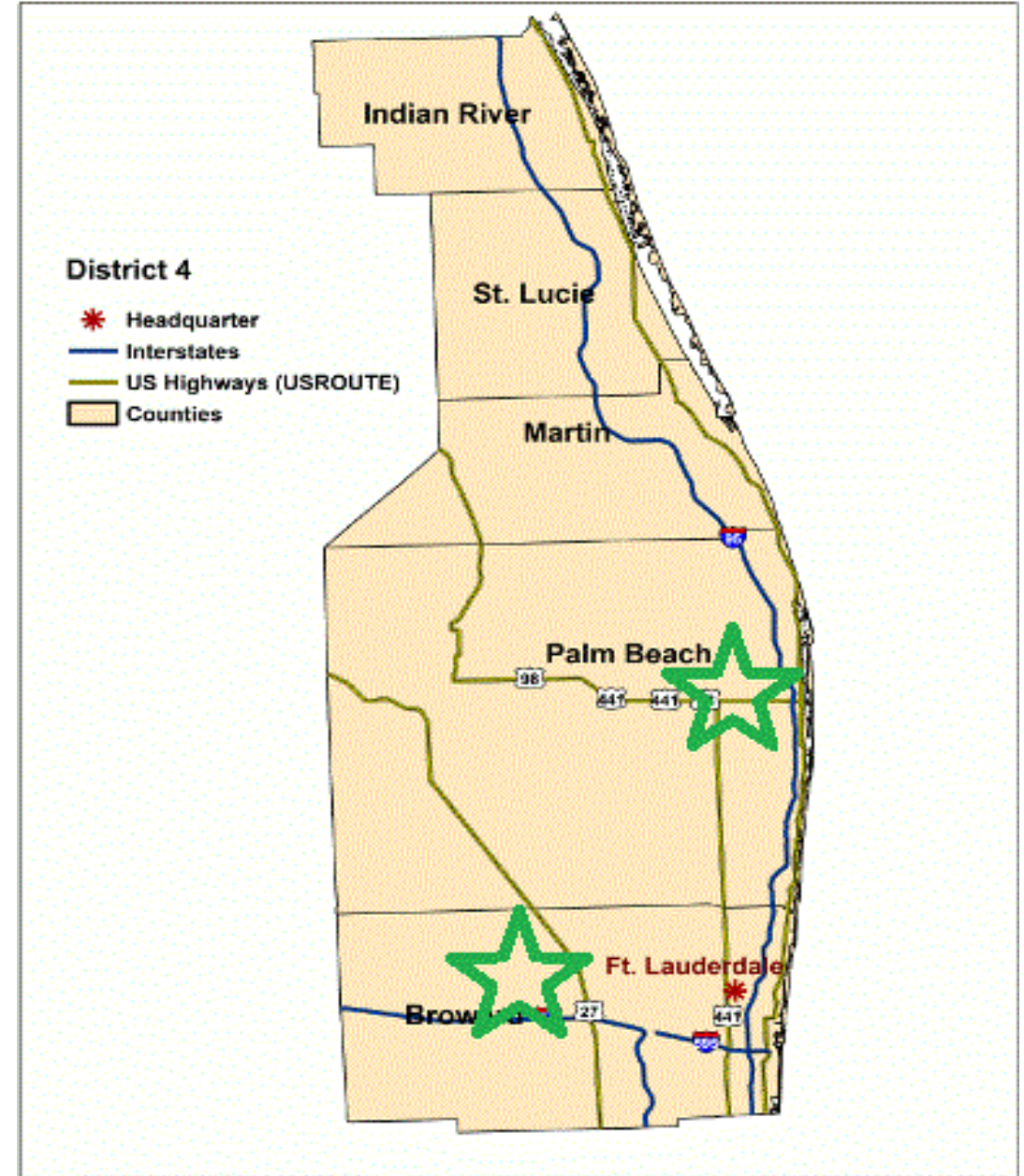
Answering Planning questions through the Operations group with technology. Two real case-studies for Origination/Destination on an arterial basis.

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Discussion Points:

- Existing BlueTOAD deployments
- Two Case Studies:
 - Palm Beach County
 - City of Plantation
- Conclusions



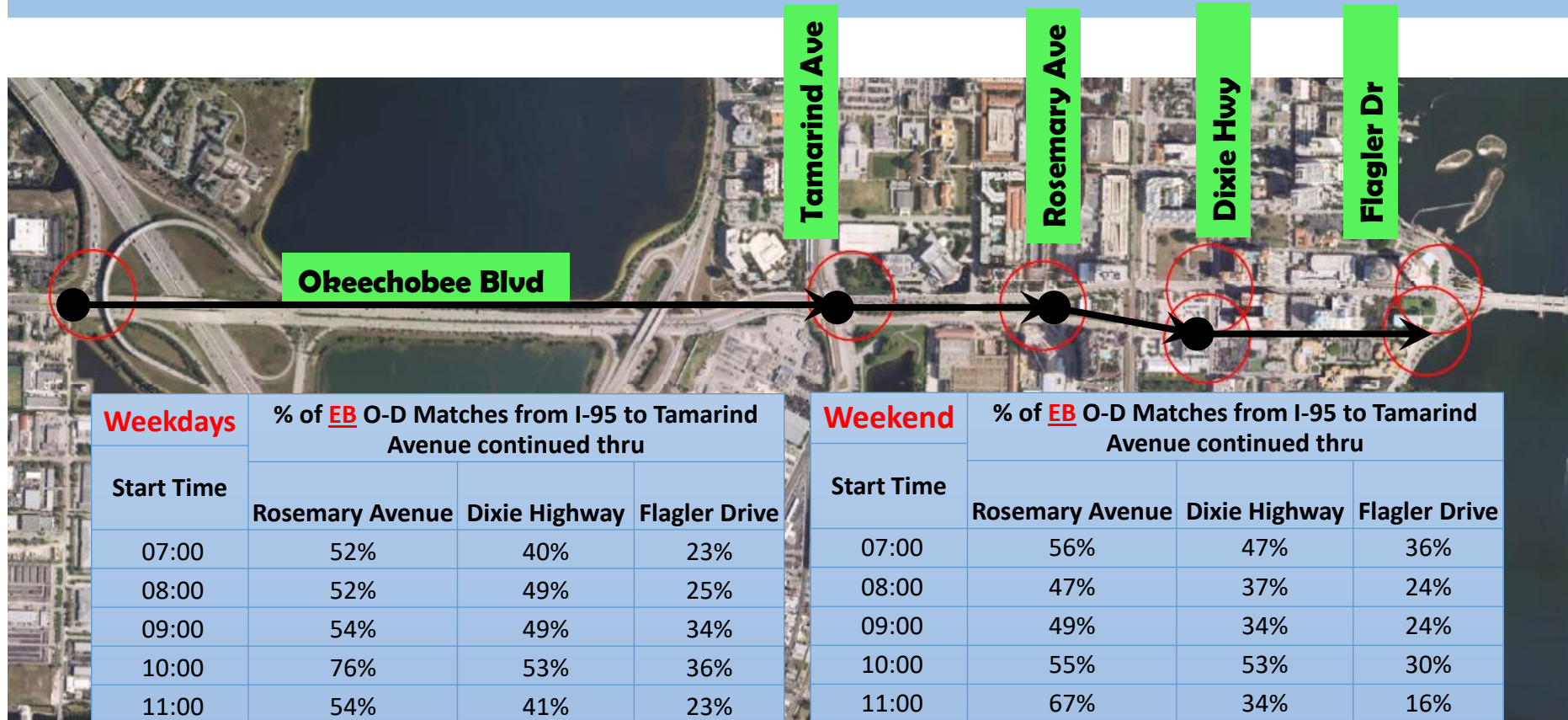
1: Palm Beach County

- 1) Downtown Development, access along major corridor
 - 1) What is the breakdown of traffic inbound along Okeechobee Boulevard? (eastbound)
 - 2) What is the breakdown of traffic outbound along Okeechobee Boulevard? (westbound)
- 2) Interested in one week period in peak season (summer alternate)
- 3) One year later

OD Process consisted of:

- Geography – what is unique
- Methodology – what are we working with
- Process – repeatable and updates in the future
- Results – understand the results

Downtown West Palm Beach: BlueTOAD Orig-Destination Results (9-18-2017 to 9-25-2017) - Eastbound



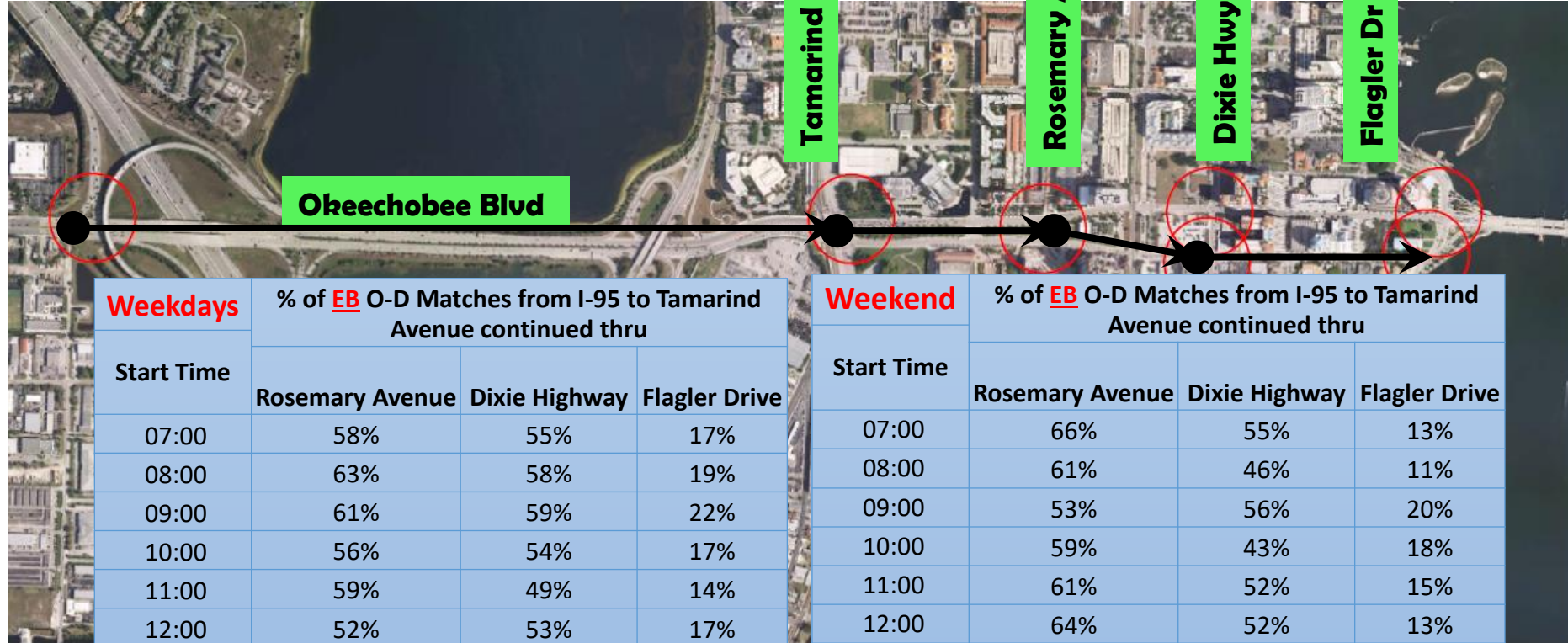
Weekdays	% of EB O-D Matches from I-95 to Tamarind Avenue continued thru		
	Start Time	Rosemary Avenue	Dixie Highway
07:00	52%	40%	23%
08:00	52%	49%	25%
09:00	54%	49%	34%
10:00	76%	53%	36%
11:00	54%	41%	23%
12:00	50%	45%	22%
13:00	45%	39%	24%
14:00	60%	47%	27%
15:00	61%	48%	25%
16:00	49%	44%	23%
17:00	48%	36%	18%
18:00	41%	31%	12%

Weekend	% of EB O-D Matches from I-95 to Tamarind Avenue continued thru		
	Start Time	Rosemary Avenue	Dixie Highway
07:00	56%	47%	36%
08:00	47%	37%	24%
09:00	49%	34%	24%
10:00	55%	53%	30%
11:00	67%	34%	16%
12:00	58%	50%	27%
13:00	55%	44%	26%
14:00	61%	49%	31%
15:00	52%	42%	20%
16:00	40%	37%	11%
17:00	57%	47%	21%
18:00	53%	39%	21%

Avg. **53%** **43%** **24%**

Avg. **54%** **42%** **23%**

Downtown West Palm Beach: BlueTOAD Orig-Destination Results (10-1-2018 to 10-21-2018) - Eastbound



Weekdays		% of EB O-D Matches from I-95 to Tamarind Avenue continued thru		
Start Time				
	Rosemary Avenue	Dixie Highway	Flagler Drive	
07:00	58%	55%	17%	
08:00	63%	58%	19%	
09:00	61%	59%	22%	
10:00	56%	54%	17%	
11:00	59%	49%	14%	
12:00	52%	53%	17%	
13:00	57%	46%	17%	
14:00	61%	50%	15%	
15:00	59%	54%	17%	
16:00	59%	55%	16%	
17:00	63%	52%	8%	
18:00	58%	55%	17%	

Weekend		% of EB O-D Matches from I-95 to Tamarind Avenue continued thru		
Start Time				
	Rosemary Avenue	Dixie Highway	Flagler Drive	
07:00	66%	55%	13%	
08:00	61%	46%	11%	
09:00	53%	56%	20%	
10:00	59%	43%	18%	
11:00	61%	52%	15%	
12:00	64%	52%	13%	
13:00	60%	48%	11%	
14:00	70%	58%	15%	
15:00	64%	50%	15%	
16:00	58%	43%	13%	
17:00	71%	48%	10%	
18:00	66%	55%	13%	

Avg.	59%	53%	16%
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Avg.	62%	50%	14%
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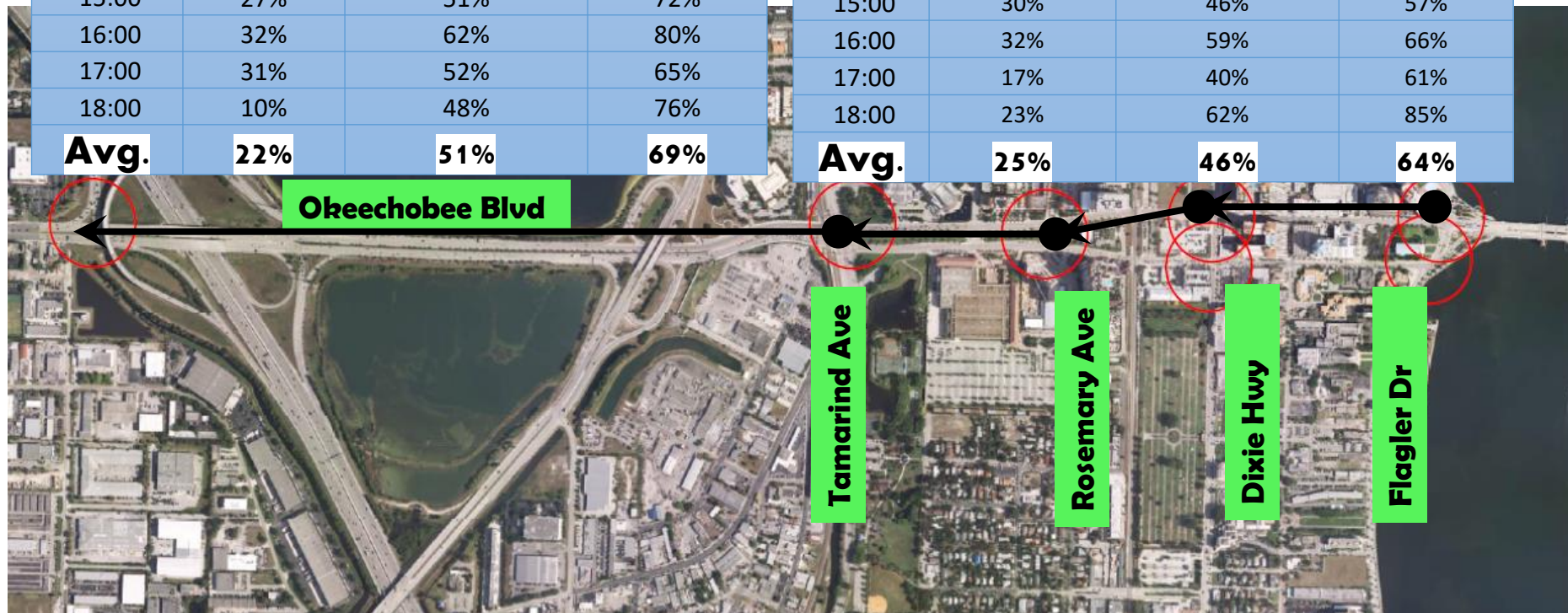
2017 Avg.	53%	43%	24%
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Avg.	54%	42%	23%
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Downtown West Palm Beach: BlueTOAD Orig-Destination Results (9-18-2017 to 9-25-2017) - Westbound

Weekdays	% of WB O-D Matches from Flagler to Dixie Hwy continued thru		
	Start Time	I-95	Rosemary Avenue
07:00	13%	47%	63%
08:00	15%	38%	77%
09:00	19%	53%	63%
10:00	22%	53%	67%
11:00	35%	60%	89%
12:00	20%	43%	55%
13:00	14%	47%	61%
14:00	15%	44%	71%
15:00	27%	51%	72%
16:00	32%	62%	80%
17:00	31%	52%	65%
18:00	10%	48%	76%
Avg.	22%	51%	69%

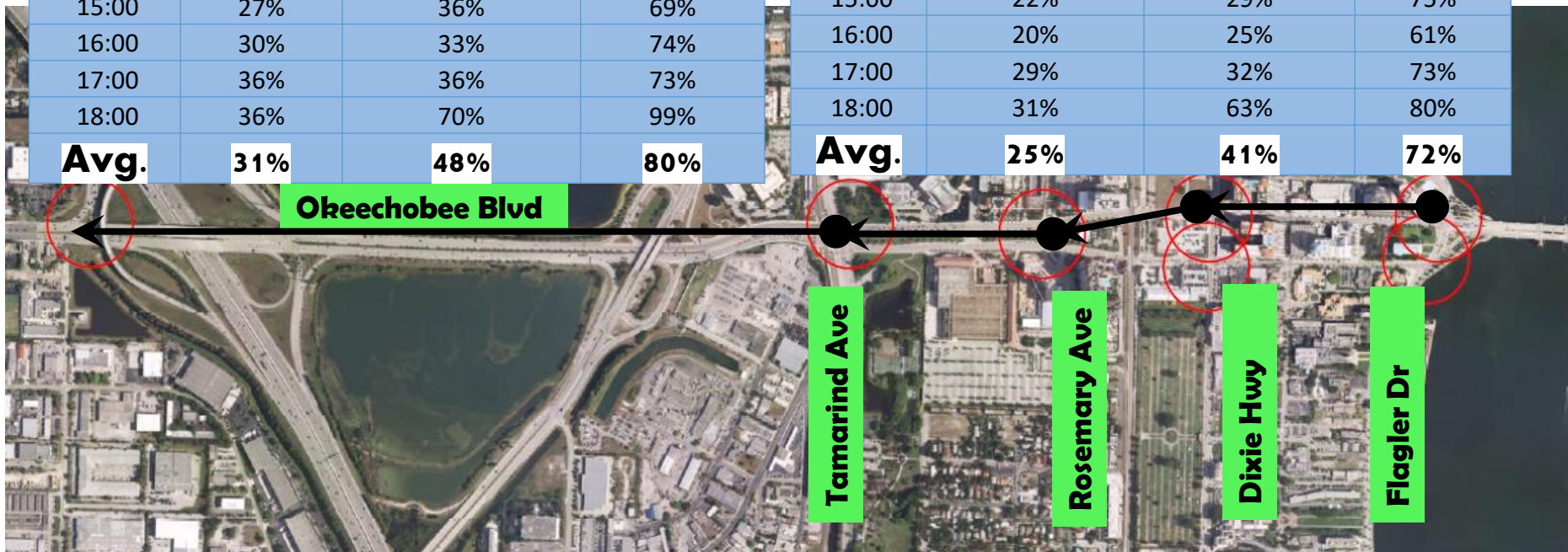
Weekend	% of WB O-D Matches from Flagler to Dixie Hwy continued thru		
	Start Time	I-95	Rosemary Avenue
07:00	Not Available		
08:00	13%	53%	67%
09:00	27%	41%	79%
10:00	25%	50%	75%
11:00	24%	33%	57%
12:00	32%	50%	61%
13:00	24%	44%	52%
14:00	8%	16%	48%
15:00	30%	46%	57%
16:00	32%	59%	66%
17:00	17%	40%	61%
18:00	23%	62%	85%
Avg.	25%	46%	64%



Downtown West Palm Beach: BlueTOAD Orig-Destination Results (10-1-2018 to 10-21-2018) - Westbound

Weekdays	% of WB O-D Matches from Flagler to Dixie Hwy continued thru			
	Start Time	I-95	Tamarind Avenue	Rosemary Avenue
	07:00	36%	70%	99%
	08:00	40%	55%	98%
	09:00	25%	53%	76%
	10:00	27%	54%	68%
	11:00	31%	51%	84%
	12:00	32%	48%	77%
	13:00	26%	45%	81%
	14:00	26%	45%	81%
	15:00	27%	36%	69%
	16:00	30%	33%	74%
	17:00	36%	36%	73%
	18:00	36%	70%	99%
Avg.		31%	48%	80%

Weekend	% of WB O-D Matches from Flagler to Dixie Hwy continued thru			
	Start Time	I-95	Tamarind Avenue	Rosemary Avenue
	07:00	31%	63%	80%
	08:00	34%	64%	94%
	09:00	20%	49%	68%
	10:00	18%	48%	70%
	11:00	27%	36%	71%
	12:00	27%	37%	61%
	13:00	22%	43%	77%
	14:00	29%	29%	68%
	15:00	22%	29%	75%
	16:00	20%	25%	61%
	17:00	29%	32%	73%
	18:00	31%	63%	80%
Avg.		25%	41%	72%



2017	Avg.	22%	51%	69%	Avg.	25%	46%	64%
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2: City of Plantation

- 1) City is relying on District 4 for arterial information (quickly)
 - 1) What is the breakdown of traffic routes entering our City?
 - 2) What is the breakdown of traffic routes leaving our City?
- 2) Interested in Commuter Traffic, AM/PM
- 3) Interested in Weekend Traffic, Saturdays

OD Process consisted of:

- Geography – what is unique
- Methodology – what are we working with
- Process – repeatable and updates in the future
- Results – understand the results

Methodology

Utilizing N. University @ Broward Blvd as a major hub for City of Plantation access, establish a vehicle match count Demand Matrix & Travel Time inbound & outbound

6 Primary access points into City of Plantation currently instrumented with Bluetooth readers

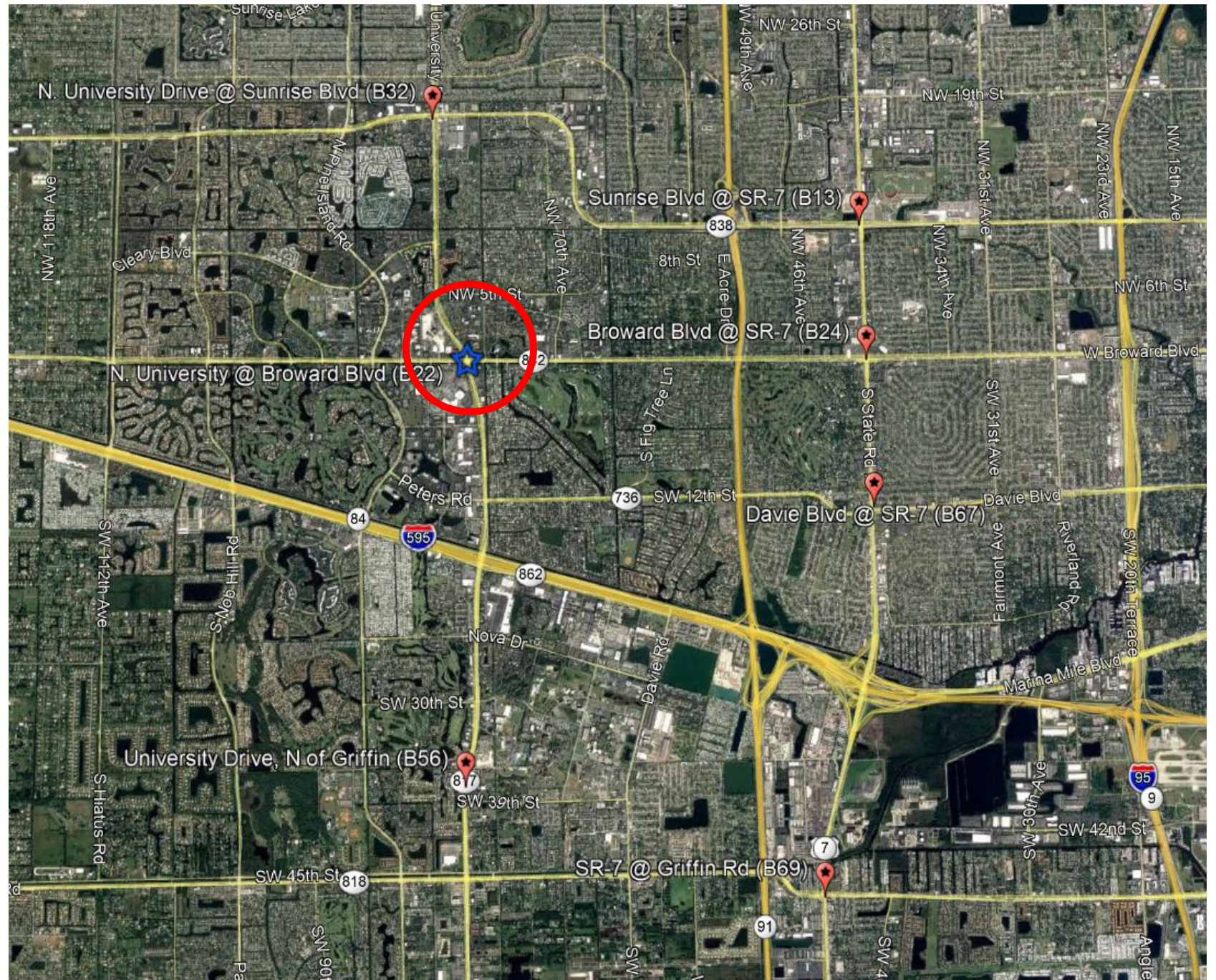
Existing BlueTOAD units were collecting data continuously providing:

- Travel Time data and
- Origination/Destination data via vehicle match counts

Time periods evaluated:
April 2018 & June 2018

Weekdays only:
AM Peak: 6:00 am – 9:00 am
(Ingress)
PM Peak: 4:00 pm – 7:00 pm
(Egress)

Weekends, 24 hour vehicle match counts



Process

6 Zones were created for collection points of data

Center point utilized:
N. University @ Broward Blvd

All zones converge to center point for data collection

Zone 1:

N. University Drive @ Sunrise Blvd.

Zone 2:

SR-7 @ Sunrise Blvd.

Zone 3:

Broward Blvd. @ SR-7

Zone 4:

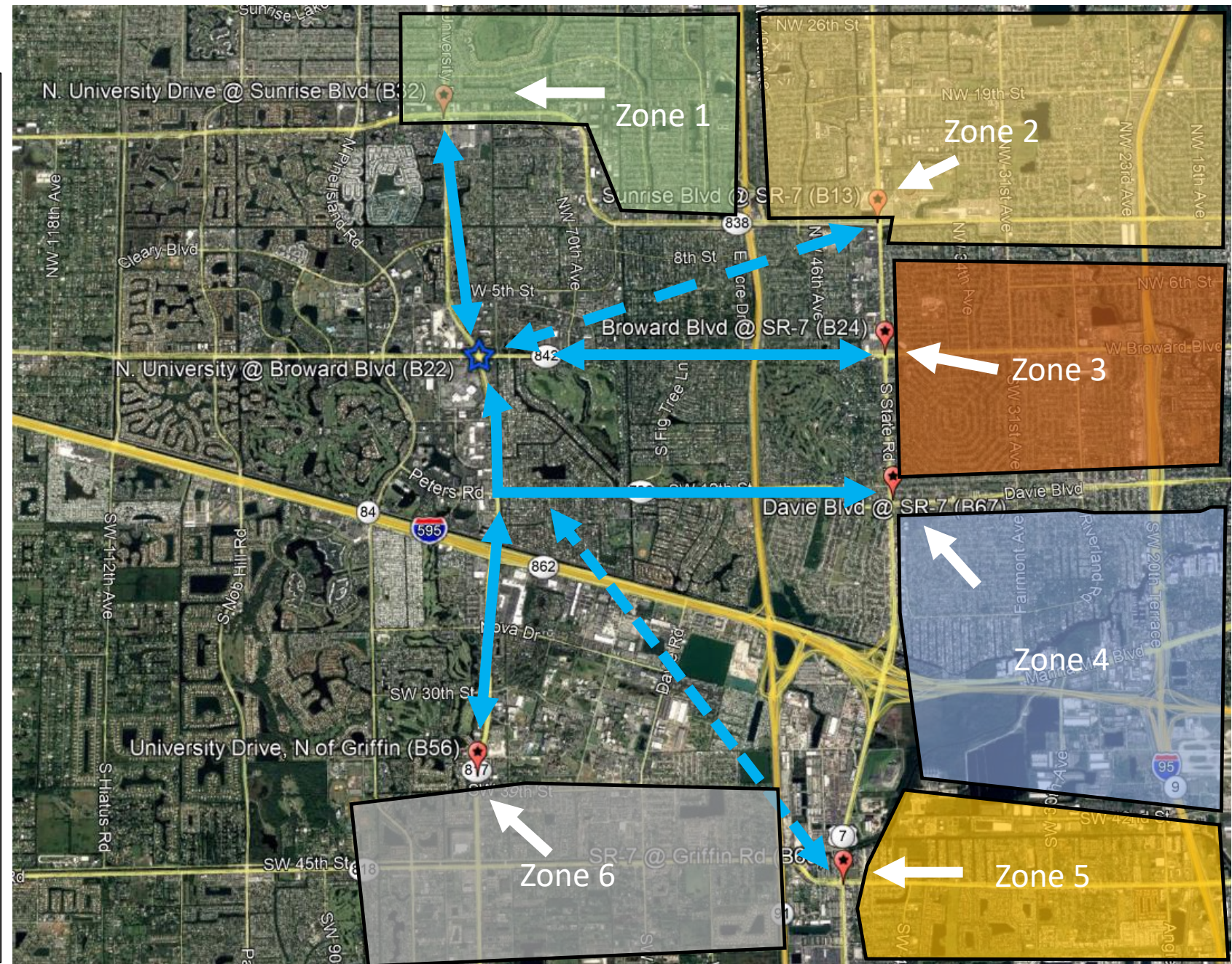
Davie Blvd @ SR-7

Zone 5:

Griffin Road @ SR-7

Zone 6:

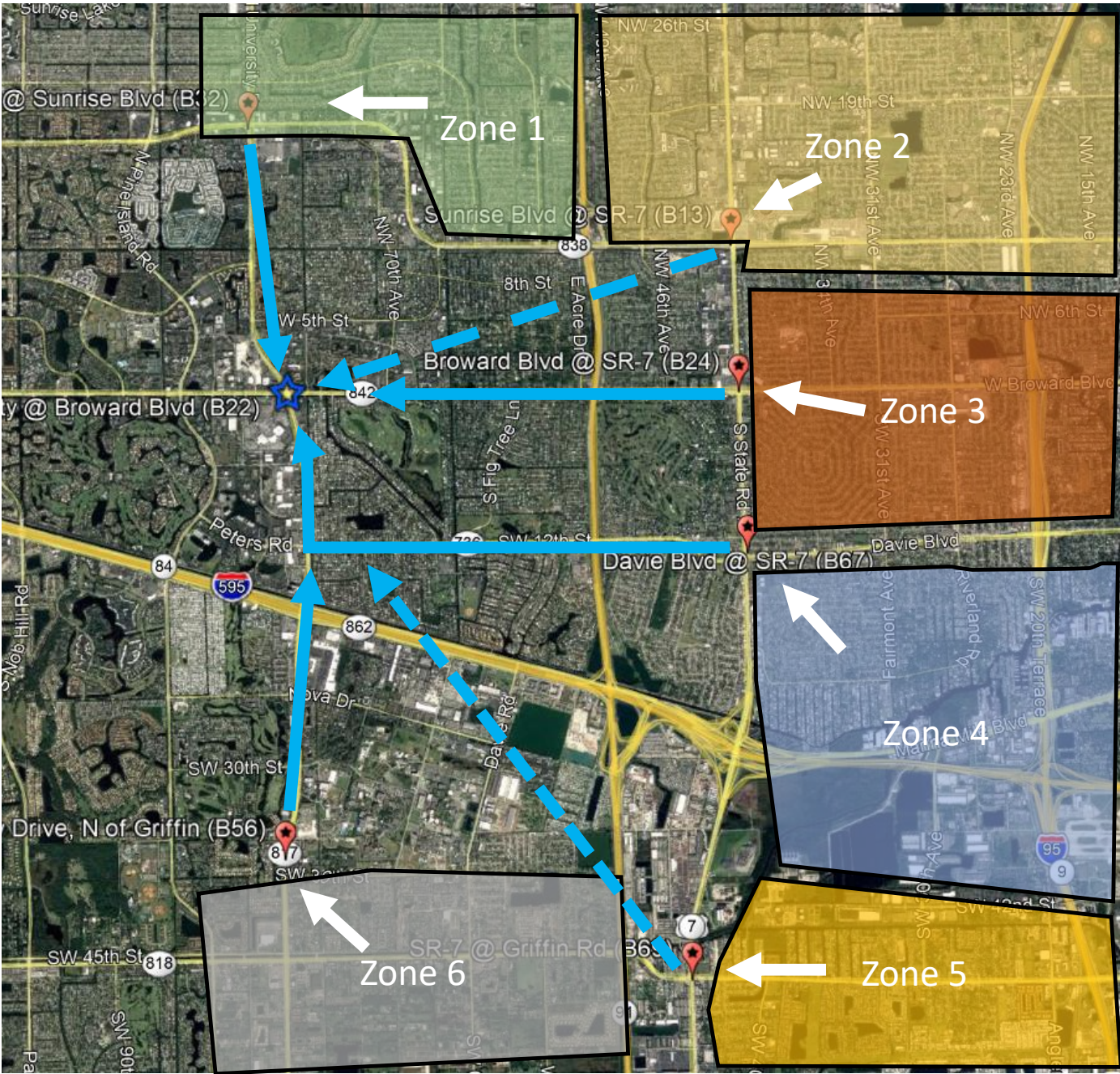
University Drive, North of Griffin Rd.



Results: OD & Travel Time

City of Plantation Inbound AM Peak: Weekdays, 06:00 am - 09:00 am	April Weekdays: Matches (%), Travel Time		June Weekdays: Matches (%), Travel Time	
Starting intersection	Arrival: N. University @ Broward Blvd		Arrival: N. University @ Broward Blvd	
N. University Drive @ Sunrise Blvd., Zone 1	4,008 (53%)	3.8 mins	3,076 (51%)	4.0 mins
Broward Blvd. @ SR-7, Zone 3	1,803 (24%)	5.2 mins	1,505 (25%)	5.3 mins
University Drive, North of Griffin Rd., Zone 6	970 (13%)	8.8 mins	838 (14%)	8.5 mins
Sunrise Blvd. @ SR 7, Zone 2	321 (4%)	16.4 mins	240 (4%)	14.0 mins
Davie Blvd @ SR-7, Zone 4	271 (4%)	19.4 mins	175 (3%)	19.9 mins
Griffin Road @ SR-7, Zone 5	194 (3%)	15.5 mins	161 (3%)	14.3 mins

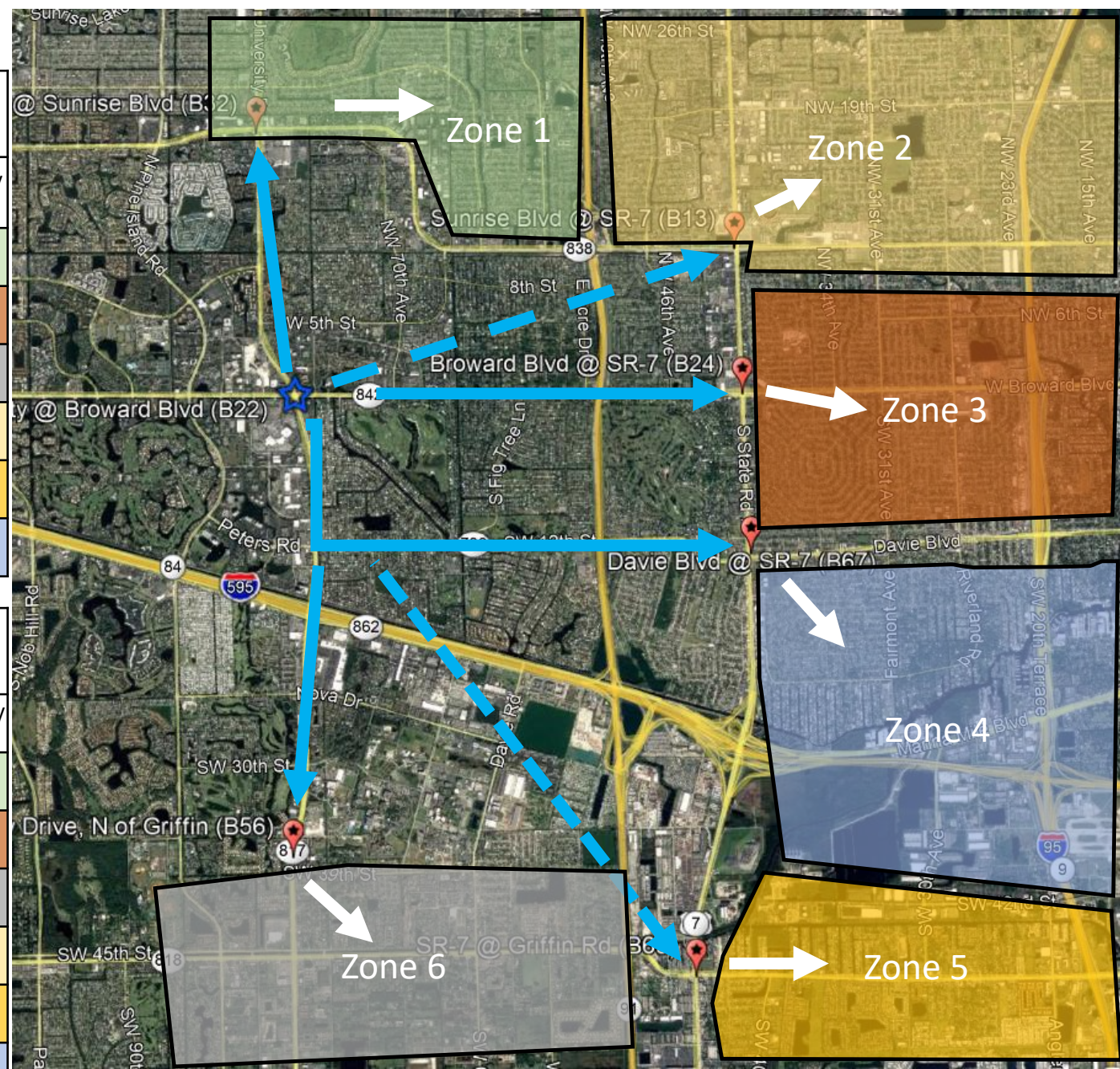
City of Plantation Inbound AM Peak: Weekend, 24 hours	April Weekends: Matches (%), Travel Time		June Weekends: Matches (%), Travel Time	
Starting intersection	Arrival: N. University @ Broward Blvd		Arrival: N. University @ Broward Blvd	
N. University Drive @ Sunrise Blvd., Zone 1	7,270 (52%)	3.9 mins	4,041 (43%)	4.1 mins
Broward Blvd. @ SR-7, Zone 3	3,324 (24%)	4.8 mins	2,619 (28%)	4.6 mins
University Drive, North of Griffin Rd., Zone 6	2,063 (15%)	8.6 mins	1,666 (18%)	8.0 mins
Sunrise Blvd. @ SR 7, Zone 2	512 (4%)	13.5 mins	404 (4%)	12.7 mins
Davie Blvd @ SR-7, Zone 4	387 (3%)	20.1 mins	308 (3%)	24.0 mins
Griffin Road @ SR-7, Zone 5	327 (2%)	14.0 mins	274 (3%)	13.3 mins



Results: OD & Travel Time

City of Plantation Outbound PM Peak: Weekdays 4:00 pm - 7:00 pm		April Weekdays: Matches (%), Travel Time		June Weekdays: Matches (%), Travel Time	
Arriving intersection		Leaving: N. University @ Broward Blvd		Leaving: N. University @ Broward Blvd	
N. University Drive @ Sunrise Blvd., Zone 1	3,385 (44%)	4.9 mins	3,005 (45%)	5.2 mins	
Broward Blvd. @ SR-7, Zone 3	2,448 (32%)	5.3 mins	2,057 (31%)	5.1 mins	
University Drive, North of Griffin Rd., Zone 6	1,209 (16%)	13.3 mins	1,012 (15%)	11.7 mins	
Sunrise Blvd. @ SR-7, Zone 2	301 (4%)	15.8 mins	231 (3%)	16.2 mins	
Griffin Road @ SR-7, Zone 5	226 (3%)	19.5 mins	170 (3%)	17.9 mins	
Davie Blvd @ SR-7, Zone 4	181 (2%)	30.4 mins	174 (3%)	29.5 mins	

City of Plantation Outbound PM Peak: Weekend, 24 hours		April Weekends: Matches (%), Travel Time		June Weekends: Matches (%), Travel Time	
Arriving intersection		Leaving: N. University @ Broward Blvd		Leaving: N. University @ Broward Blvd	
N. University Drive @ Sunrise Blvd., Zone 1	5,921 (49%)	3.4 mins	3,258 (39%)	3.4 mins	
Broward Blvd. @ SR-7, Zone 3	3,186 (26%)	4.7 mins	2,604 (31%)	4.7 mins	
University Drive, North of Griffin Rd., Zone 6	1,937 (16%)	9.3 mins	1,563 (19%)	8.5 mins	
Sunrise Blvd. @ SR-7, Zone 2	462 (4%)	12.8 mins	379 (5%)	12.0 mins	
Griffin Road @ SR-7, Zone 5	249 (2%)	15.2 mins	222 (3%)	13.8 mins	
Davie Blvd @ SR-7, Zone 4	301 (2%)	33.1 mins	258 (3%)	20.2 mins	



Conclusions:

- ❑ Operations group can realize investments previously made in ITS technology
- ❑ Case studies shows unique needs have arisen due to deployments
- ❑ Lessens reliance on Planning Group
- ❑ Continued use of this technology and versions 2.0
- ❑ Happy Agencies: Palm Beach County & City of Plantation

Questions ?

Thank you.

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