MAY 11TH 2021

STATEWIDE NON-MOTORIZED TRAFFIC MONITORING (NMTM) PROGRAM

Webinar #3: Non-Motorized Data Application Case Studies

HOUSEKEEPING

- Attendees are automatically muted throughout the webinar.
- Click the ? To open the panel box and submit a question.
- Answers to questions will be addressed by the panelists either verbally or in the question box towards the end of the session.
- Webinars are being recorded and will be available with other materials on the Non-Motorized Traffic Monitoring Program website.
- Please complete the follow-up survey that will be sent via email at the conclusion of this webinar.

- AICP CM credits offered for Planners that attend the session
- You must attend the entire session to be eligible for the credit hours
- All attendees will receive certificates via email soon after the webinar

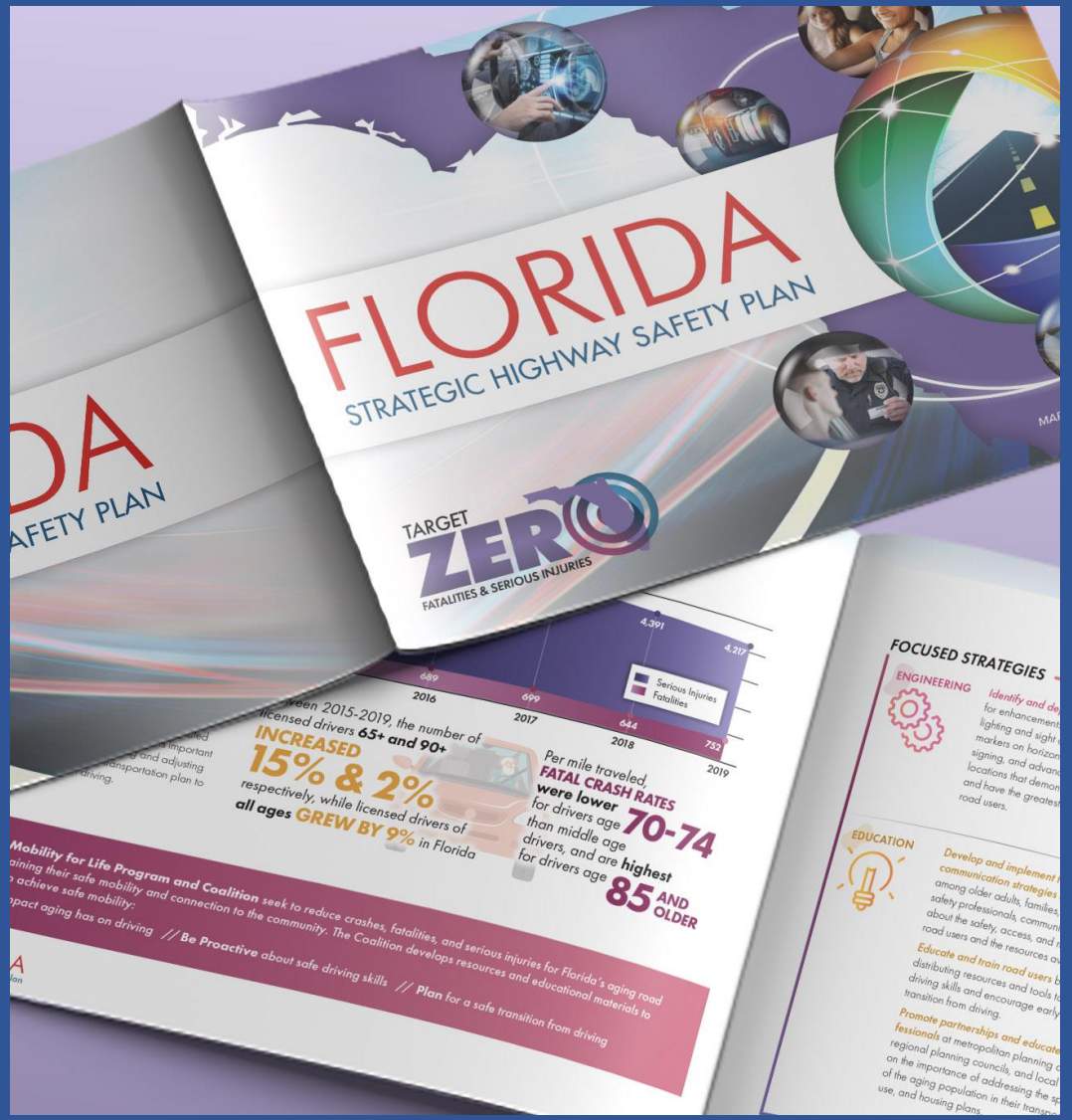
GUEST HOST

Brenda Young, PE

FDOT State Safety Engineer

WHY IS NON-MOTORIZED DATA IMPORTANT TO FDOT'S SAFETY OFFICE?

- ✓ **Quantify Exposure**
- ✓ **Maximize Safety Resources**
- ✓ **Monitor Safety Performance**



TARGET ZERO
FATALITIES & SERIOUS INJURIES

AGENDA

- FDOT Transit Non-Motorized Data Collection Project
- North Carolina Non-Motorized Volume Data Program

FDOT Statewide Non-Motorized Traffic Monitoring Program

2021 STATEWIDE ANNUAL MEETING

WEBINAR SERIES

TUESDAY
MAY 11
11:00AM - 12:15PM (Eastern Time Zone)

WEBINAR #3:
Non-Motorized Data Application Case Studies
Click HERE to attend

11:00 AM **LIVE WELCOME FROM FDOT SAFETY**
Brenda Young, Transportation Safety Engineer

11:05 AM **FDOT TRANSIT / NON-MOTORIZED STUDY RESULTS AND INSIGHTS**
Chris Wiglesworth, FDOT Transit Planner,
Lisa Maack, MARLIN Engineering,
Brian Freeman, Jim Mann, Indian River MPO

11:35 AM **NORTH CAROLINA STATEWIDE BICYCLE & PEDESTRIAN COUNT PROGRAM**
Sarah Searcy, Institute for Transportation Research and Education

12:05 AM **QUESTIONS**

12:15 PM **CLOSING VIDEO FROM FDOT SAFETY**
Trenda McPherson, Bicycle and Pedestrian Safety Program Manager,
Brenda Young, Transportation Safety Engineer,
Rupert Giroux, Safety Data Coordinator

This webinar will provide Florida with non-motorized data application case studies. A common question regarding non-motorized data collection is how planners, engineers, and policy makers can actually apply non-motorized data in their research? Presenters from FDOT, Indian River County MPO, and North Carolina's Statewide Bicycle & Pedestrian Count Program will share how traffic data is providing their teams with new data sets that will assist in developing safer and more convenient non-motorized facilities in the state.

WEBINAR PARTNERS

ITRE Institute for Transportation Research and Education

FDOT Traffic Monitoring Division

QUESTIONS? Please e-mail Eric.Katz@dot.state.fl.us or Joey.Gordon@dot.state.fl.us

TRANSIT NON-MOTORIZED DATA COLLECTION PROJECT

Chris Wiglesworth
Transit Planner, FDOT Public Transit Office

Lisa Maack AICP
Planning Manager, Marlin Engineering Inc.

Brian Freeman AICP
MPO Staff Director, Indian River County MPO

Jim Mann, MPA
Senior Planner, Indian River County MPO

FDOT

TRANSIT PLANNING & OPERATIONS

NON-MOTORIZED

TRAFFIC MONITORING

Chris Wiglesworth, FDOT

FDOT Public Transit Office

OFFICE MISSION: To identify, support, advance and manage cost effective, efficient and safe transportation systems and alternatives to maximize the passenger carrying capacity of surface transportation facilities.

The Project we are presenting today came about through asking:

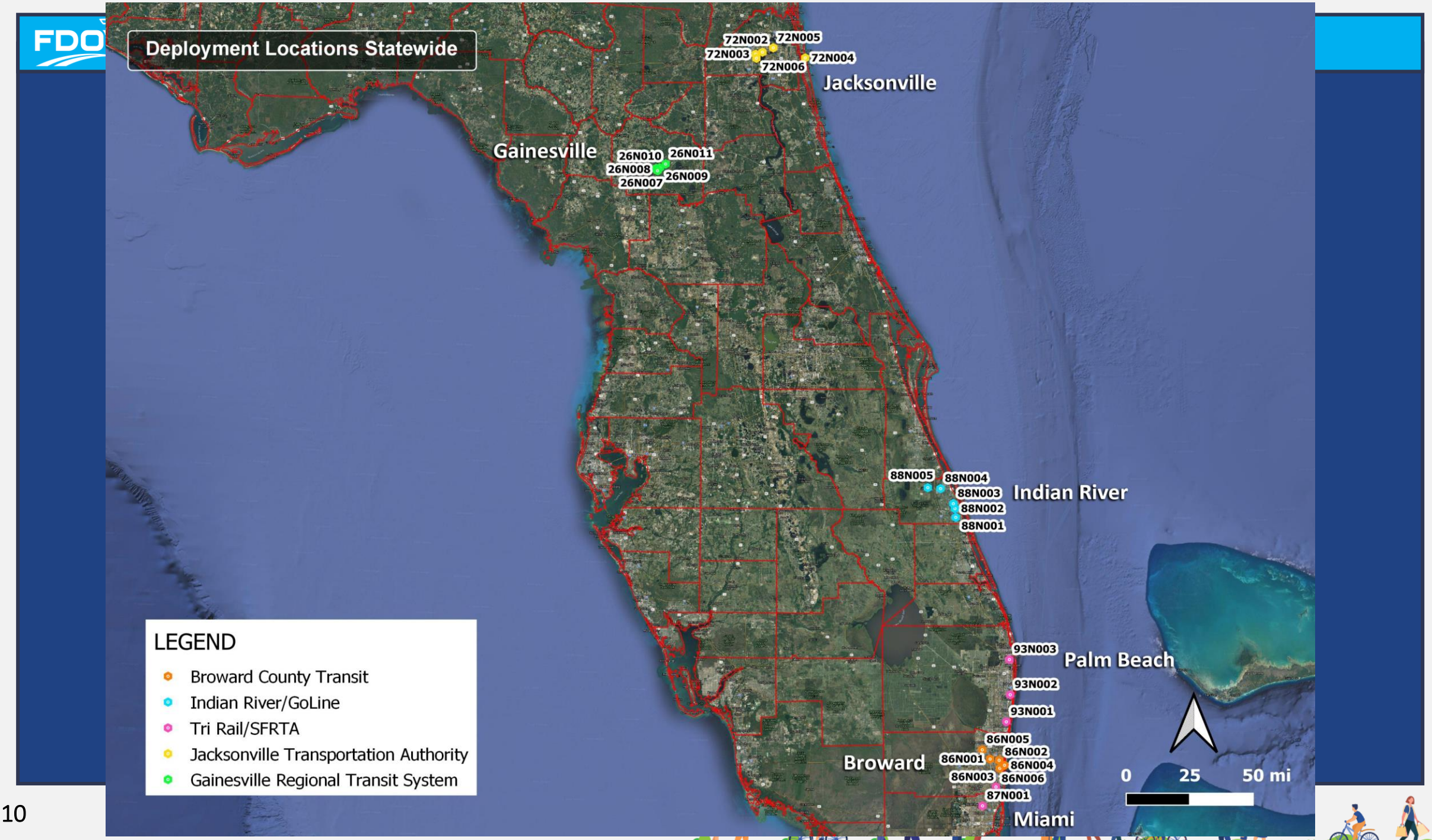
How can we further the FDOT Public Transit Office's objectives to provide **innovative tools** to Florida's transit agencies to **support** effective transit planning and operations?

TRANSIT & NON-MOTORIZED DATA

GOAL of PROJECT: Develop methods and technologies to integrate transit and transit passenger activity data into the evolving statewide non-motorized traffic data program

OBJECTIVES:

- Engage our partners: Agency (5) Coordination
- Research and Best Practices on New and Emerging Data Collection Technologies
- Discovery Process/Recommendations for Further Study
- Identify Opportunities for Data Utilization -Transit Stop Design, Safety, Security, Accessibility, Corridor Studies
- Data visualization
- Public facing website for planners and engineers to utilize in corridor and safety studies


Deployment Locations Statewide
72N002
72N005
72N003
72N004
72N006
Jacksonville
Gainesville
26N010
26N011
26N008
26N009
26N007
88N005
88N004
88N003
Indian River
88N002
88N001
93N003
Palm Beach
93N002
93N001
86N005
86N002
86N001
86N004
Broward
86N003
86N006
87N001
Miami
0
25
50 mi
LEGEND
Broward County Transit
Indian River/GoLine
Tri Rail/SFRTA
Jacksonville Transportation Authority
Gainesville Regional Transit System

FDOT

TRANSIT PLANNING & OPERATIONS

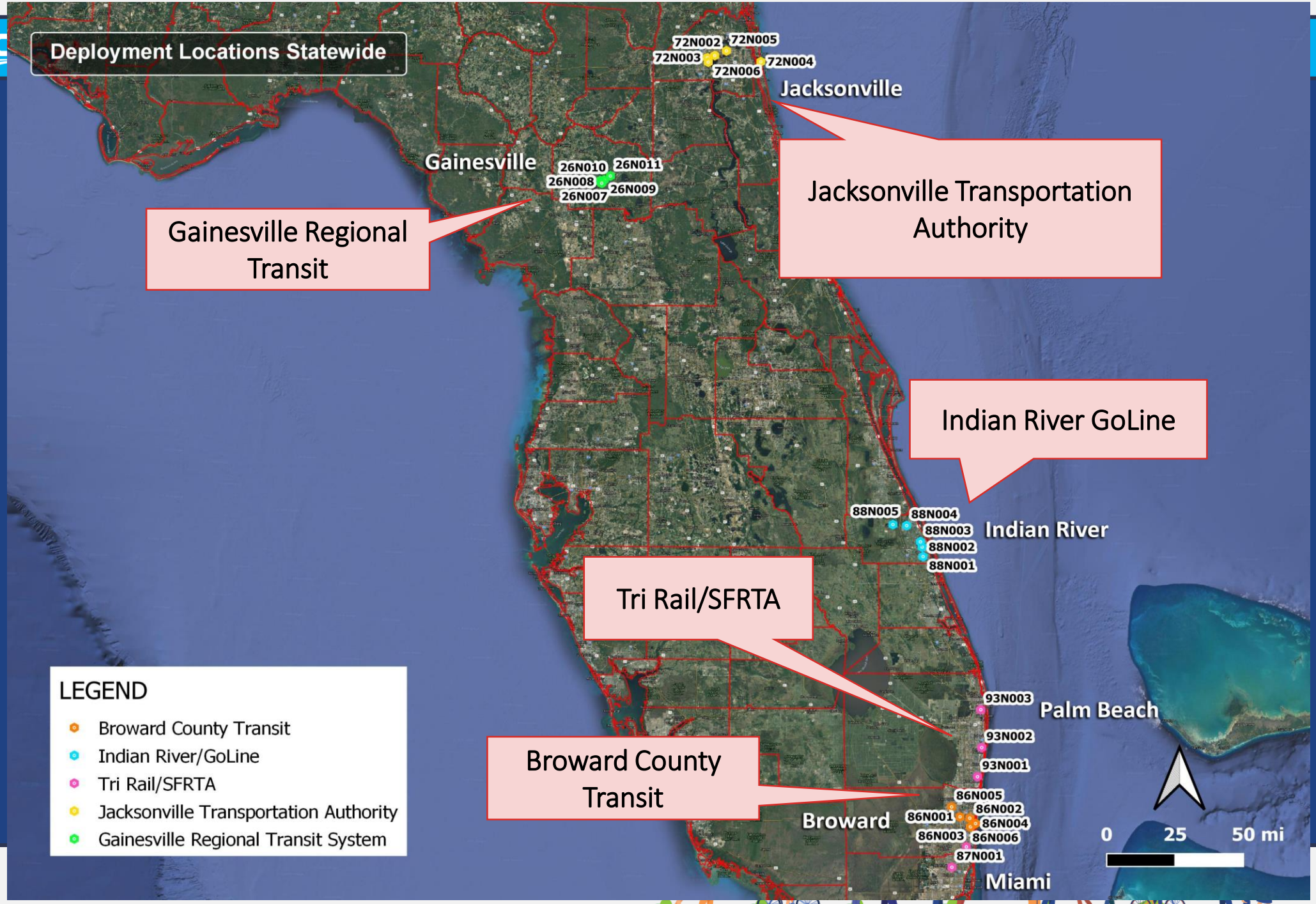
NON-MOTORIZED

TRAFFIC MONITORING

Lisa Maack, Marlin Engineering Inc.

AGENCY COORDINATION AND SITE SELECTION

- Developed a transit agency screening tool to prioritize transit agencies to contact throughout the state
- Reached out to potential transit agency partners to propose partnership opportunity
- Developed potential bus stop locations for data collection through previously identified locations, GIS analysis, and partner collaboration noting equipment limitations
- Conducted virtual site visits at proposed sites
- Conducted on-site visits


Deployment Locations Statewide
72N002
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72N003
72N004
72N006
Jacksonville
Gainesville
26N010
26N011
26N008
26N009
26N007
Jacksonville Transportation Authority
Gainesville Regional Transit
Indian River GoLine
88N005
88N004
88N003
Indian River
88N002
88N001
Tri Rail/SFRTA
93N003
Palm Beach
93N002
93N001
Broward County Transit
86N005
86N002
Broward
86N001
86N004
86N003
86N006
87N001
Miami
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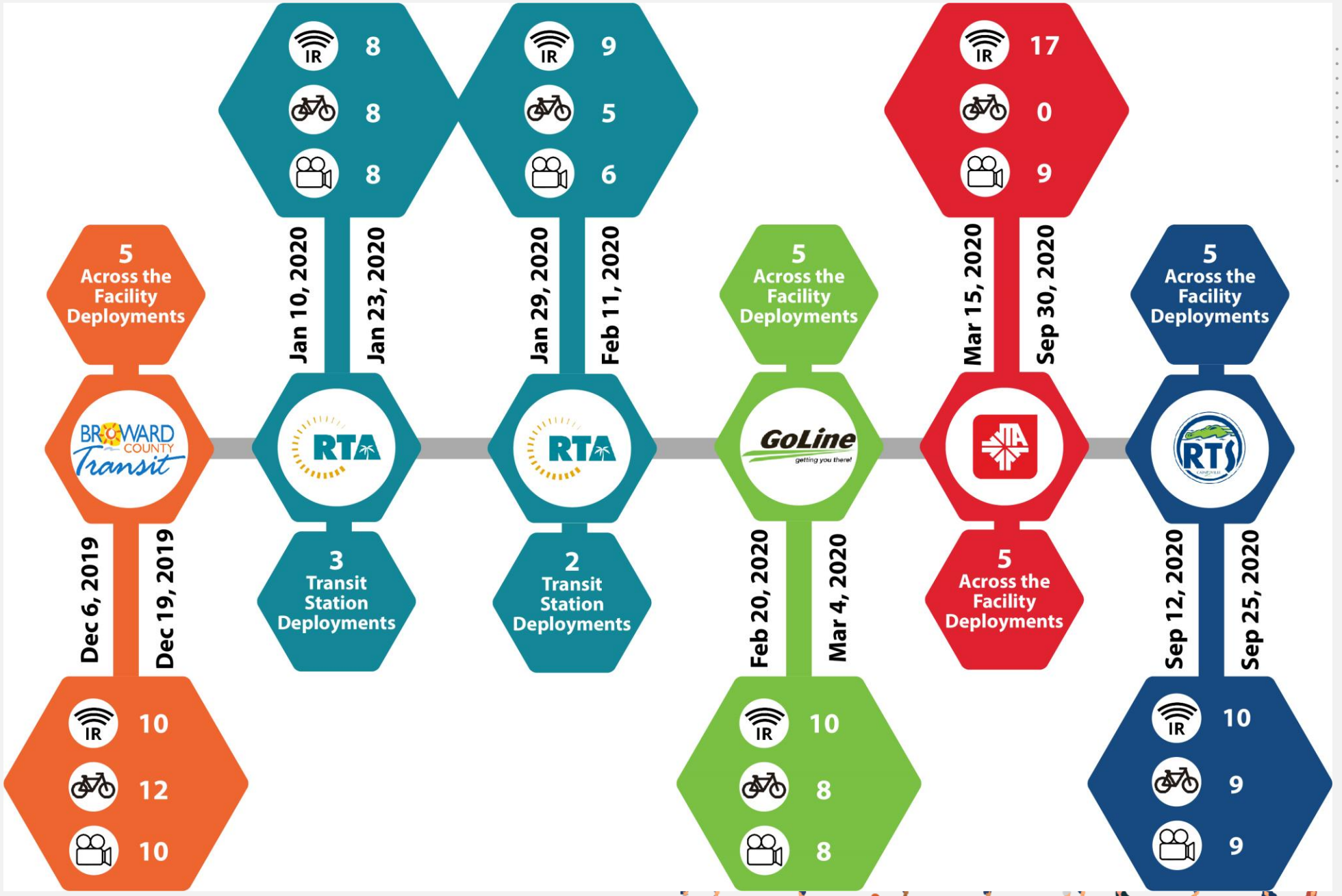
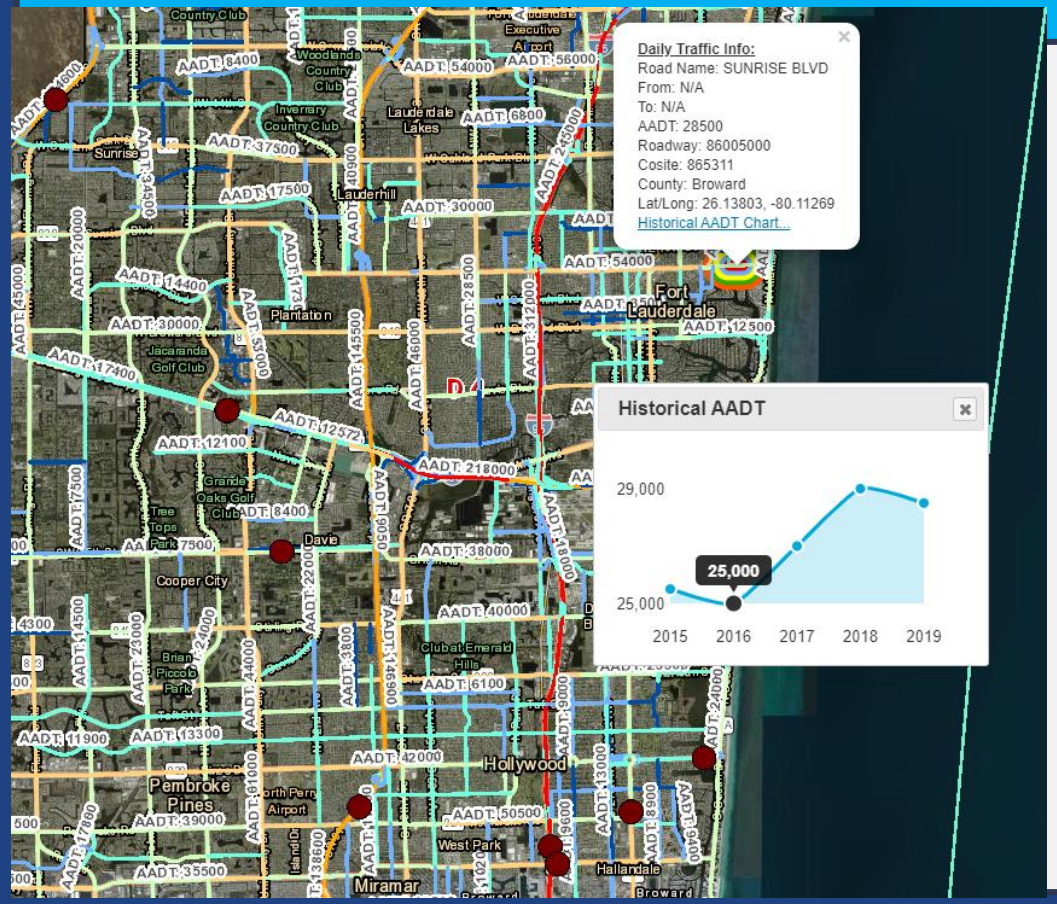
25
50 mi
LEGEND
Broward County Transit
Indian River/GoLine
Tri Rail/SFRTA
Jacksonville Transportation Authority
Gainesville Regional Transit System

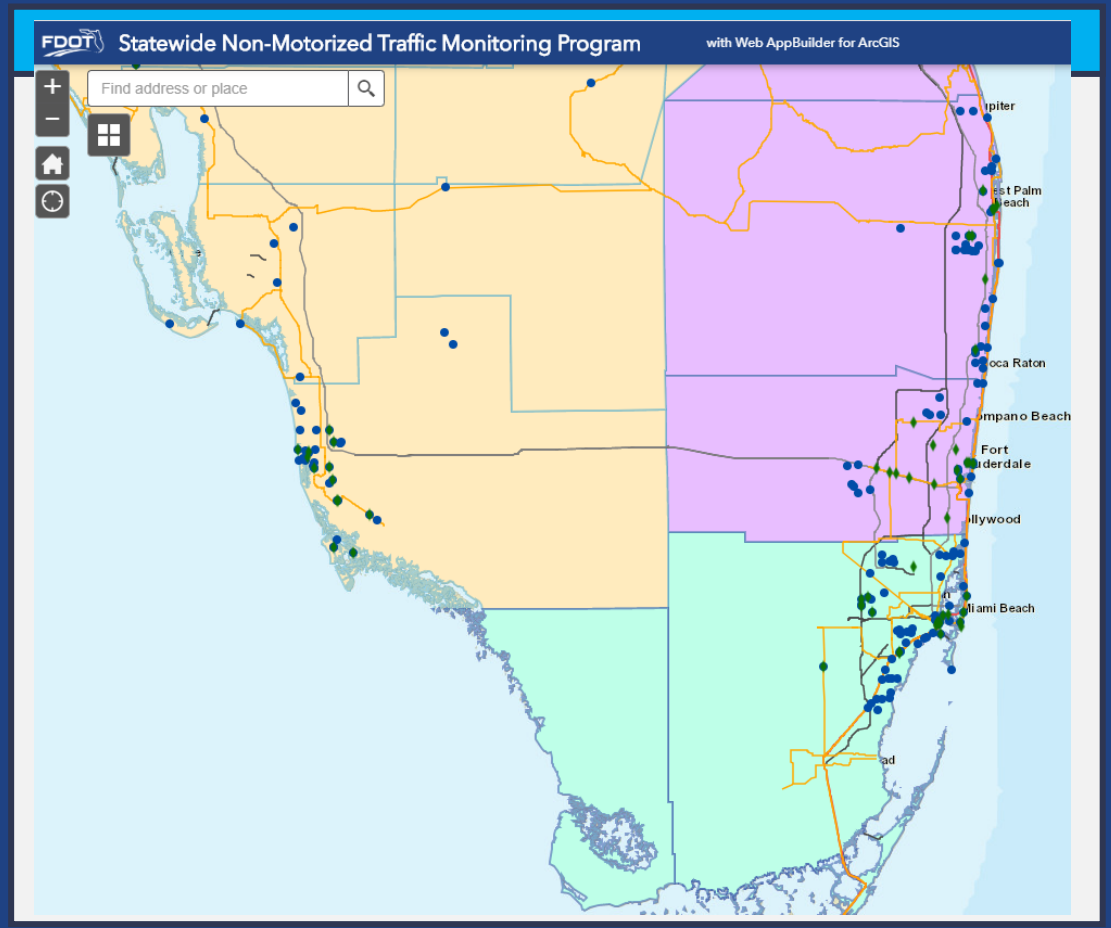

5
Across the Facility Deployments
Broward County Transit
Dec 6, 2019
Dec 19, 2019
IR 10
12
10
Jan 10, 2020
Jan 23, 2020
IR 8
8
8
RTA
3
Transit Station Deployments
Jan 29, 2020
Feb 11, 2020
IR 9
5
6
RTA
2
Transit Station Deployments
5
Across the Facility Deployments
GoLine
getting you there!
Feb 20, 2020
Mar 4, 2020
IR 10
8
8
Mar 15, 2020
Sep 30, 2020
IR 17
0
9
5
Across the Facility Deployments
5
Across the Facility Deployments
RTS
Sep 12, 2020
Sep 25, 2020
IR 10
9
9

FDOT TRAFFIC AND NON-MOTORIZED TRAFFIC ON-LINE

FDOT Traffic Online Motorized Traffic



FDOT Non-Motorized Traffic Database



INFORMATION DISAGGREGATION PYRAMID

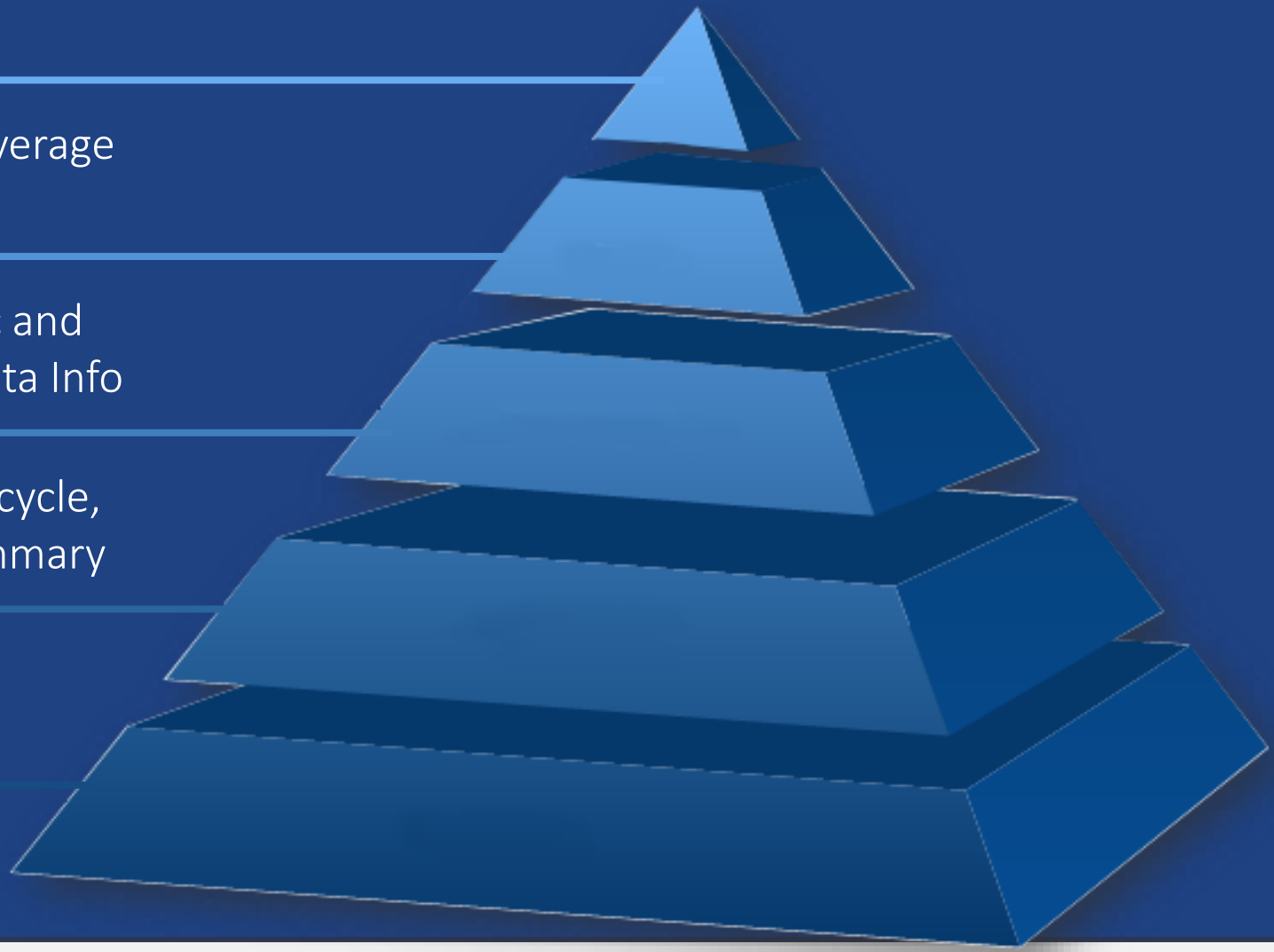
LEVEL 1: FDOT Traffic Online Average Non-motorized Daily Traffic

LEVEL 2: Non-motorized Traffic and Transit Monitoring Program Data Info

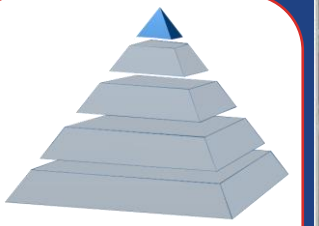
LEVEL 3: Transit, Pedestrian, Bicycle, Transit & Mid-block Count Summary

LEVEL 4: Combined Data by Technology Across Facility

LEVEL 5: Data Macro and Raw Data and Videos

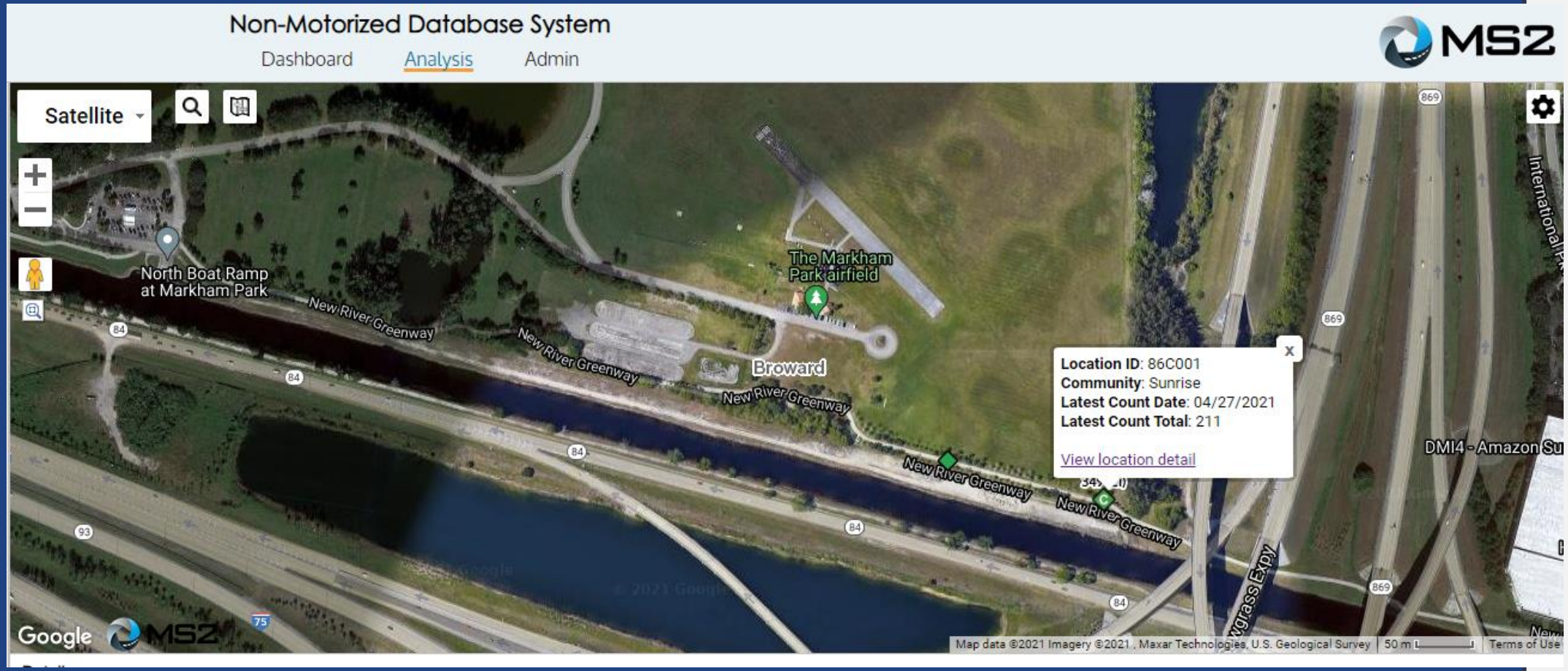


NMTM PROGRAM DATA INFO

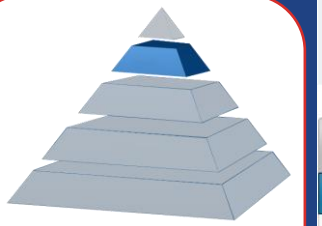


LEVEL 1

FDOT Traffic Online Average Non-motorized Daily Traffic

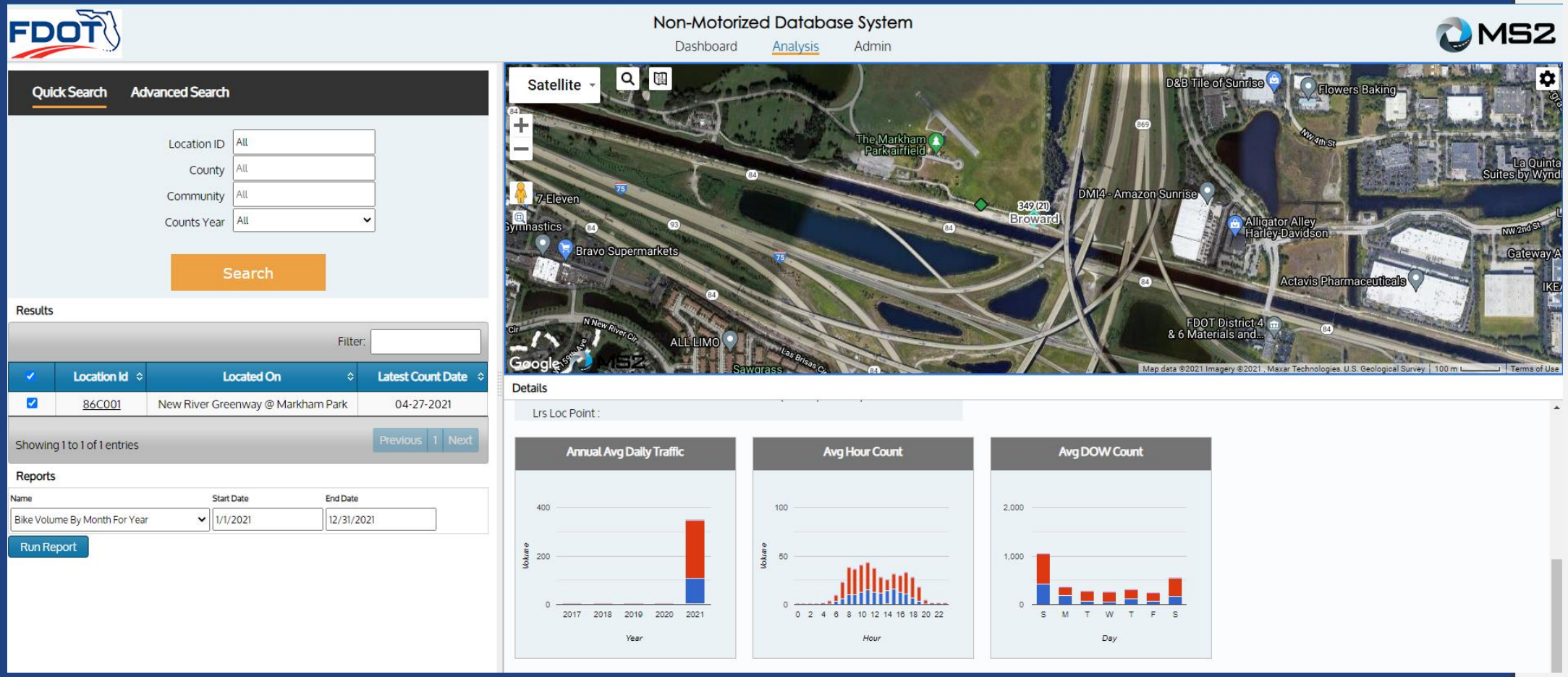


NMTM PROGRAM DATA INFO



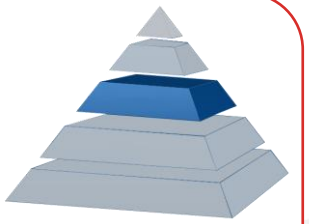
LEVEL 2

Non-motorized Traffic Monitoring Program Data Info

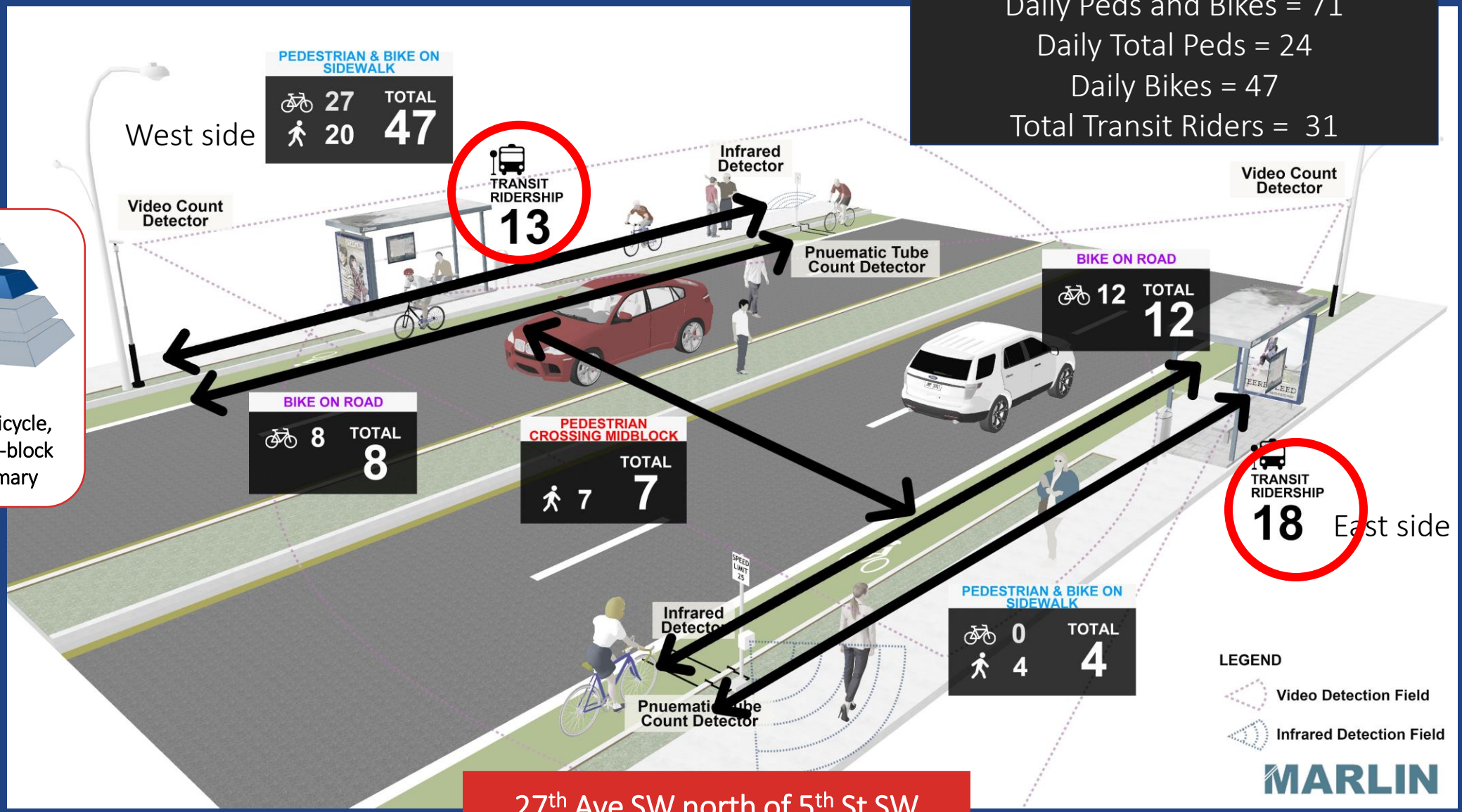


GRAPHIC DATA SUMMARY

Daily Peds and Bikes = 71
Daily Total Peds = 24
Daily Bikes = 47
Total Transit Riders = 31



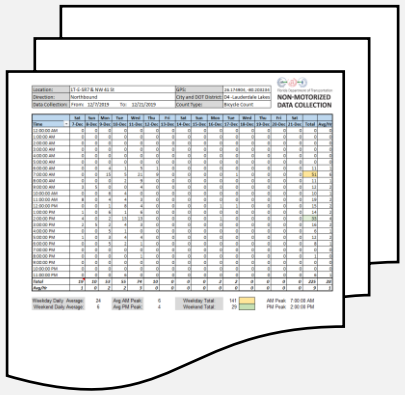
LEVEL 3
Pedestrian, Bicycle, Transit & Mid-block Count Summary



27th Ave SW north of 5th St SW

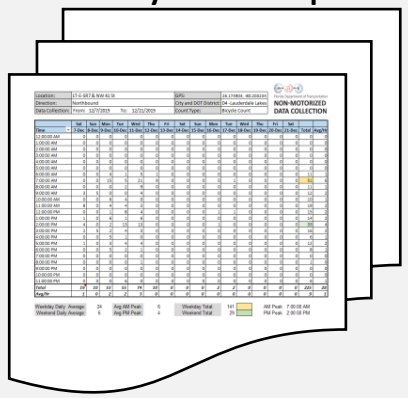
Across the Facility = Counts on Each Side of the Road

14 Day Infrared Data Report



- Ped/Bike Volume on Sidewalks
- Average Weekday Volume
- Average Weekend Volume
- AM / PM Peak Hours
- Avg Peak Hour Volumes

14 Day Tube Count Bicycle Data Report

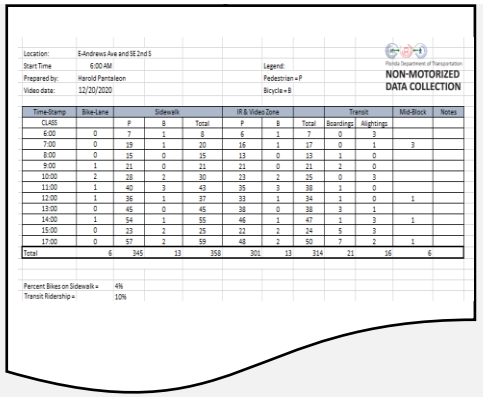


- Bicycle Volume on Bike Lanes, Trails and Shared Paths
- Weekday BNMDT
- Weekend BNMDT
- AM / PM Peak Hours
- Avg Peak Hour Volumes

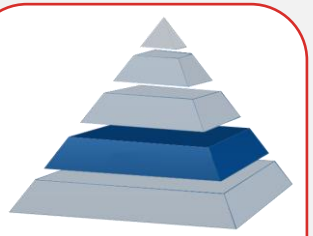
24 Hr Video Processing Report

- Bikes on Sidewalks %
- Mid-Block Crossing Volumes
- Transit Utilization Factor
- Bi-Directional Ped/Bikes on Sidewalks
- Data Validation

Data QC and Video Based Manual Counts



- Perform Manual Count to QC Each Dataset
- Determine level of Accuracy per Device
- Generate Calibration Factors per Device



LEVEL 4
Combined Data by Technology Across Facility

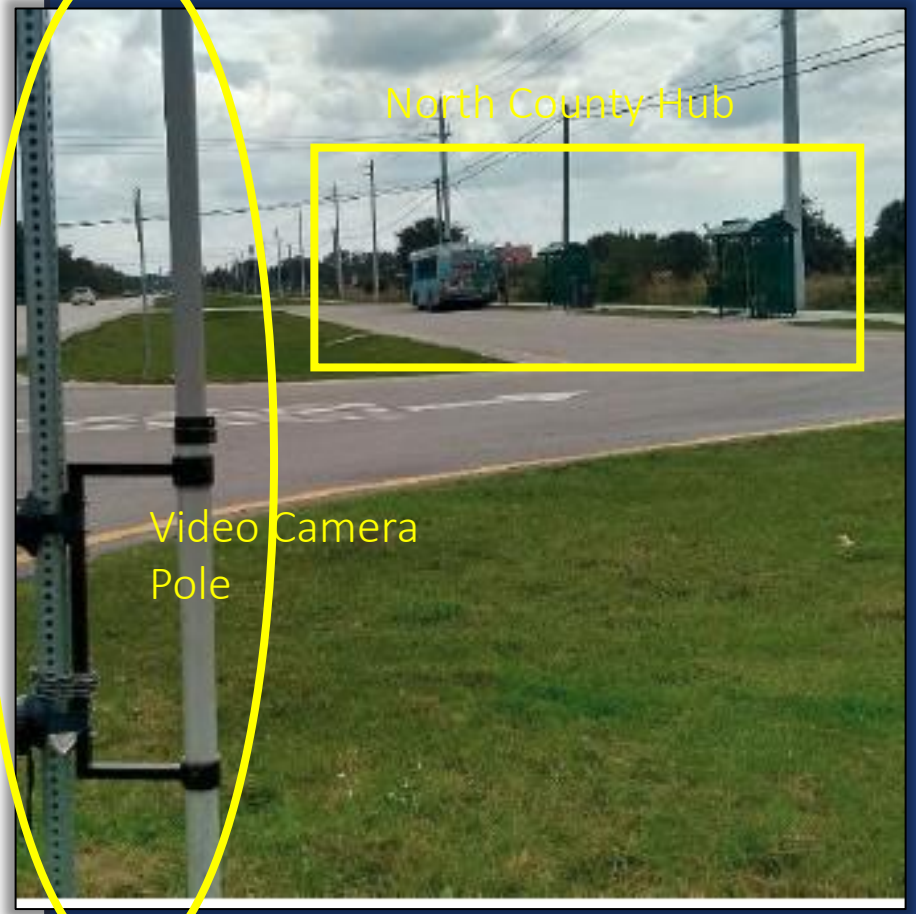
EQUIPMENT DEPLOYMENT – BIKE TUBES

BICYCLE TUBE COUNTERS USED TO COUNT BICYCLE ACTIVITY
IN BICYCLE LANES AND ON BIKE PATHS

EQUIPMENT DEPLOYMENT – INFRARED DEVICES

INFRARED DEVICE USED TO COUNT ACTIVITY ON SIDEWALK

EQUIPMENT DEPLOYMENT – VIDEO CAMERAS



VIDEO CAMERA ON TELESCOPING POLE
TO RECORD ALL ACTIVITY

Use of Video in the Study Findings

Safety Concerns and Ped and Bike Behavior

BCT: Sunrise Blvd and NE 25th Ave

- 153 Mid-Block crossings in 12 hours
- Mid-Block Crossing Volume and Factor
- Visualization of the Data

Identify Transit Users

BCT: University Dr at Southgate Blvd

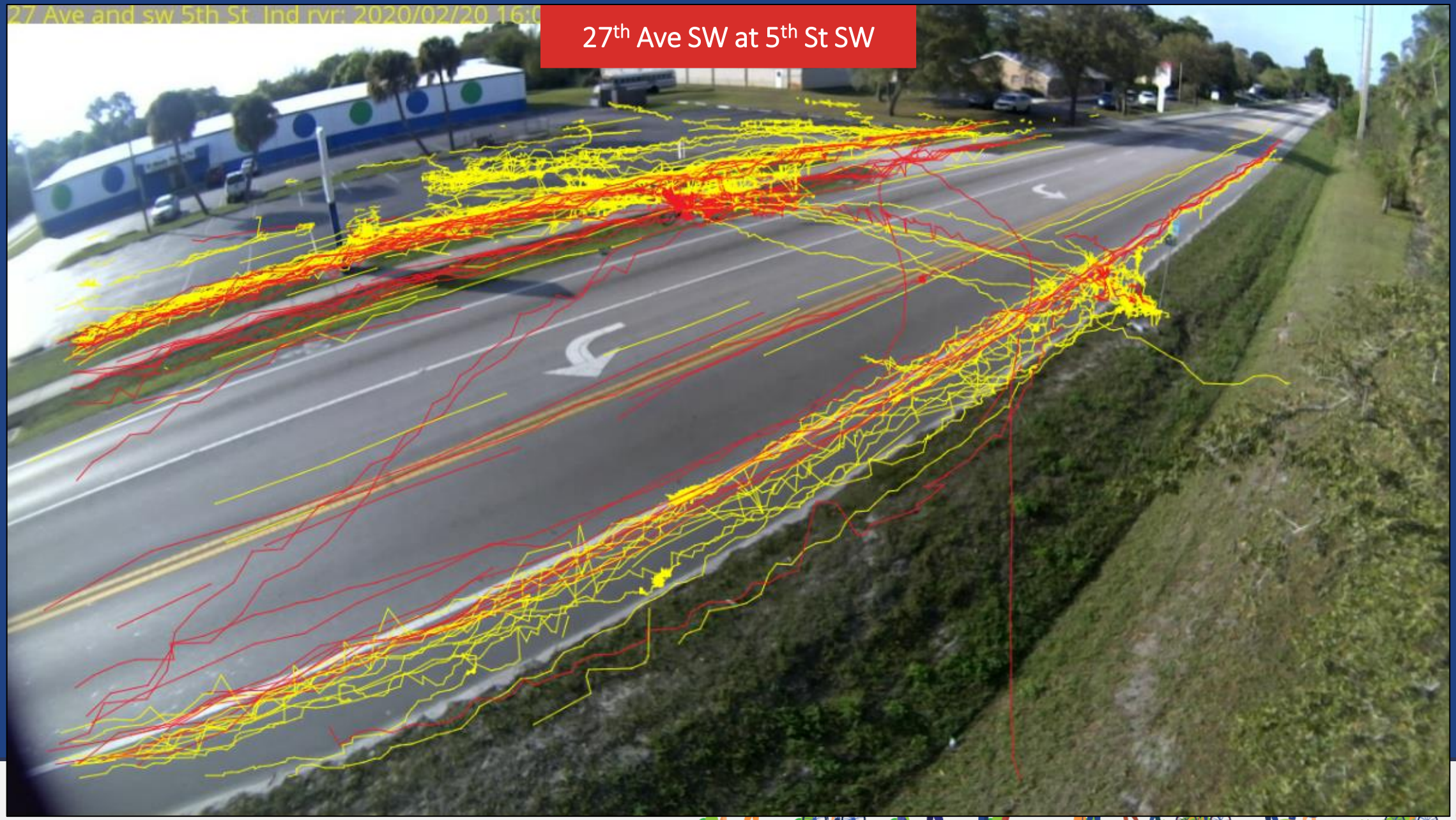
- Transit utilization
- Bicyclist using Transit
- Count Boarding and Alightings
- Identify Bus Arrival and Dwell Time

Validate Data

Boynton Beach Tri Rail Station Entrance

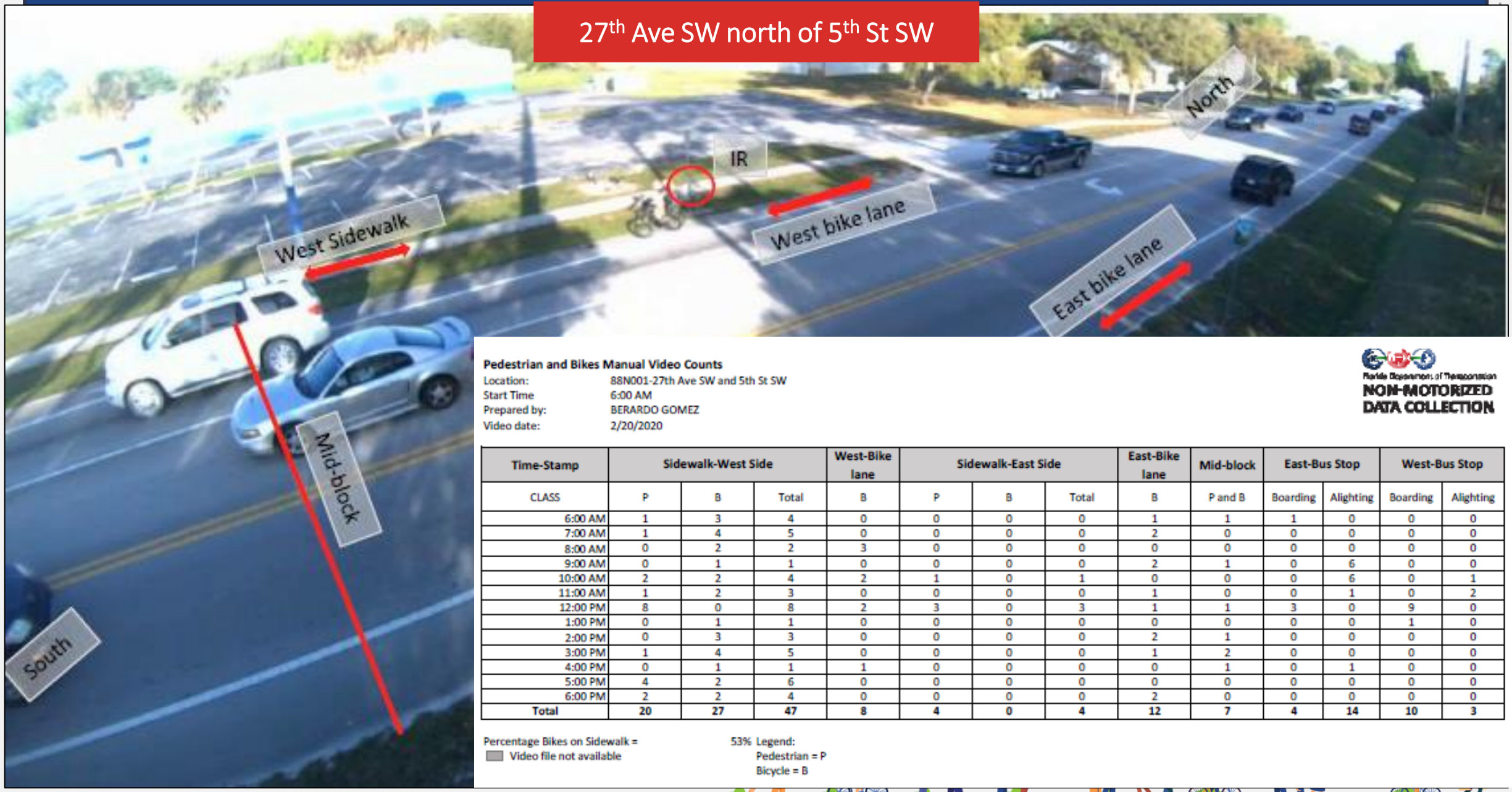
- Validate Data from other Devices
- Calculate Bi-Directional Counts
- Calculate Bikes on Sidewalk Percentages

VIDEO DATA



MANUAL COUNTS

27th Ave SW north of 5th St SW



Pedestrian and Bikes Manual Video Counts

Location: 88N001-27th Ave SW and 5th St SW
Start Time 6:00 AM
Prepared by: BERARDO GOMEZ
Video date: 2/20/2020

Florida Department of Transportation
NON-MOTORIZED DATA COLLECTION

Time-Stamp	Sidewalk-West Side			West-Bike lane	Sidewalk-East Side			East-Bike lane	Mid-block	East-Bus Stop		West-Bus Stop	
CLASS	P	B	Total	B	P	B	Total	B	P and B	Boarding	Alighting	Boarding	Alighting
6:00 AM	1	3	4	0	0	0	0	1	1	1	0	0	0
7:00 AM	1	4	5	0	0	0	0	2	0	0	0	0	0
8:00 AM	0	2	2	3	0	0	0	0	0	0	0	0	0
9:00 AM	0	1	1	0	0	0	0	2	1	0	6	0	0
10:00 AM	2	2	4	2	1	0	1	0	0	0	6	0	1
11:00 AM	1	2	3	0	0	0	0	1	0	0	1	0	2
12:00 PM	8	0	8	2	3	0	3	1	1	3	0	9	0
1:00 PM	0	1	1	0	0	0	0	0	0	0	0	1	0
2:00 PM	0	3	3	0	0	0	0	2	1	0	0	0	0
3:00 PM	1	4	5	0	0	0	0	1	2	0	0	0	0
4:00 PM	0	1	1	1	0	0	0	0	1	0	1	0	0
5:00 PM	4	2	6	0	0	0	0	0	0	0	0	0	0
6:00 PM	2	2	4	0	0	0	0	2	0	0	0	0	0
Total	**20**	**27**	**47**	**8**	**4**	**0**	**4**	**12**	**7**	**4**	**14**	**10**	**3**

Percentage Bikes on Sidewalk = 53%
Video file not available

Legend:
Pedestrian = P
Bicycle = B

AGENCY FEEDBACK – HOW CAN TRANSIT AGENCIES USE THE DATA?

Video is important to capture rider behavior and numbers

Data can provide justification for safety messaging to prevent mid-block crossings

Interest in a public facing database of non-motorized data to inform decision-making

Kiss and ride behavior on video noted for future upgrades

Data to inform agency's wayfinding program

Video to be shown in future meetings to demonstrate activity and need for additional shelters

Early am video highlights need for lighting

FDOT

TRANSIT PLANNING & OPERATIONS

NON-MOTORIZED

TRAFFIC MONITORING

Brian Freeman and Jim Mann, Indian River County MPO

INDIAN RIVER COUNT LOCATIONS - JUSTIFICATIONS

Stop Name	Route(s)	Boardings & Alightings (Daily)	EJ Location	Bus Shelters	Justification	Preferred Study Location
Vero Beach						
Aviation Bl & 34th Av	2	22			This is the closest stop to the Vero Beach airport. Transit riders at this stop include Flight Safety students. Where are transit riders going to/coming from? Is this a good location for bus shelters?	*
Gifford						
45th St & 43rd Av	14	38	*	*	There stops on both sides of 45th Street east of 43rd Avenue. On the south side, there is a bus shelter at the new Family Dollar. A shelter on the north side may also be needed.	
Sebastian						
North County Hub	5, 9, 10 & 12	792		*	Significant transfer activity between routes; high school nearby; shopping center across street. While most transit boardings and alightings at this location are transfers, how many riders are walking to this location from the high school and nearby businesses? Also, mid-block crossings are a concern. This location is on the west side of CR 510 just south of CR 512. The hub was constructed in early 2018.	*
Fellsmere						
Sonrise Apartments (Willow St)	10	18	*	*	This stop is on the east side of Willow Street at the entrance to an apartment complex. Are riders primarily coming from the apartments or other nearby areas? Willow Street has a sidewalk on the east side.	
South County						
27th Av SW & 5th St SW	7	68			This is a busy stop in a low-density residential area and may be a candidate for bus shelters. Where are transit riders going to/coming from? According to APC data, most boardings occur on the west side of the street and most alightings occur on the east side of the street (i.e. most riders are connecting with other routes at the IG Center).	*

Deployment Locations for Indian River/GoLine

ADT(BP) = Average Daily Traffic (Bicycle and Pedestrian)

Willow St at Idaho Ave
ADT(BP) 139
Transit Ridership 9

88N005

88N004

North County Hub
ADT(BP) 128
Transit Ridership 792

Gifford Rd East of 43rd Ave
ADT(BP) 121
Transit Ridership 20

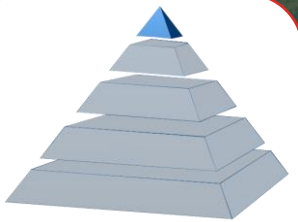
88N003

88N002

Airport Dr north of Aviation Blvd
ADT(BP) 43
Transit Ridership 7

88N001

27th Ave SW north of 5th St SW
ADT(BP) 71
Transit Ridership 31

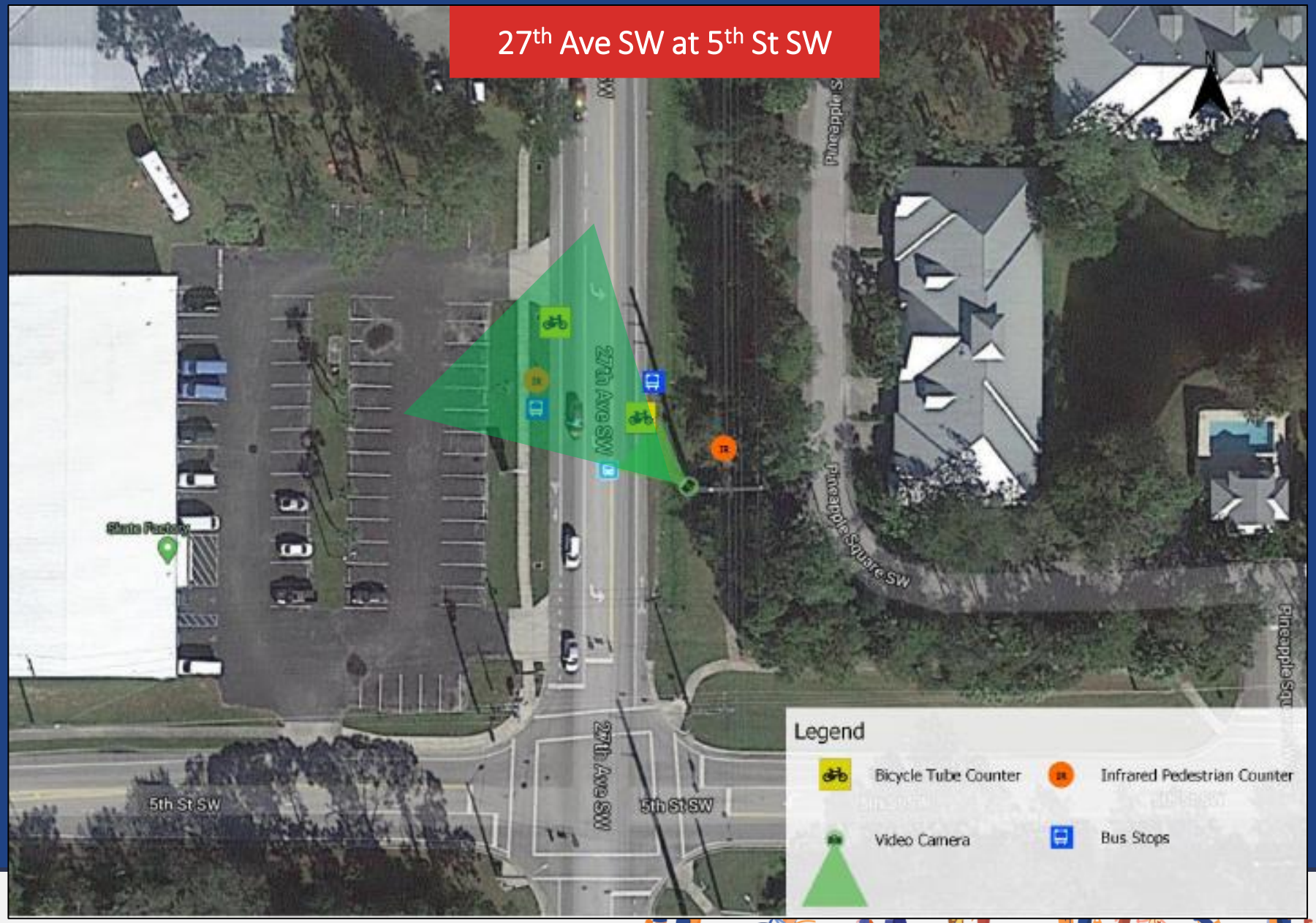


LEVEL 1
FDOT Traffic Online Average Non-motorized Daily Traffic

LEGEND
Deployment Locations

0 2.5 5 mi

INDIAN RIVER PACKAGE – DEPLOYMENT LOCATIONS & PHOTOS

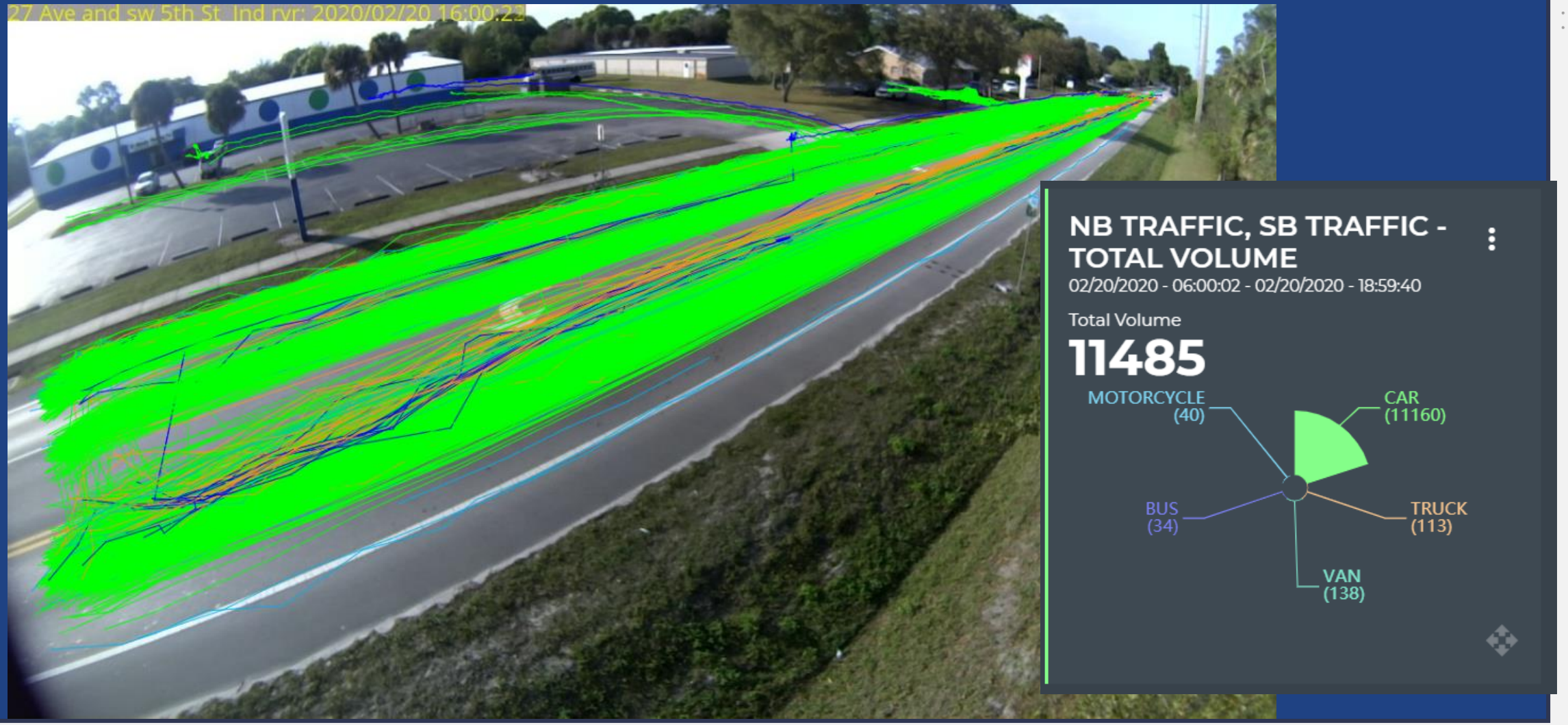


INDIAN RIVER PACKAGE - VIDEO SAMPLE

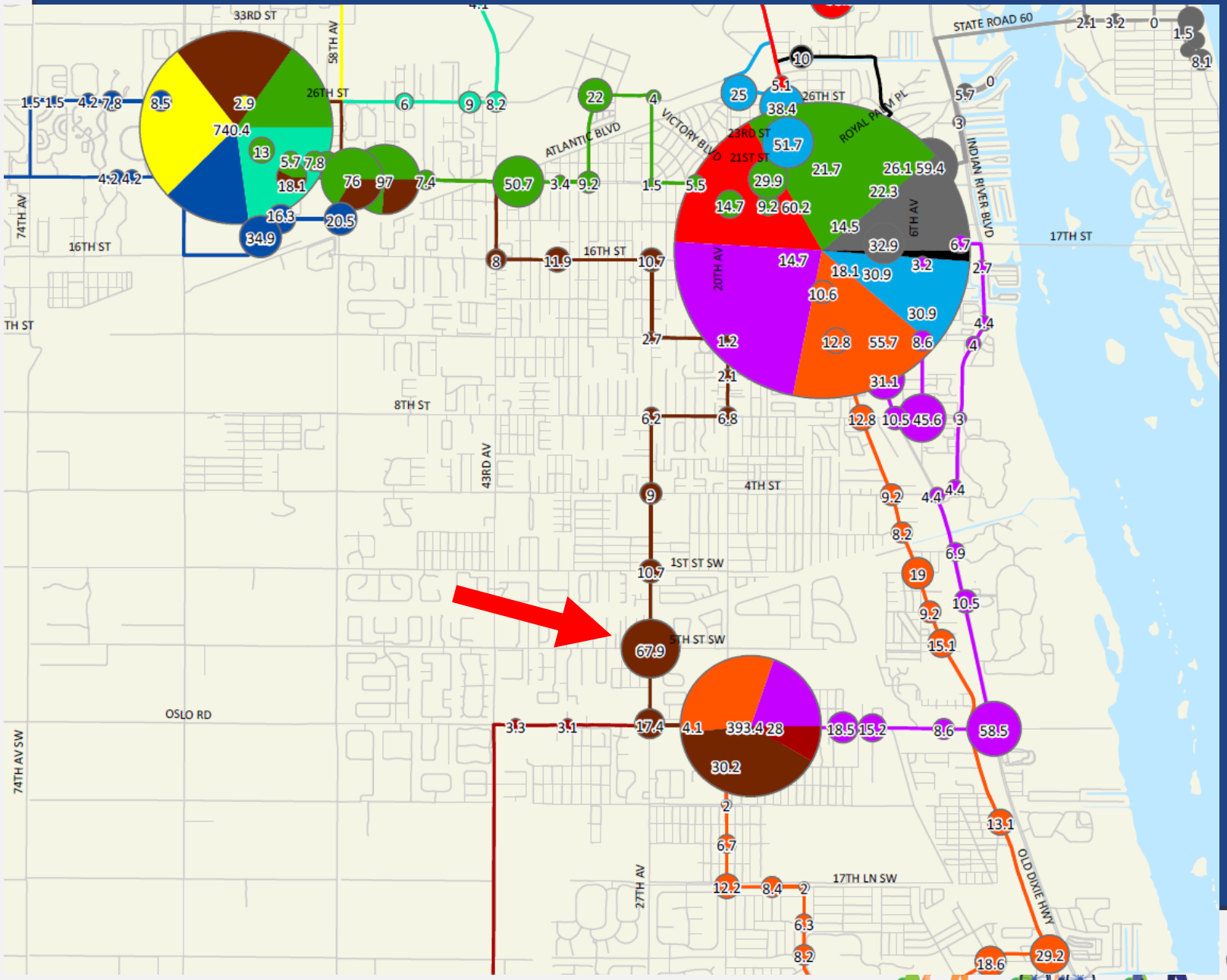
INDIAN RIVER PACKAGE - VIDEO DATA DETECTION REPORT SAMPLES

INDIAN RIVER PACKAGE - VIDEO DATA DETECTION

27th Ave SW at 5th St SW

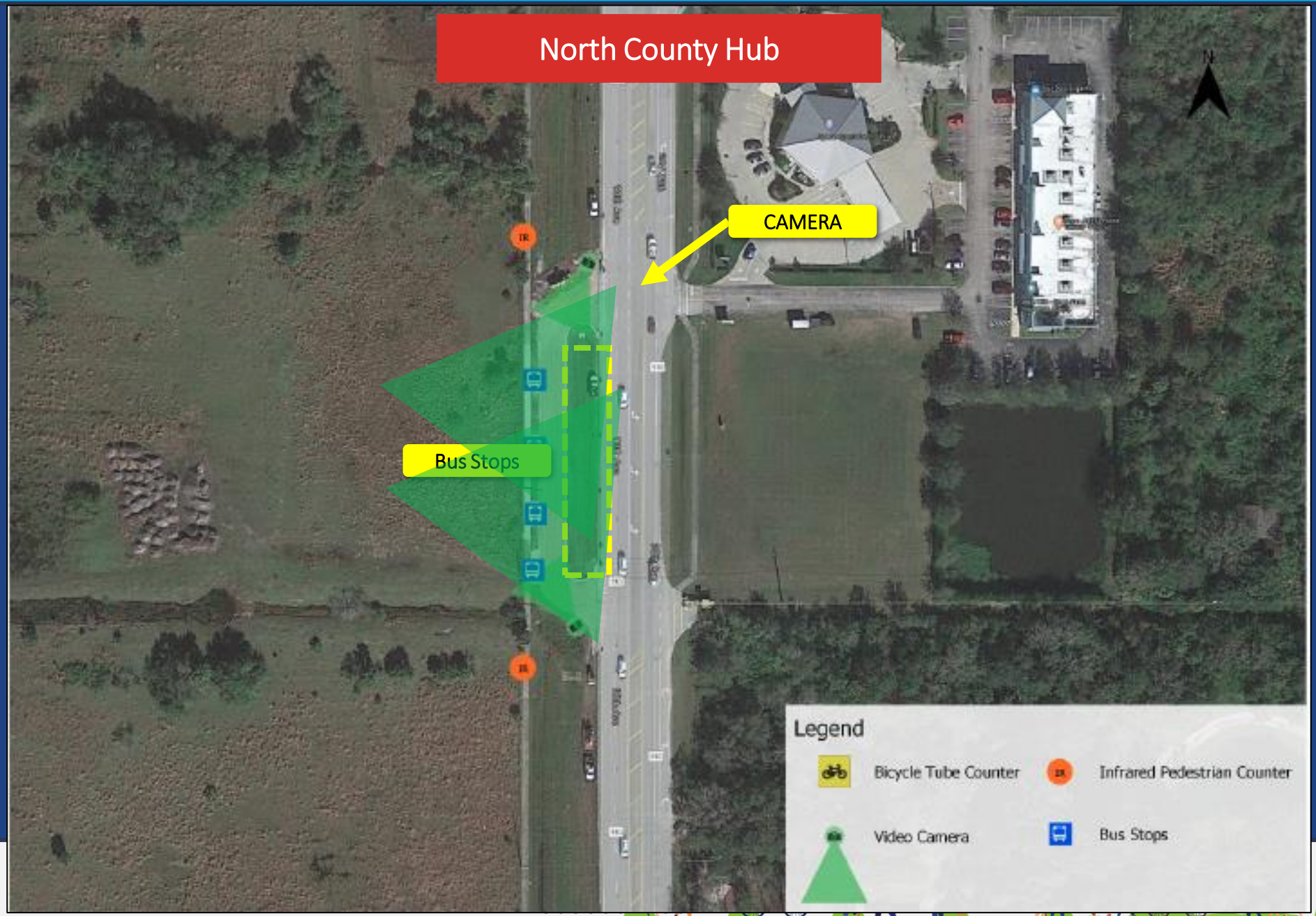


TRANSIT – APC DATA



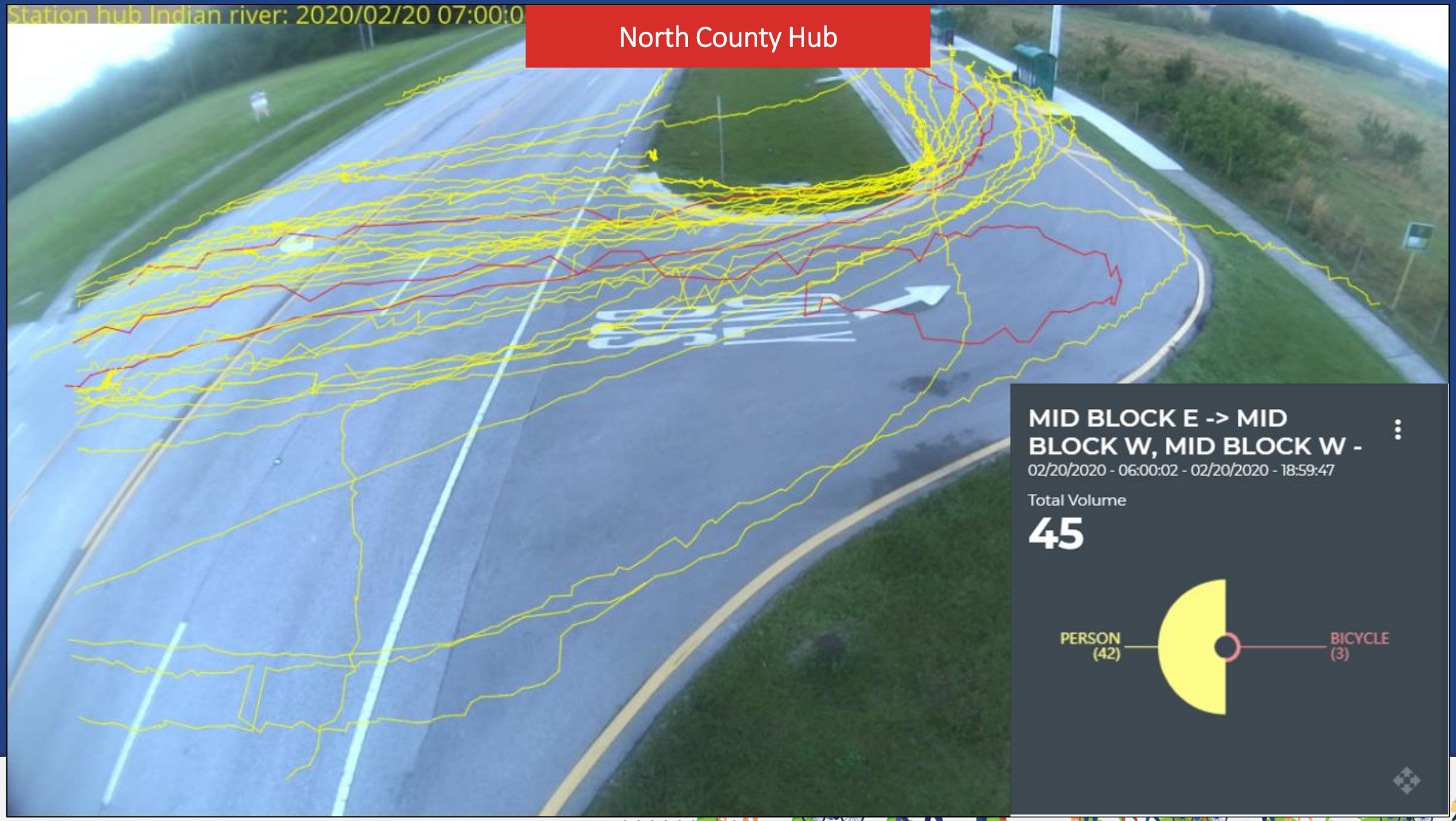
- Buses are equipped with Automatic Passenger Counters (APC's)
- Potential to see complete picture of transit passenger activity by using nonmotorized count data and APC data together

VIDEO SAMPLE

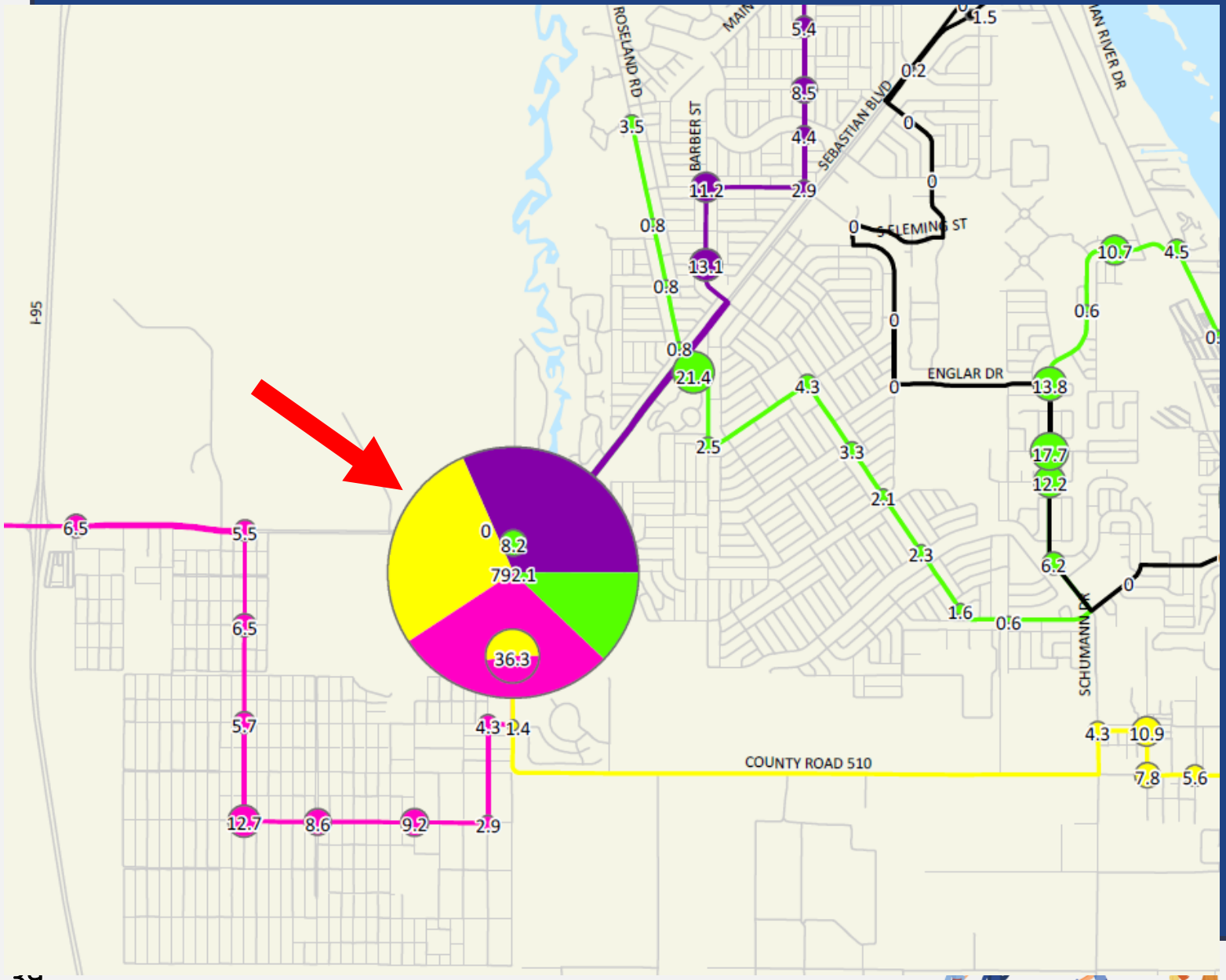


VIDEO SAMPLE

INDIAN RIVER PACKAGE - VIDEO DATA DETECTION REPORT SAMPLES



NORTH COUNTY HUB – APC DATA



- Passenger boardings and alightings from Automatic Passenger Counters (APC's)
- Avg. daily activity at North County Hub:
  - ~800 boardings and alightings
  - 4 routes

INDIAN RIVER PACKAGE – DEPLOYMENT LOCATIONS AND PHOTOS

INDIAN RIVER PACKAGE - VIDEO SAMPLE

INDIAN RIVER PACKAGE – INFRARED DATA

Willow St south of Idaho Ave

Location:	88N005-SE-Willow St and Idaho Ave	GPS:	27.769947, -80.593039
Direction/Side:	South East Sidewalk	District/County:	D4-Indian River
Data Collection Period:	2/20/2020 to 3/4/2020	Count Type:	IR-Ped/Bike (Trafx)

Florida Department of Transportation
NON-MOTORIZED DATA COLLECTION

Time	Thu 20-Feb	Fri 21-Feb	Sat 22-Feb	Sun 23-Feb	Mon 24-Feb	Tue 25-Feb	Wed 26-Feb	Thu 27-Feb	Fri 28-Feb	Sat 29-Feb	Sun 1-Mar	Mon 2-Mar	Tue 3-Mar	Wed 4-Mar	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
6:00 AM	5	6	0	1	12	6	11	23	21	0	0	14	13	44	156
7:00 AM	21	14	0	1	20	36	33	50	30	0	0	26	41	54	326
8:00 AM	8	15	0	5	4	2	2	22	7	10	1	0	8	1	85
9:00 AM	1	0	3	8	0	0	0	0	0	1	12	0	2	2	29
10:00 AM	2	1	2	12	1	0	0	2	0	0	19	0	1	0	40
11:00 AM	0	2	1	12	1	2	0	0	2	1	17	0	1	2	41
12:00 PM	0	1	5	7	1	1	2	0	3	0	6	2	0	1	29
1:00 PM	2	3	0	5	2	1	10	1	8	2	5	0	1	2	42
2:00 PM	19	8	1	6	6	5	6	14	7	6	4	14	2	9	107
3:00 PM	13	16	2	7	10	8		23	39	0	8	23	11	6	166
4:00 PM	0	4	0	4	2	2	1	3	5	1	6	9	10	3	50
5:00 PM	2	2	4	3	2	1	0	1	2	4	3	1	11	5	41
6:00 PM	7	4	2	5	3	1	3	6	10	5	1	8	6	3	64
7:00 PM	2	0	3	0	1	4	0	5	5	3	4	6	2	4	39
8:00 PM	3	1	0	1	0	0	3	2	4	0	1	3	4	9	31
9:00 PM	0	1	1	0	1	2	2	0	1	0	0	0	1	6	15
10:00 PM	1	0	0	0	1	0	0	0	2	0	0	0	1	0	5
11:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	1	4
Total	**86**	**78**	**26**	**78**	**67**	**72**	**73**	**153**	**146**	**33**	**87**	**106**	**116**	**152**	**1273**

Weekday Daily Average:	109	Avg AM Peak:	39	Weekday Total:	652	AM Peak 10:00 AM
Weekend Daily Average:	56	Avg PM Peak:	13	Weekend Total:	224	PM Peak 5:00 PM

* Missing Data Due to Field Data Download

** Weekday Daily Average based on Tuesday, Wednesday and Thursday Daily Volume

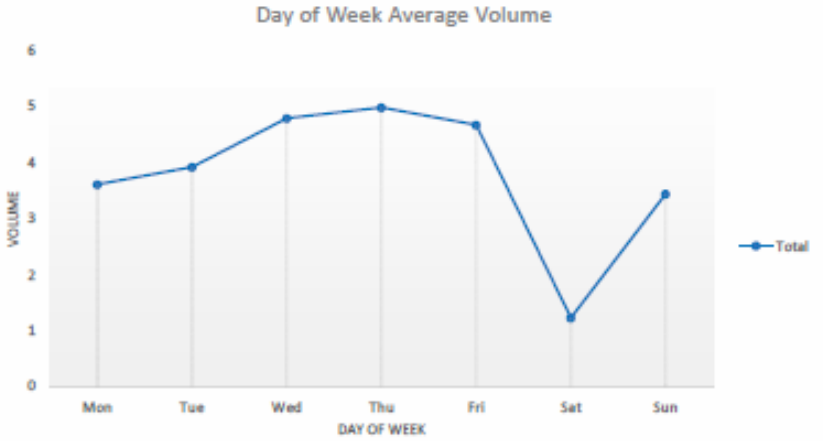
** Weekend Daily Average based on Saturday and Sunday Daily Volume

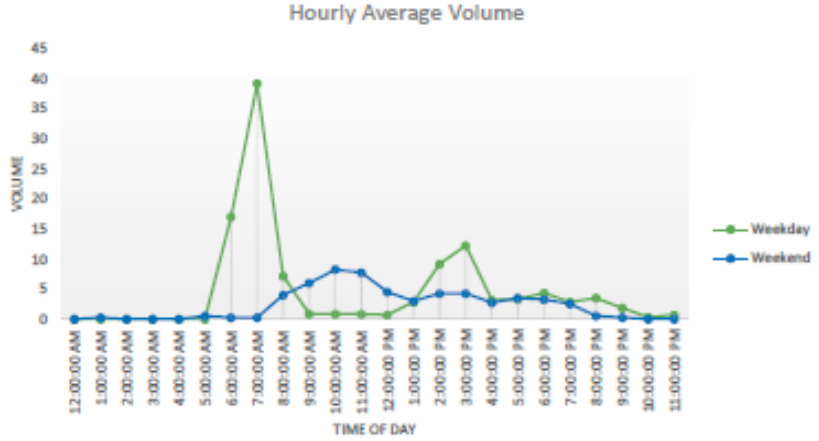
INDIAN RIVER PACKAGE – INFRARED DATA CONT.

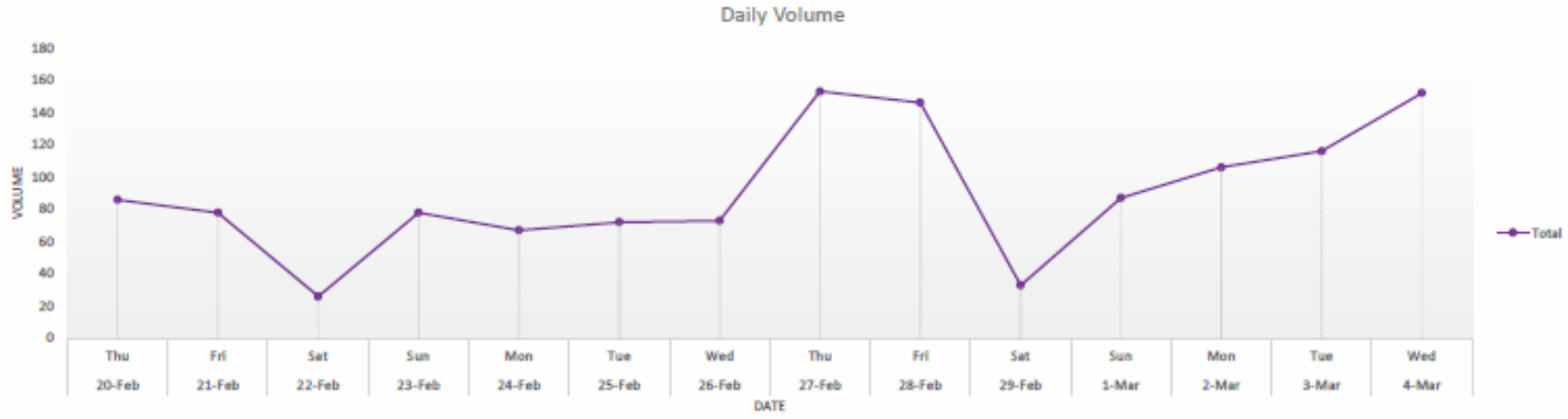
Willow St south of Idaho Ave

Location:	88N005-SE-Willow St and Idaho Ave	GPS:	27.769947, -80.593039
Direction/Side:	South East Sidewalk	District/County:	D4-Indian River
Data Collection Period:	2/20/2020 to 3/4/2020	Count Type:	IR-Ped/Bike (Trafx)

NON-MOTORIZED DATA COLLECTION







INDIAN RIVER PACKAGE – BICYCLE TUBE DATA

Willow St south of Idaho Ave

Location:	88N005-S-Willow St and Idaho Ave	GPS:	27.770059, -80.593102
Direction:	Eastbound	District-County:	D4-Indian River
Data Collection:	From: 2/20/2020 To: 3/4/2020	Count Type:	Bicycle Count (MetroCount)

Florida Department of Transportation
NON-MOTORIZED DATA COLLECTION

Time	Thu 20-Feb	Fri 21-Feb	Sat 22-Feb	Sun 23-Feb	Mon 24-Feb	Tue 25-Feb	Wed 26-Feb	Thu 27-Feb	Fri 28-Feb	Sat 29-Feb	Sun 1-Mar	Mon 2-Mar	Tue 3-Mar	Wed 4-Mar	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	1	0	0	4	0	0	0	0	0	0	0	0	0	0	5
9:00 AM	0	0	0	2	0	0	0	0	0	0	7	0	0	1	10
10:00 AM	0	1	0	4	0	0	0	0	0	0	4	0	0	0	9
11:00 AM	0	0	1	3	0	0	0	0	2	0	8	0	1	1	16
12:00 PM	0	0	2	3	0	0	0	0	0	0	2	2	1	1	11
1:00 PM	0	1	1	2	0	0	0	1	5	0	3	0	0	1	14
2:00 PM	1	0	0	4	0	0	0	0	2	2	3	1	0	0	13
3:00 PM	0	3	3	4	0	0	0	2	2	0	3	1	1	2	21
4:00 PM	0	1	0	4	1	0	0	0	0	2	5	1	1	4	19
5:00 PM	0	1	1	0	0	0	0	0	0	3	2	0	4	1	12
6:00 PM	3	5	1	5	4	2	1	1	8	1	0	1	2	0	34
7:00 PM	0	0	2	0	0	2	0	5	0	4	3	0	0	2	18
8:00 PM	0	0	0	0	0	0	1	4	3	0	0	0	4	4	16
9:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	3	4
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	***5***	***12***	***11***	***37***	***5***	***5***	***2***	***13***	***22***	***12***	***40***	***6***	***16***	***20***	***206***

Weekday Daily Average:	10	Avg AM Peak:	1	Weekday Total:	61	AM Peak 11:00 AM
Weekend Daily Average:	25	Avg PM Peak:	3	Weekend Total:	100	PM Peak 6:00 PM

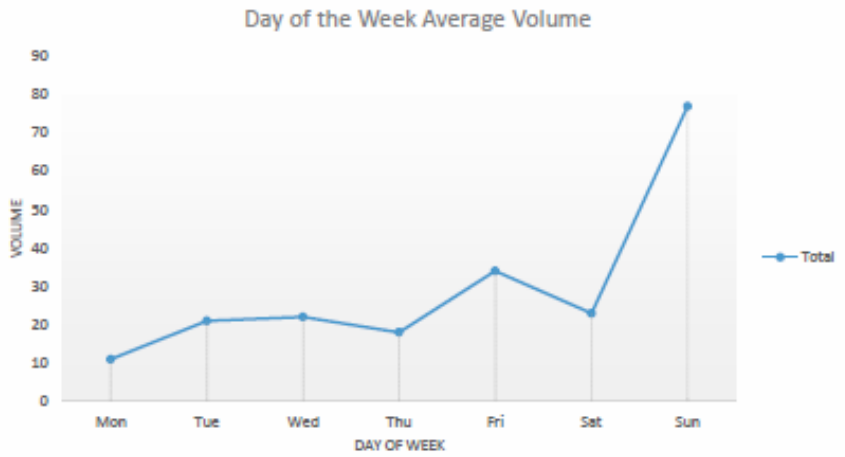
* Weekday Daily Average based on Tuesday, Wednesday and Thursday Daily Volume.
** Weekend Daily Average based on Saturday and Sunday Daily Volume.

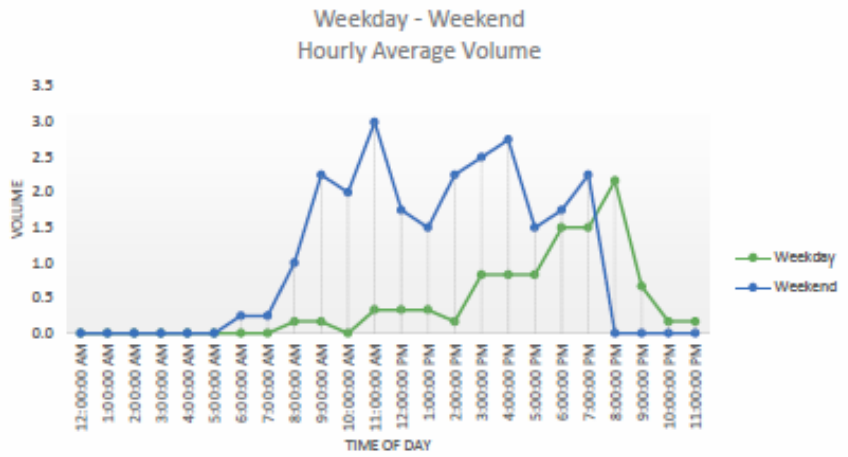
INDIAN RIVER PACKAGE – BICYCLE TUBE DATA CONT.

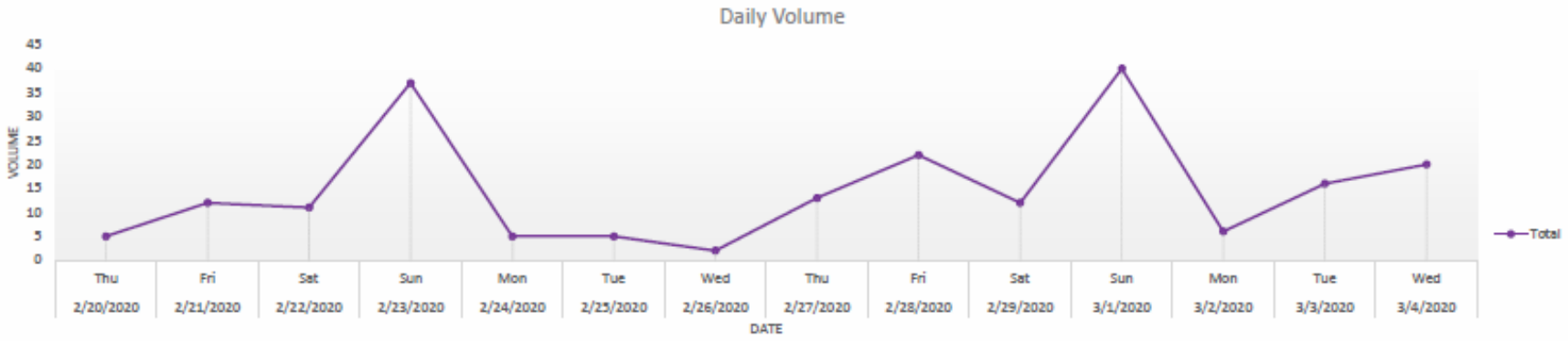
Willow St south of Idaho Ave

Location:	88N005-S-Willow St and Idaho Ave		
Direction:	Eastbound	District-County:	D4-Indian River
Data Collection:	From: 2/20/2020 To: 3/4/2020	Count Type:	Bicycle Count (MetroCount)

Florida Department of Transportation
NON-MOTORIZED DATA COLLECTION







NORTH CAROLINA NON-MOTORIZED VOLUME DATA PROGRAM

Sarah Searcy, Program Manager, Institute for Transportation Research and Education

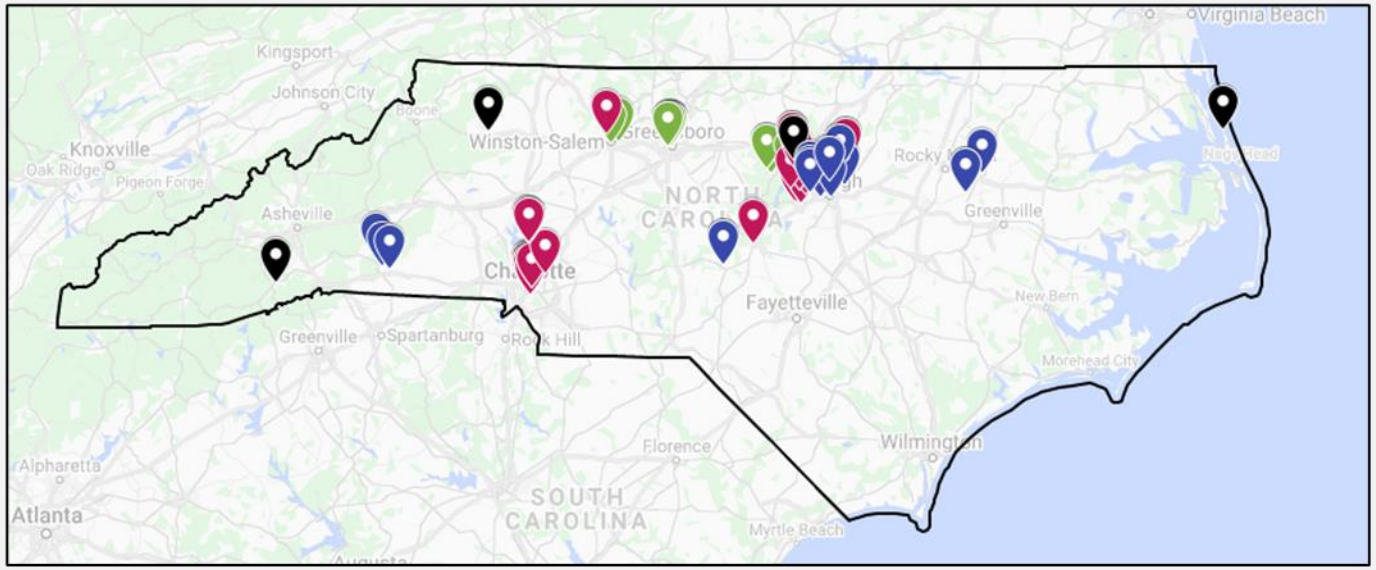
North Carolina Non-Motorized Volume Data Program (NC NMVDP)

Program Overview and Data Application Examples

May 2021

Institute for Transportation Research and Education (ITRE)
Bicycle and Pedestrian Program

NC NMVDP Continuous Counter Locations

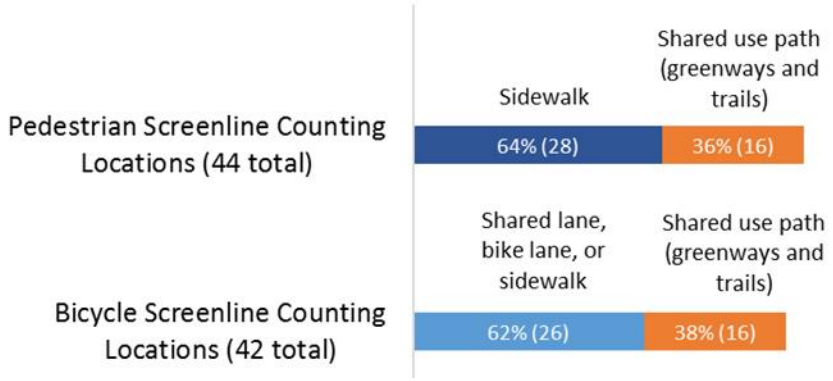


NCDOT-Purchased Counters in the NC NMVDP:

- **Eco-Counter MULTI Systems**
  - Passive infrared pedestrian sensors and inductive loop bicycle sensors
- **48 Counting Locations** (Stations)
- **71 Counting Systems** (Loggers)
- **141 Total Sensors**

20+ additional counting locations were onboarded into the program that were purchased/installed by local agencies in the state.

Screenline Counting Locations by Mode and Facility Type (NC NMVDP Phase 1 & 2)



NC NMVDP Coordination Areas

Local Agency Coordination

- Training/Outreach
- Site Selection
- Agreement Execution

Equipment Coordination

- Procurement
- Inventory
- Installation/Onboarding
- Validation
- Maintenance

Data Coordination

- Monitoring
- Validation
- QA/QC
- Analysis
- Reporting
- Storage

Project Management

NC NMVDP – Program Models for Phase 1 (Pilot), Phase 2, and Collaborative Agency

Phase 1 (Pilot) & Shared Use Path

- Winston-Salem
- Greensboro
- DCHC MPO
  - Durham
  - Chapel Hill
  - Carrboro
- Durham
- Brevard
- North Wilkesboro
- Duck

Phase 2

- Charlotte
- Davidson
- Sanford
- Durham
- CAMPO
  - Raleigh
  - Apex
  - Cary
  - Wake Forest

Collaborative Agency Model

- All Phase 1 & 2 agencies after transfer of ownership
- Agencies that purchased and installed counters separately from the NC NMVDP but opt into a data management scope of work

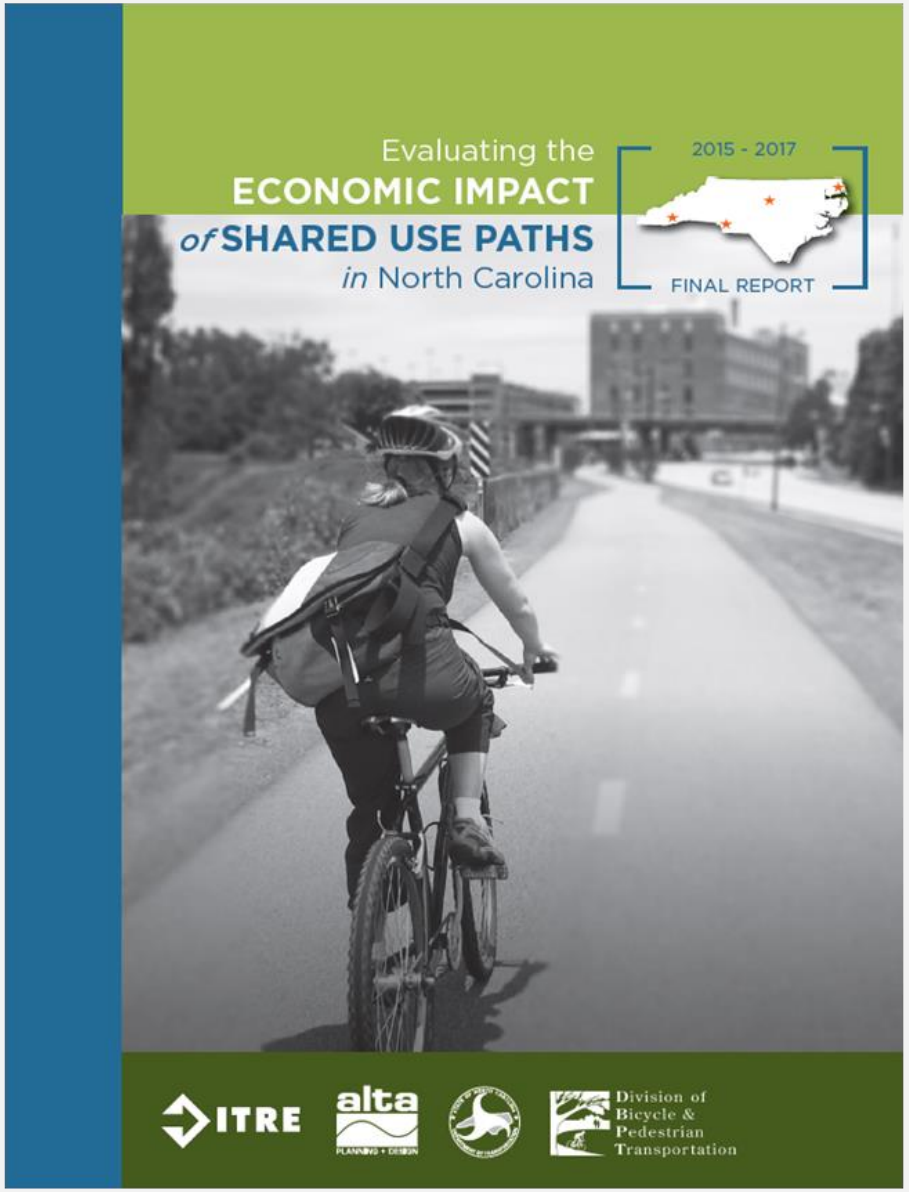
Memorandums of Agreement (MOA) were initiated between NCDOT & the local agency receiving the count equipment. The MOA provides details related to equipment specifications, responsibilities, timeline for installation, maintenance, equipment access, and data.

Under the signed MOA, ITRE/NCDOT are responsible for non-routine maintenance of the equipment until ownership is transferred to the agency 24 months after the installation date.

- Battery replacement
- Replacing malfunctioning equipment
- Sensor replacement
- Data transmittal charges, including GSM subscriptions
- Any other non-routine hardware or software maintenance

ITRE/NCDOT provides data monitoring and management support, including routine quarterly and annual data quality assurance & quality control (QA/QC), equipment validation, and data reporting. Scope includes limited support for field maintenance & troubleshooting.

NC NMVDP Count Data Applications – Example #1



Evaluating the Economic Impact of Shared Use Paths in NC (2015 - 2017)

Objective:

Design and test a methodology for consistently evaluating the economic contribution of shared use paths in North Carolina.

- Four SUPs included in study:
  - American Tobacco Trail
  - Brevard Greenway
  - Little Sugar Creek Greenway
  - Duck Trail
- Data collection included intercept surveys, manual counts, and permanent continuous counts.
- Used count data from the NC NMVDP to estimate annual trips on the SUPs included in the study.
- Built on methods developed in previous before-and-after study on the American Tobacco Trail.
- Methodology used in Southwest High Point Greenway (2016) and Middle Fork Greenway (2017) economic impact studies.

NC NMVDP Count Data Applications – Example #1

Estimating Unique Users & Annual Trips on Shared Use Paths

- Simply adding counts from each data collection location would result in multi-counting people who passed more than location.
- Survey data defined where people entered, exited, or turned around on the trail and were used to estimate unique users on a per day basis.
- Unique user estimates were used to adjust count data from permanent continuous counters to determine annual trips as inputs to calculate economic impacts.

See full report at go.ncsu.edu/sharedusepaths (pp. 60-62)

NC NMVDP Count Data Applications – Example #1

COMBINED STUDY RESULTS

A one-time $26.7M capital investment in the four greenways supports:

$19.4M
Estimated annual sales revenue at local businesses along the four greenways *(p. 66)*

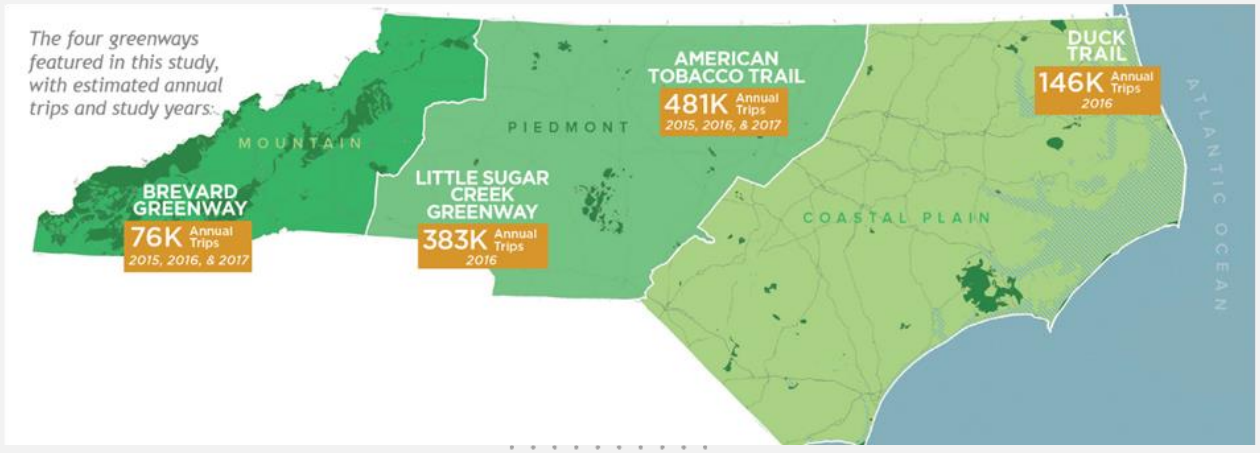
$684K
Estimated annual local and state sales tax revenue from businesses along the greenways *(p. 71)*

$25.7M
Estimated annual savings due to more physical activity, less pollution and congestion, and fewer traffic injuries from use of the greenways *(p. 74)*

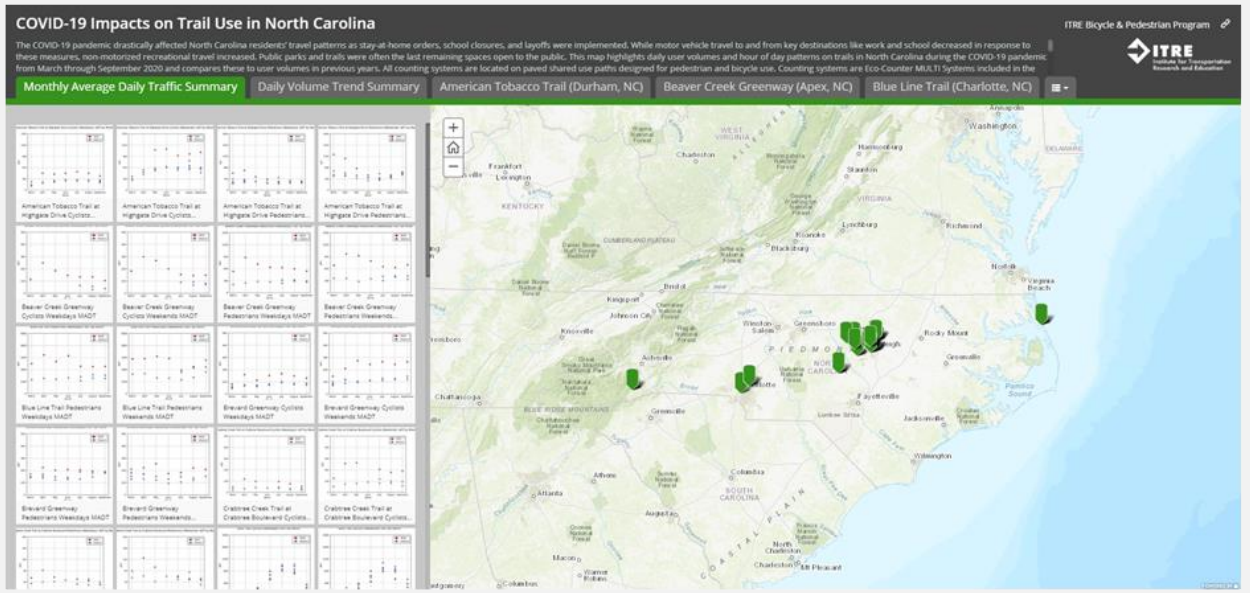
$48.7M
Estimated business revenue from greenway construction *(p. 72)*

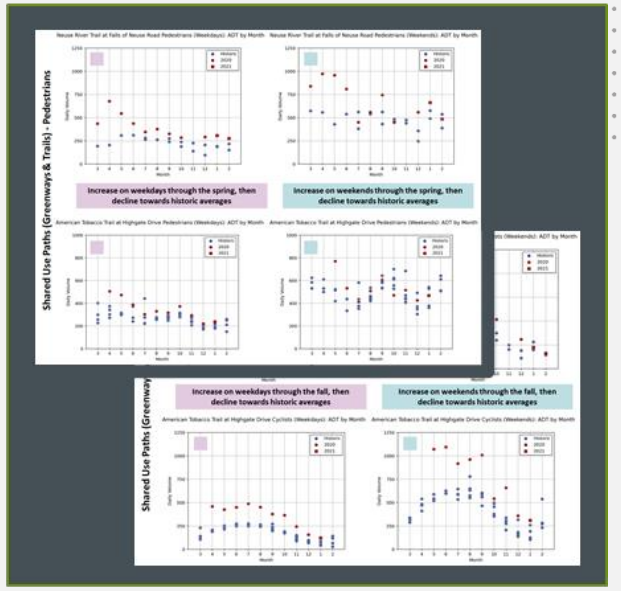
790 JOBS
Are supported annually through greenway construction *(pp. 68, 72)*

CUMULATIVE IMPACT: Every $1.00 of SUP capital investment supports $1.72 annually from sales revenue, sales tax revenue, and trail user health benefits.



NC NMVDP Count Data Applications – Example #2





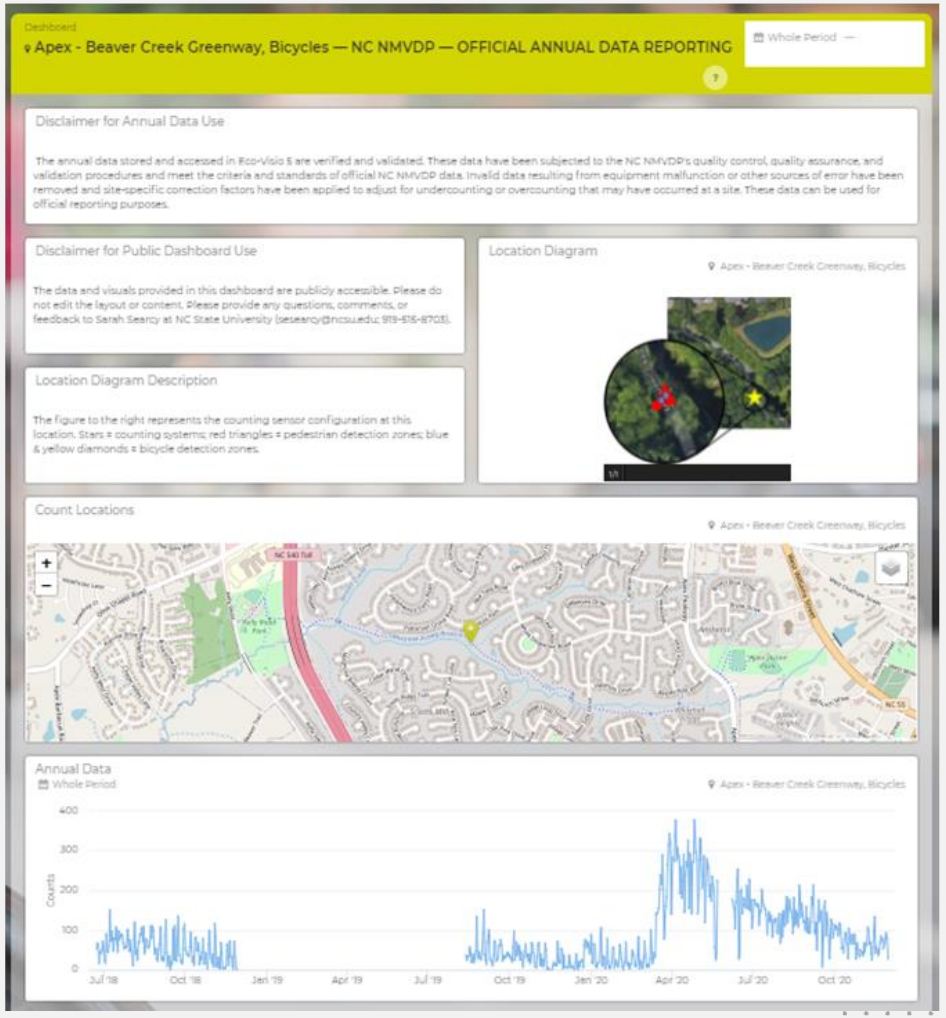
COVID-19 Impacts on Bicyclist and Pedestrian Activity in North Carolina

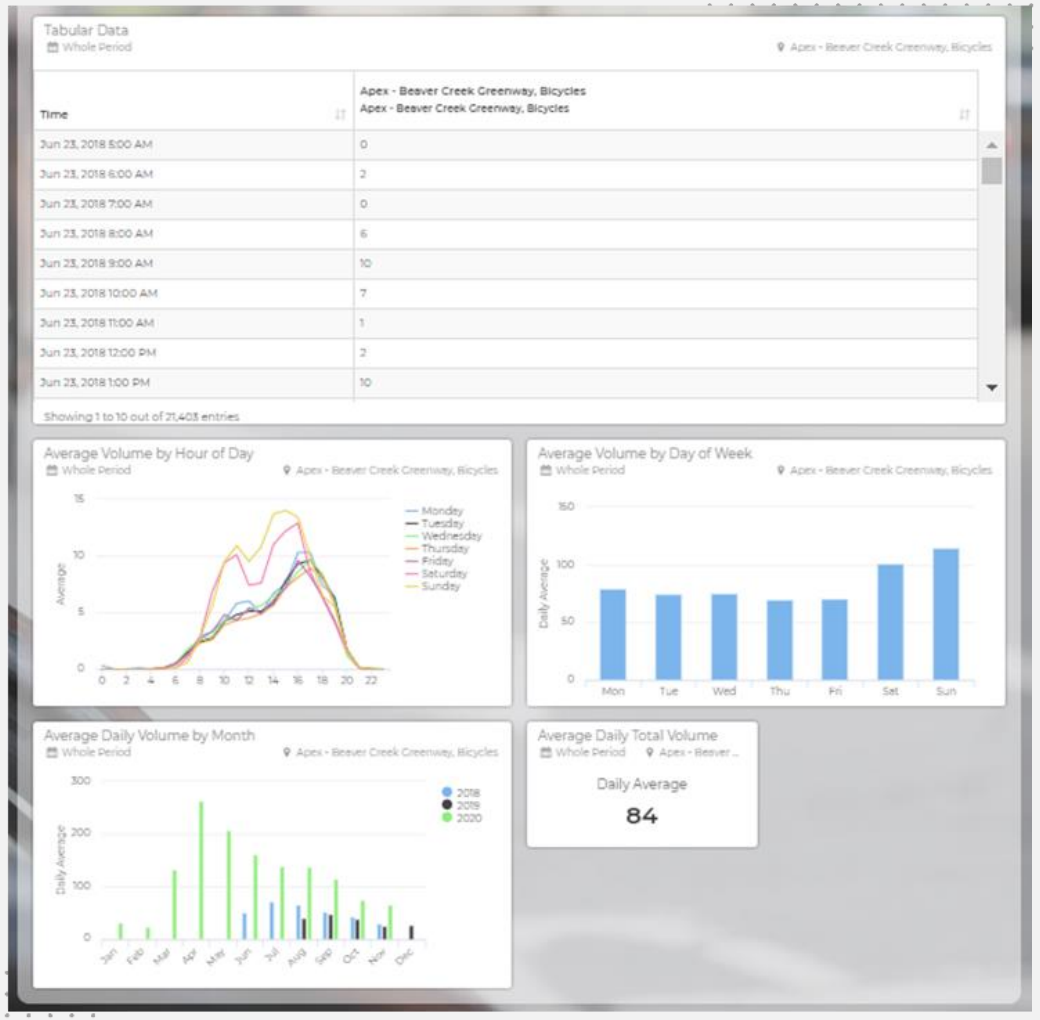
Objective:

Examine the impact of the COVID-19 pandemic on bicyclist and pedestrian activity in North Carolina by analyzing count data from the NC NMVDP.

- Preliminary results were shared through presentations to NCDOT Integrated Mobility Division and during the 2021 National Bike Summit.
- ArcGIS StoryMap also available that highlights daily user volumes and hour of day patterns on trails in NC during the pandemic from March through September 2020 and compares these to user volumes in previous years.
    - Currently being updated to reflect results through February 2021.

NC NMVDP – Quarterly and Annual Data Reports





Project Website

https://go.ncsu.edu/nmvdp

NC STATE UNIVERSITY

COVID-19 UPDATES | RESOURCES | search nc state

LOCATION | STAFF | CONTACT | PRIVACY

Institute for Transportation Research and Education

About | Focus Areas | Research | Training | Technical Services | Search ITRE

North Carolina Non-Motorized Volume Data Program

About

ITRE manages the North Carolina Non-Motorized Volume Data Program (NC NMVDP) for the North Carolina Department of Transportation (NCDOT). The NC NMVDP began as a research project to test a bicycle and pedestrian count protocol for replication across the state. The program currently includes one of the most extensive statewide networks of continuous bicycle and pedestrian counting sensors and provides data management and reporting support for multiple local agency partners. The bicycle and pedestrian counting systems are installed on sidewalks, roadways, and shared use paths across the state. The data produced from this program can be used to evaluate facility usage over time, inform the project prioritization process, provide quantifiable evidence to support multi-modal Complete Streets policies, and improve municipal and regional active transportation planning. The data can be used in planning tools to measure existing patterns and model future trends at the site, corridor, and regional levels.

In late 2018, the NC NMVDP was restructured from a linear set of research tasks into a formal program structure based on three coordination areas (Local Agency, Equipment, and Data) encompassed by overall project management. Under this structure, each coordination area is assigned a technical lead for oversight of its discrete day-to-day tasks.

COVID-19 Impacts on Bicyclist and Pedestrian Activity in North Carolina

ITRE examined the impact of the COVID-19 pandemic on bicyclist and pedestrian activity in North Carolina by analyzing count data from the NC NMVDP.

Resources for Local Agency Partners

Additional Resources

2020 BikeWalk NC Summit: North Carolina Non-Motorized Volume Data Program (NC NMVDP) – An Update [Link]

2020 BikeWalk NC Summit: Accessing and Analyzing Public Count Data from NC's Pedestrian and Cyclist Counters [Link]

Conversations with Colleagues 07/23/19: Standardizing and Collecting Data with Local Partners [Link]

NC NMVDP Key Contacts

Sarah Searcy
Program Manager & Local Agency Coordinator
seseary@ncsu.edu
919-515-8703

Craig Baird
Equipment Coordinator
clbaird@ncsu.edu
919-515-8041

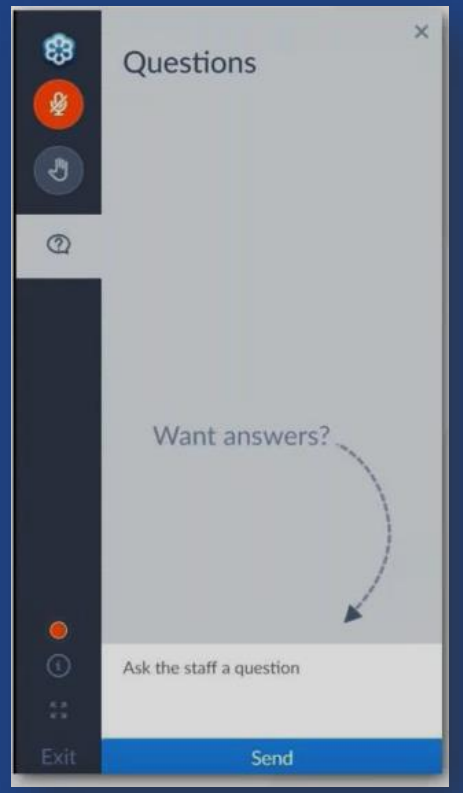
Blythe Carter Geiger
Data Coordinator
bacarte2@ncsu.edu
919-515-8601

Chris Carnes
Validation Lead
ccarnes@ncsu.edu

Brendan Kearns
Data Processing Lead
bckearns@ncsu.edu

QUESTIONS AND CONTACT INFORMATION

- Brenda Young – Brenda.young@dot.state.fl.us
- Chris Wiglesworth – Chris.wiglesworth@dot.state.fl.us
- Lisa Maack - Lmaack@marlinengineering.com
- Brian Freeman - Bfreeman@ircgov.com
- Jim Mann - Jmann@ircgov.com
- Sarah Searcy - Sesearcy@ncsu.edu
- Eric Katz – Eric.katz@dot.state.fl.us
- Liz Stolz – Estolz@marlinengineering.com



CLOSING VIDEO

THANK YOU FOR ATTENDING!

- Recording will be made available soon after the webinar
- Please complete the follow-up survey that will be sent via email at the conclusion of this webinar
- Next webinar will be Wednesday May 12th, 11:00am – 12:30pm (EST), and will cover Non-Motorized Data Collection National and International Perspectives
- Contact Eric.Katz@dot.state.fl.us for any questions related to today's presentation and/or AICP CM credits

FDOT Statewide Non-Motorized Traffic Monitoring Program

2021 STATEWIDE ANNUAL MEETING

WEDNESDAY
MAY 12
11:00AM - 12:30PM
(Eastern Time Zone)

WEBINAR #4:
National & International Perspectives
Click HERE to attend

11:00 AM **WELCOME FROM FDOT CIVIL INTEGRATED MANAGEMENT**
John Krause, Civil Integrated Management Officer

11:05 AM **USDOT/FHWA: NATIONAL INITIATIVES & TRAFFIC MONITORING GUIDE UPDATE**
Tianjia Tang, Steven Jessberger, Clayton Clark, FHWA

11:30 AM **DUTCH PERSPECTIVE: HOW DID NON-MOTORIZED DATA HELP THE PAST, PRESENT, AND FUTURE OF THE NETHERLANDS**
Chris Bruntlett, Dutch Cycling Embassy; Johan Diepens, Mobycon; Herbert Tiemens, City of Utrecht; Roland Kager, Studio Bereikbaar; Joost de Kruijf, Bredo University; Deodaat Boer, Cycle Data

12:15 AM **QUESTIONS**

12:25 PM **CLOSING VIDEO FROM FDOT OFFICE OF INFORMATION TECHNOLOGY**
April Blackburn, FDOT Chief Technology Officer

FDOT TDA Traffic Monitoring Division

WEBINAR SERIES

This webinar will provide Florida with experts from USDOT and the Dutch Cycling Embassy to provide national and international perspectives regarding non-motorized data collection. USDOT presenters will share news on national bicycle and pedestrian initiatives, and the recently updated FHWA Traffic Monitoring Guide. Finally, representatives from the Dutch Cycling Embassy will share stories related to how non-motorized data impacted the past, present and future of world's leading country on bicycle infrastructure.

WEBINAR PARTNERS

U.S. Department of Transportation Federal Highway Administration

DUTCH CYCLING EMBASSY

NL Netherlands

AICP CM

QUESTIONS? Please e-mail Eric.Katz@dot.state.fl.us or Joey.Gordon@dot.state.fl.us

SAFETY MESSAGE

- Wear helmet when riding your bike