Florida Department of
TRANSPORTATION

FDOT
Statewide Non-Motorized Traffic Monitoring Program

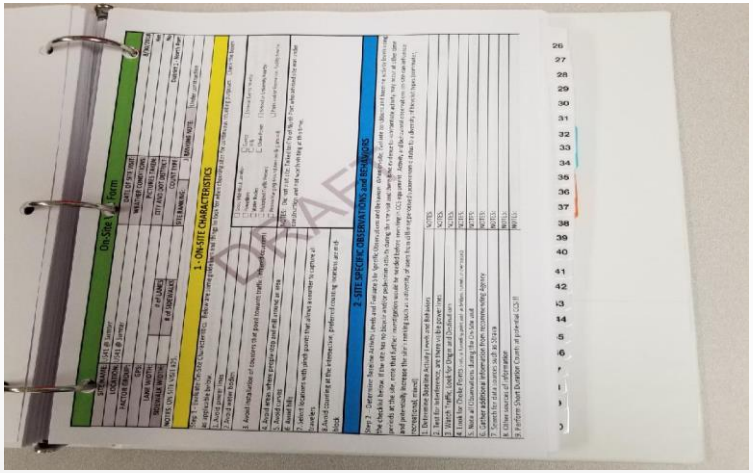
ITE Presentation

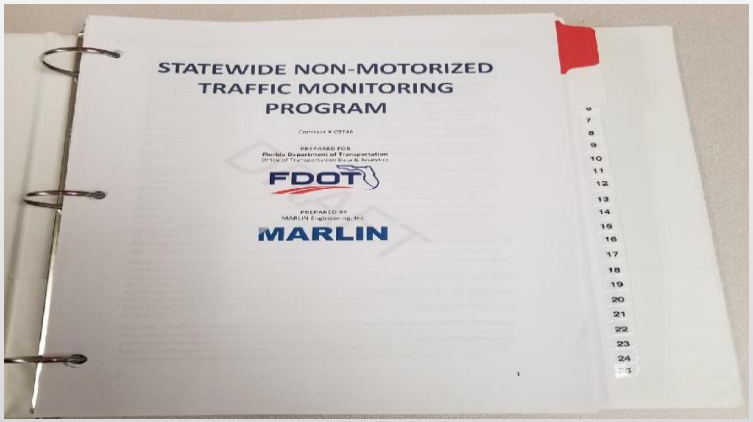
October 29-31, 2018

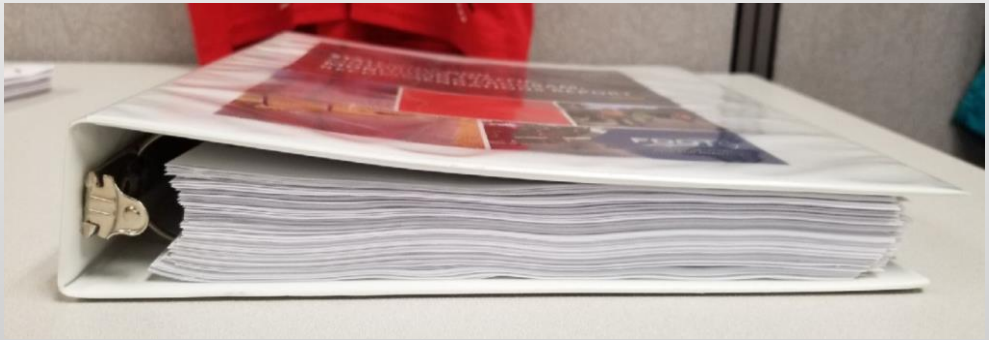
Florida DOT (FDOT) Program Overview

- Non-motorized Year 1 Goals
  - Phase 1 – To identify, implement and document Non-motorized traffic monitoring methods resulting in the creation of a FDOT statewide non-motorized traffic monitoring program
  - Phase 2 – To identify, implement, and document installation of continuous counting monitoring sites
  - Phase 3 – To identify, implement, and document data publication methods

Recommendations Report







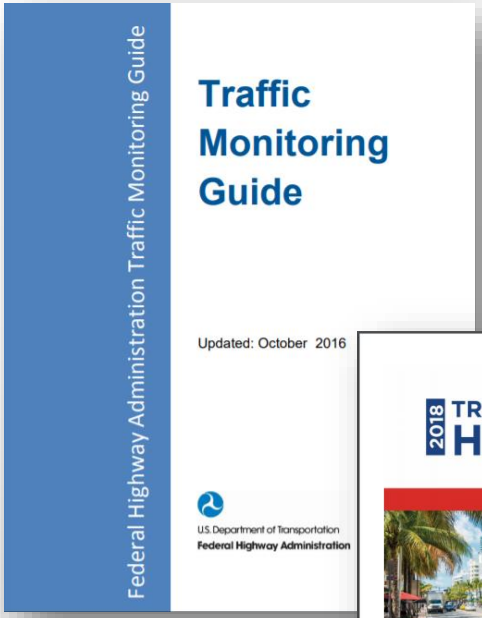
Phase 1 - RESULTS

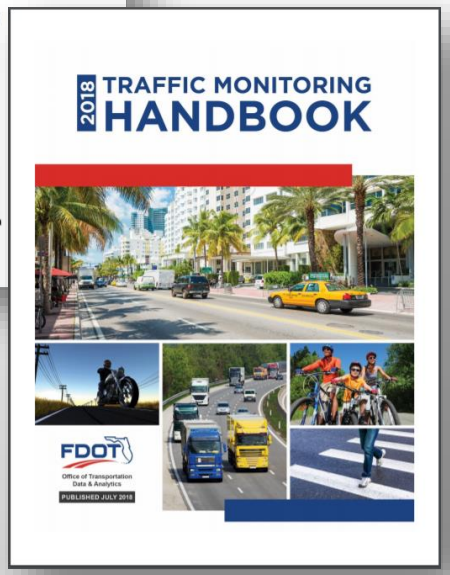
To identify, implement and document site selection methods creating a statewide bicycle and pedestrian counting program

- Documented Methods in the Recommendations Report
- Identified Top 30 sites to consider for Continuous Counting Station (CCS) equipment installation
- Statewide Coordination with Stakeholders
- Counting Program Development Methods Training to statewide stakeholders

Non-Motorized Program Methods

- National/FHWA approved, compliant and documented national standards and methods
- Taking advantage of already existing Motorized Traffic Volume Program resources and well-established methods and adding some new resources
  - Equipment
  - Software
  - Staffing
- Stakeholder Coordination is the key “lynchpin” of the program!





FDOT Non-Motorized Team

- Ed Hutchinson – Transportation Data & Analytics Manager
- Steve Bentz – Transportation Monitoring Program Manager
- Joey Gordon – Transportation Data QC Manager; Task Manager for Non-Motorized Traffic Monitoring Program
- Chris Francis, PhD, - Statewide Non-Motorized Program Project Manager (MARLIN Engineering Inc.)
- Liz Stolz – Managed (2) Statewide DOT Traffic Programs, Developed the first DOT Bike/Ped Data Collection Program at CDOT (MARLIN Engineering Inc.)
- Eric Katz, AICP, CNU-A – Statewide Non-Motorized Traffic Monitoring Program Coordinator; 10 years experience in bicycle/pedestrian infrastructure projects within Florida (MARLIN Engineering, Inc.)

Everyone Wants Data!

Safety

Design

Roadway Maintenance

Facility Planning

Traffic Operations

Transit studies

Economic Impact

Public Health

The challenge is to find partners willing to help manage, contribute to, and maintain a statewide data program!

FDOT Non-Motorized Traffic Monitoring Program

Statewide Continuous Count Program

1-2 Continuous Counter installations per district, per year. Data will be published and publicly accessible.

Statewide Short-Term Count Loaner Program

MOU with partnering agencies. FDOT CO provides equipment and training. Partnering agency provides FDOT CO with good data.

Statewide Repository

Voluntary program in which FDOT TDA will accept bike/ped count data statewide. TDA staff will evaluate the data, identify trends, and submit to FHWA.

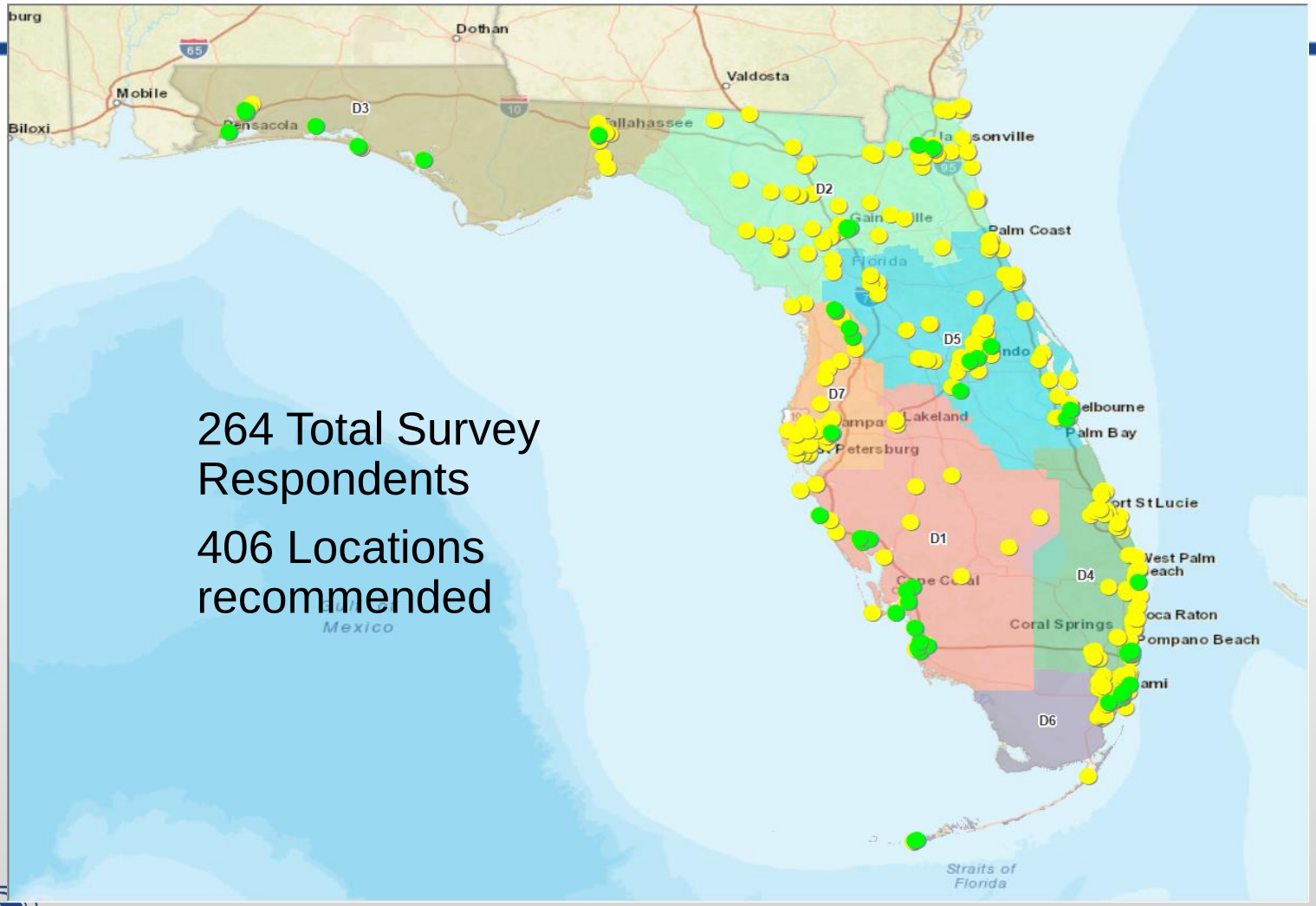
Statewide Training and Technical Assistance

Annual meeting. Annual report of published data. Periodic trainings/webinars highlighting best practices and lessons learned statewide.

FDOT Site Selection Methodology

- Create and send a survey
- Develop a worksheet and track responses
- Analyze responses
  - Conduct virtual site visits
  - Conduct on-site visits
- Prioritize and organize sites within the worksheet

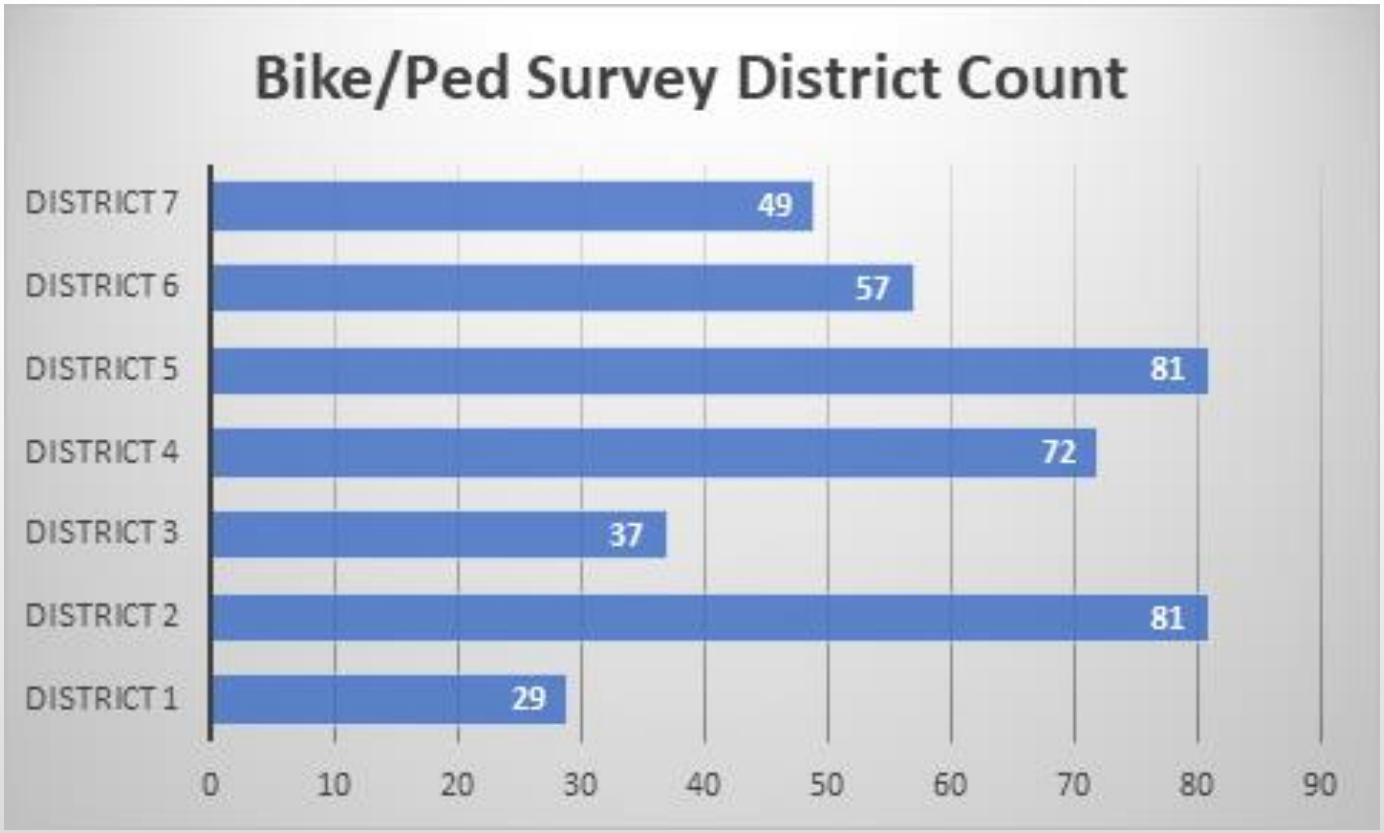
FDOT Survey Monkey



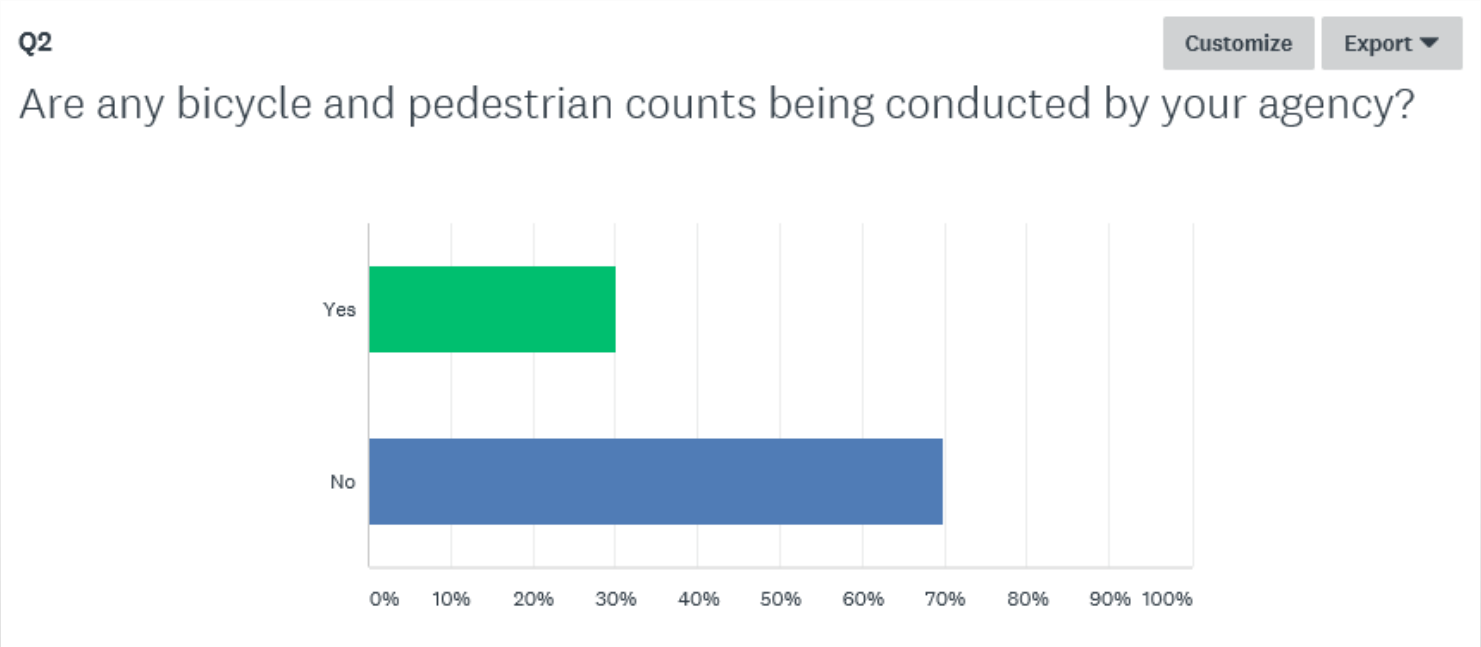
264 Total Survey Respondents

406 Locations recommended

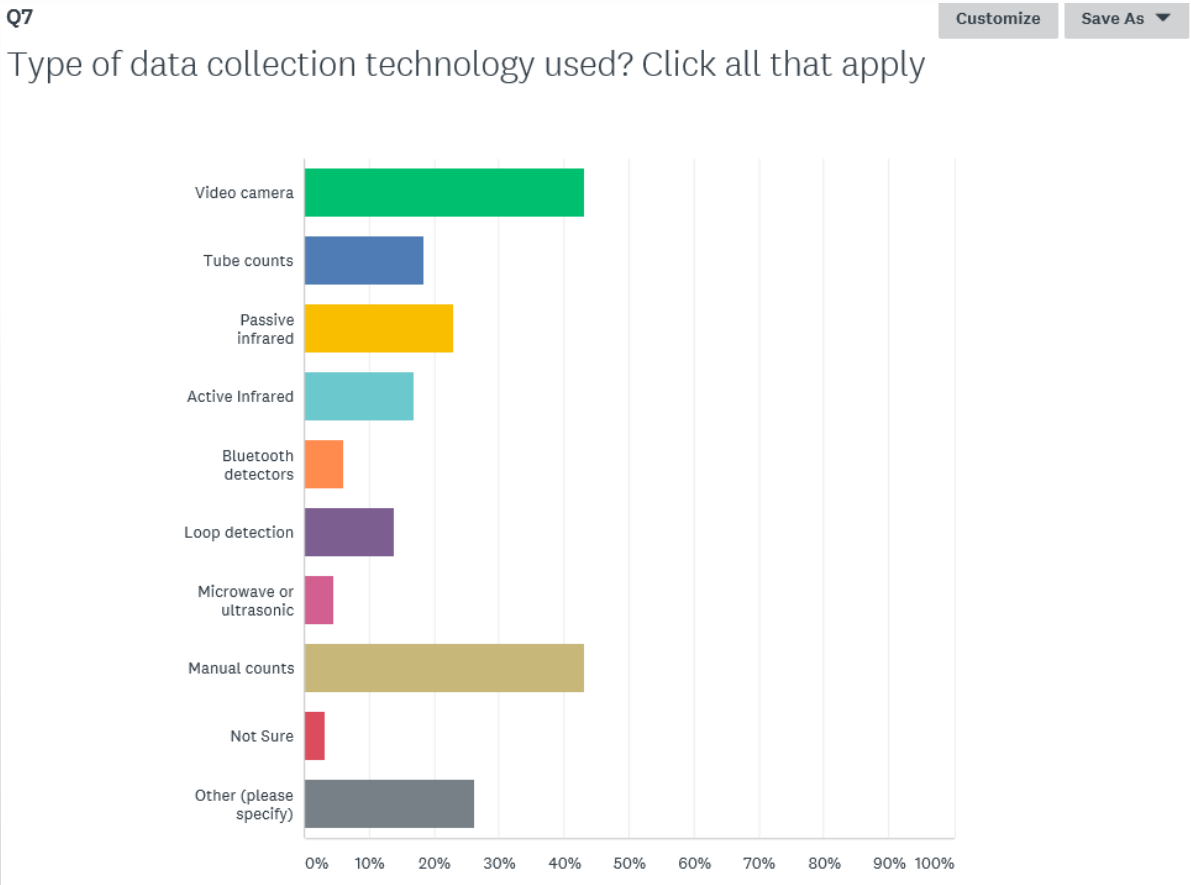
FDOT Districts Stratification of the 406 recommended locations…



FDOT Survey Monkey



FDOT Survey Monkey

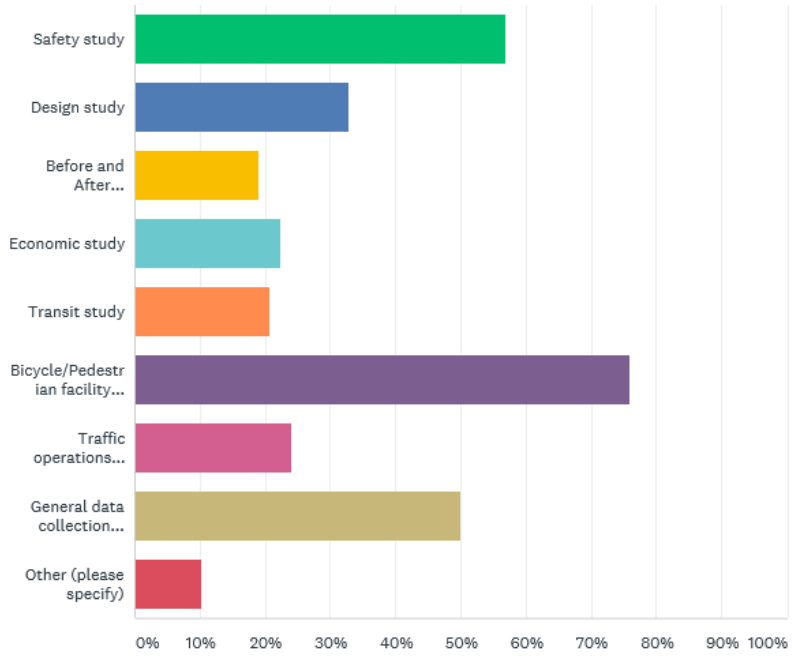


FDOT Survey Monkey

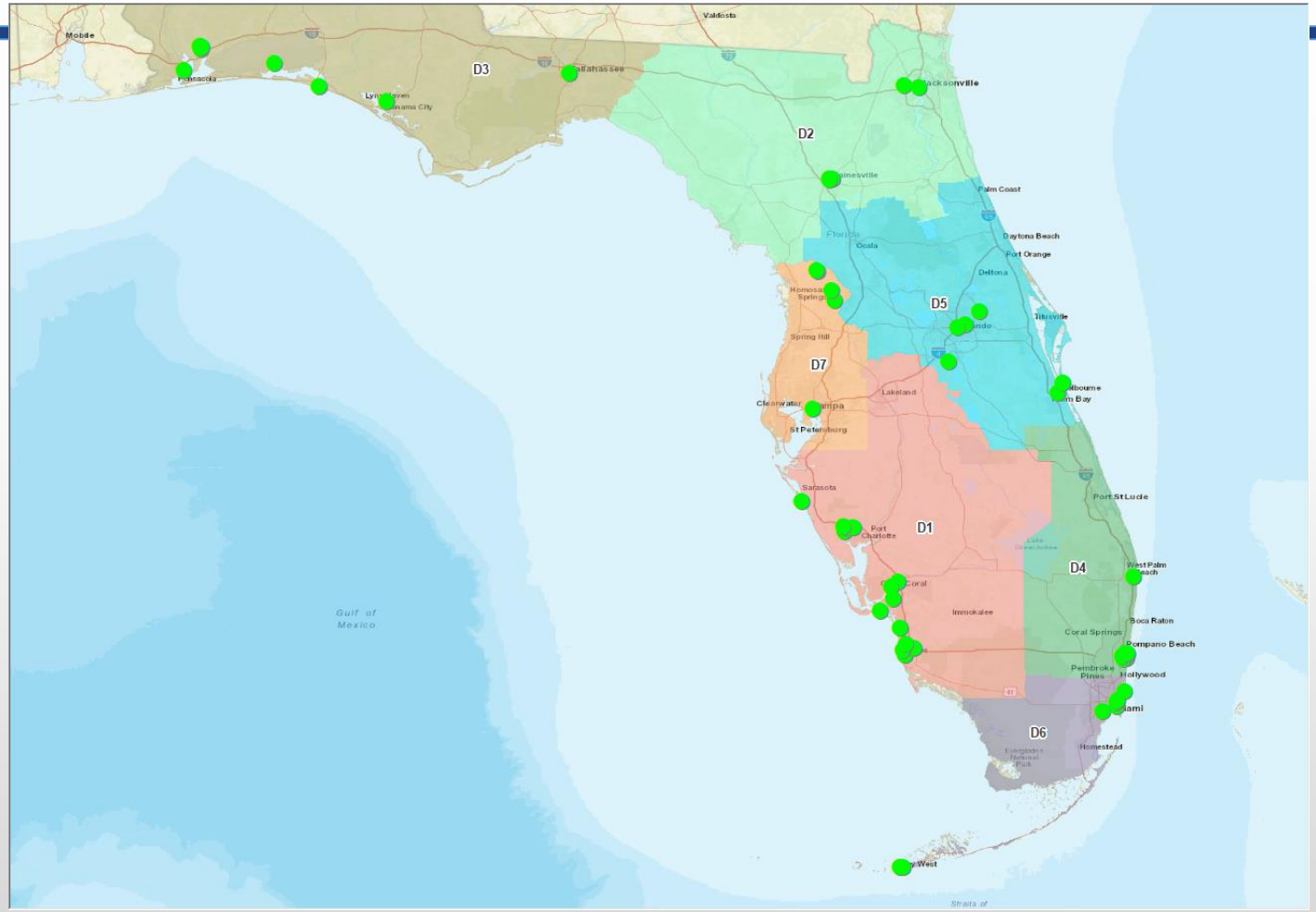
Q24

Customize Export

What is the purpose of collecting data at this location? Please click all that apply



Florida DOT Bicycle and Pedestrian Counting Geographic Area



Virtual Site Visit Findings

- Safety is an issue
- Riverfront and Causeways might need their own Factor Groups
- There are a good mix of sites that were recommended (low, medium, high volumes) and (recreational, commuter, mixed)

Site qualified for Potential Continuous Bicycle /Pedestrian Counting
Eau Gallie Causeway, Melbourne, Florida

Site qualified for Potential Continuous Bicycle /Pedestrian Counting
Shingle Creek Trail, Kissimmee, Florida

Virtual Site Visit Findings…Safety is an issue…

Miami Beach: Normandy Dr.

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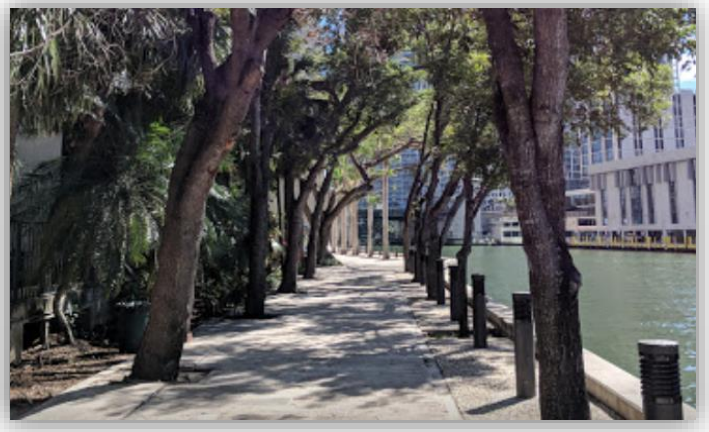
Naples, FL: US 41

Naples, FL: US 41

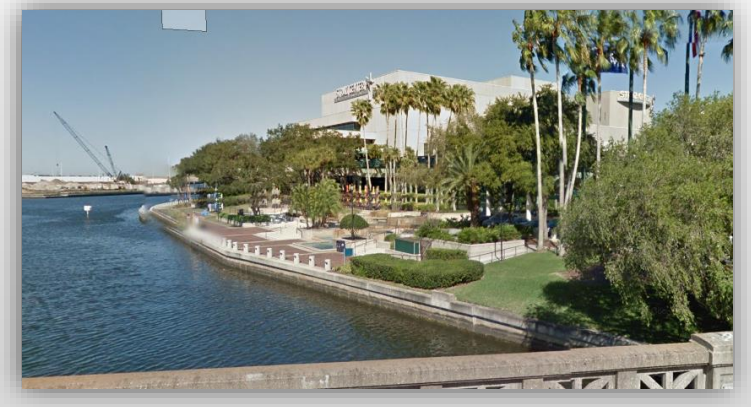
Riverwalk Factor Group?



Miami, Florida

Jacksonville, Florida

Ft. Lauderdale, Florida



Tampa, Florida

Causeway factor group?

Miami, FL

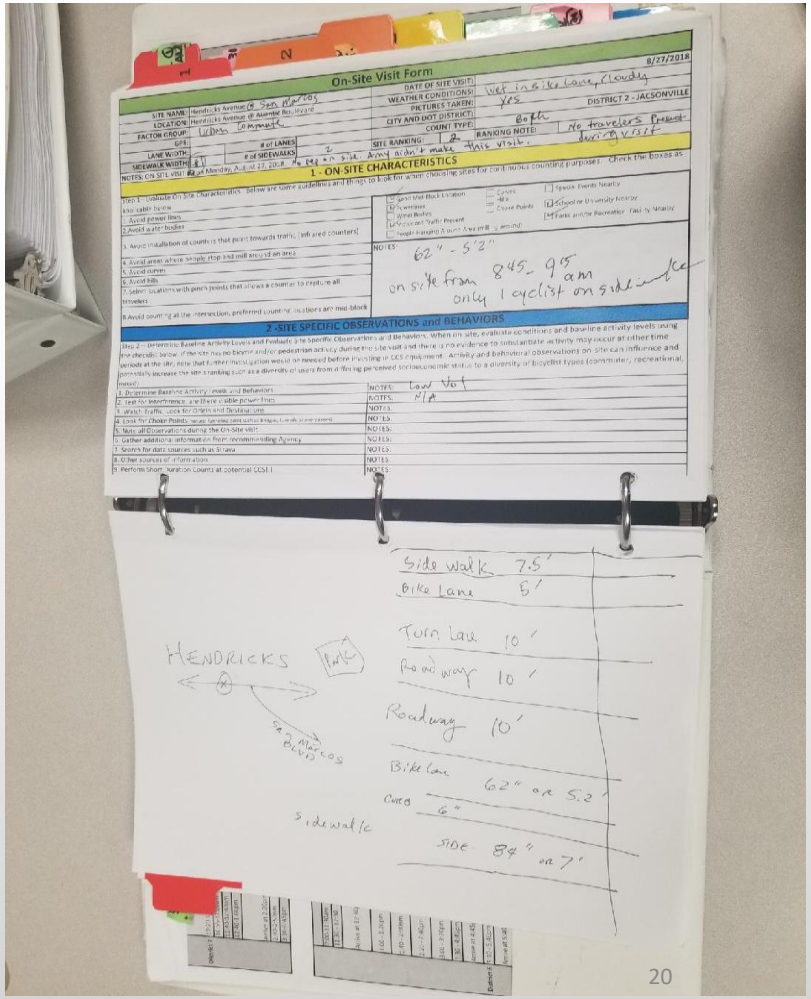
Tampa, FL

Jacksonville, FL

Ft. Lauderdale

On-Site workbook with field data collection forms

- Evaluate and record on-site specific conditions
- Determine baseline activity levels and behaviors
- 4 Core pages of critical information plus photos
- Check boxes for quick automated data collection



General on-site details and characteristics, site specific observations and behaviors

On-Site Visit Form

SITE NAME:	Hendricks Avenue @ San Marcos		DATE OF SITE VISIT:		8/27/2018
LOCATION:	Hendricks Avenue @ San Marcos		WEATHER CONDITIONS:		Stranding water in bike lane and cloudy
FACTOR GROUP:	Urban commute		PICTURES TAKEN:		Yes
GPS:	-81.6524462; 30.3036912		CITY AND DOT DISTRICT:		DISTRICT 2 - JACKSONVILLE
LANE WIDTH:	10	# of LANES 3	COUNT TYPE:	Both	
SIDEWALK WIDTH:	7.5	# of SIDEWALKS 2	SITE RANKING: 2	RANKING NOTE:	No travelers present

NOTES: ON-SITE VISIT #1 on Monday, August 27, 2018. No rep on site, but spoke with Amy over the phone.

1 - ON-SITE CHARACTERISTICS

Step 1 - Evaluate On-Site Characteristics. Below are some guidelines and things to look for when choosing sites for continuous counting purposes. Check the boxes as applicable below.

1. Avoid power lines	☑ Good Mi
2.Avoid water bodies	☑ Powerlin
3. Avoid installation of counters that point towards traffic (Infrared counters)	☐ Water Bo ☑ Motorize ☐ People H
4. Avoid areas where people stop and mill around an area	NOTES: On si
5. Avoid curves	visit.
6. Avoid hills	
7. Select locations with pinch points that allows a counter to capture all travelers	
8.Avoid counting at the intersection, preferred counting locations are mid-block	

2 -SITE SPECIFIC OBSERVATIONS

Step 2 -- Determine Baseline Activity Levels and Evaluate Site Specific Observations and Behavic the checklist below. If the site has no bicycle and/or pedestrian activity during the site visit and periods at the site, note that further investigation would be needed before investing in CCS equ potentially increase the site's ranking such as a diversity of users from differing perceived socio mixed).

1. Determine Baseline Activity Levels and Behaviors	NOTES: No n
2. Test for Interference, are there visible power lines	NOTES:
3. Watch Traffic, Look for Origin and Destinations	NOTES:
4. Look for Choke Points (natural funneling point such as bridges, tunnels or overpasses)	NOTES:
5. Note all Observations during the On-Site visit	NOTES:
6. Gather additional information from recommending Agency	NOTES:
7. Search for data sources such as Strava	NOTES:
8. Other sources of information	NOTES:
9. Perform Short Duration Counts at potential CCS!!!	NOTES: Must

3 - INSTALLAION DETAILS

Step 3 - Evaluate the site for potential continuous counting installation of equipment. During this step, make sure to consider all the items below and check the yes/no boxes and provide notes if necessary

Installation Details to evaluate are listed below.	Check the Boxes if Applicable Below and Select Surface, Installation, and Count Types:
1. Look and observe bicycle, pedestrian, and motorized traffic behaviors	☑ Travelers Present ☑ Pictures Taken
2. Take pictures of bicycle travelers to determine the best counter installation location	☑ Good Pinch Points for Install
3. Look for the pinch points where all travelers will pass within a 12 to 15' detection zone	☑ Smooth Surface ☑ Sidewalks Present ☑ Roadways Present
4. Look at the surface type and note whether it is asphalt, concrete, gravel, etc.	☑ Trails Present ☑ Post Required
5. Look at facilities to count on-site and make note of sidewalks, roadway, trails, etc.	NOTES: 1 bike and 1 ped present during visit. Local park across the street with loop path.
6. Look for travel volume generators such as hospitals, shopping malls, schools, etc.	
7. Sites should be evaluated as a potential short-duration versus continuous counting site	
8. Document site technology types (tube, infrared, video, etc.)	

SELECT SURFACE TYPE: Concrete
SELECT INSTALLATION TYPE: Loop, Piezo, IR, and Camera
SELECT COUNT TYPE(S): Both Short Term and Continuous Countin

4 - ORIGIN and DESTINATION OBSERVATIONS

Step 4 -- Look at Origins and Destinations Finding where trips begin and end can help to determine the anticipated pa assigning a factor group. Even general observations such as bicyclists wearing backpacks or having saddle bags, the typ indications of traveler type. Making such observations of environment or users helps locate specifically where equipm for downtown business districts, hospitals, transit stops, major employers, universities, public recreation lands, and bo travel generators. Look for sites to populate all factor groups with an emphasis on finding sites uniquely qualified to ca

Check the boxes to the right that apply during on-site observation evaluation and provide more specific details in the notes box below:	
	☐ Downtown Business District
	☐ Hospitals Nearby
	☑ Transit Stop Nearby
	☑ Major Employers Nearby

NOTES:

5 - ADDITIONAL INFRASTRUCTURE SITE OBSERVATIONS and SITE DRAWING

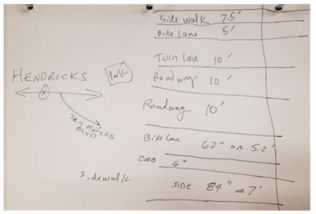
STEP 5 - Evaluate Infrastructure by making site specific observations and make additional site observations of bicyclists and pedestrians and the surrounding environmental conditions. For some sites, specific factors that could make it a complicated install include proximity to transit stops, no funneling point, etc. If these complicated installation conditions exist on site, refine the site location (i.e. moved up, down, or over a block), or drop the site lower in ranking and provide a descriptive explanation.

NOTES: According to Amy Ingles (AINGLES@COJ.NET) with the City of Jacksonville, this site could be moved. There is a lot of bike activity on this corridor, they are currently filling a gap of completing a bike lane.

Check Boxes Below if Observed While On-Site:

- ☑ Tree Present Nearby
- ☑ Polls Present Nearby
- ☐ Bollards Present Nearby
- ☐ Parallel Parked Vehicles Present Nearby
- ☐ Obstacles (in trail or road) Nearby
- ☐ Outdoor Sitting Areas Nearby
- ☐ Vehicles Queuing in Roadway Nearby

ENTER SITE DRAWING:



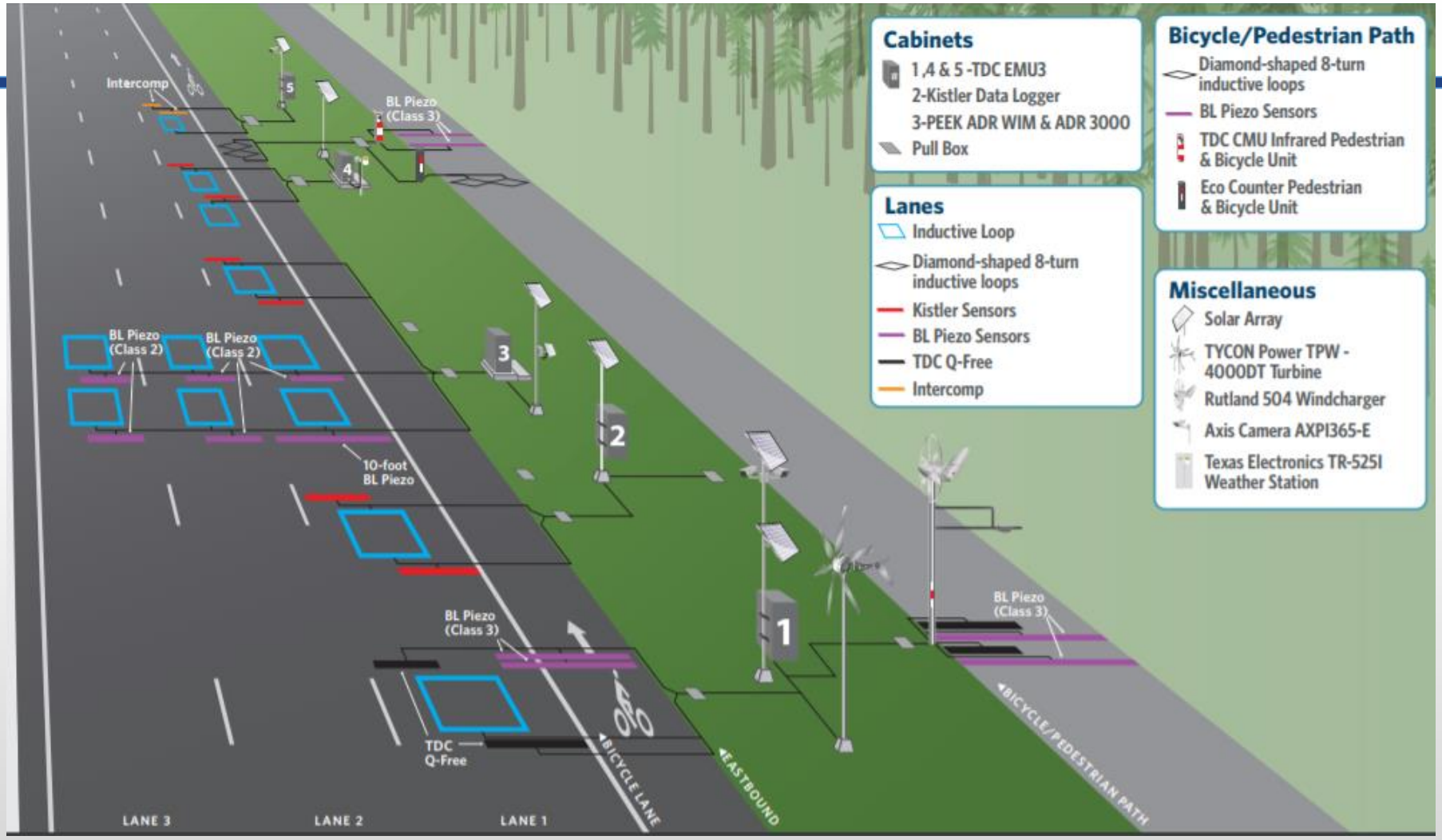
Conducted On-Site Visits
Site #14 - Cross Seminole Trail at SR 434, Orlando
on-site visit observations and photos

- Expected low volume…but…

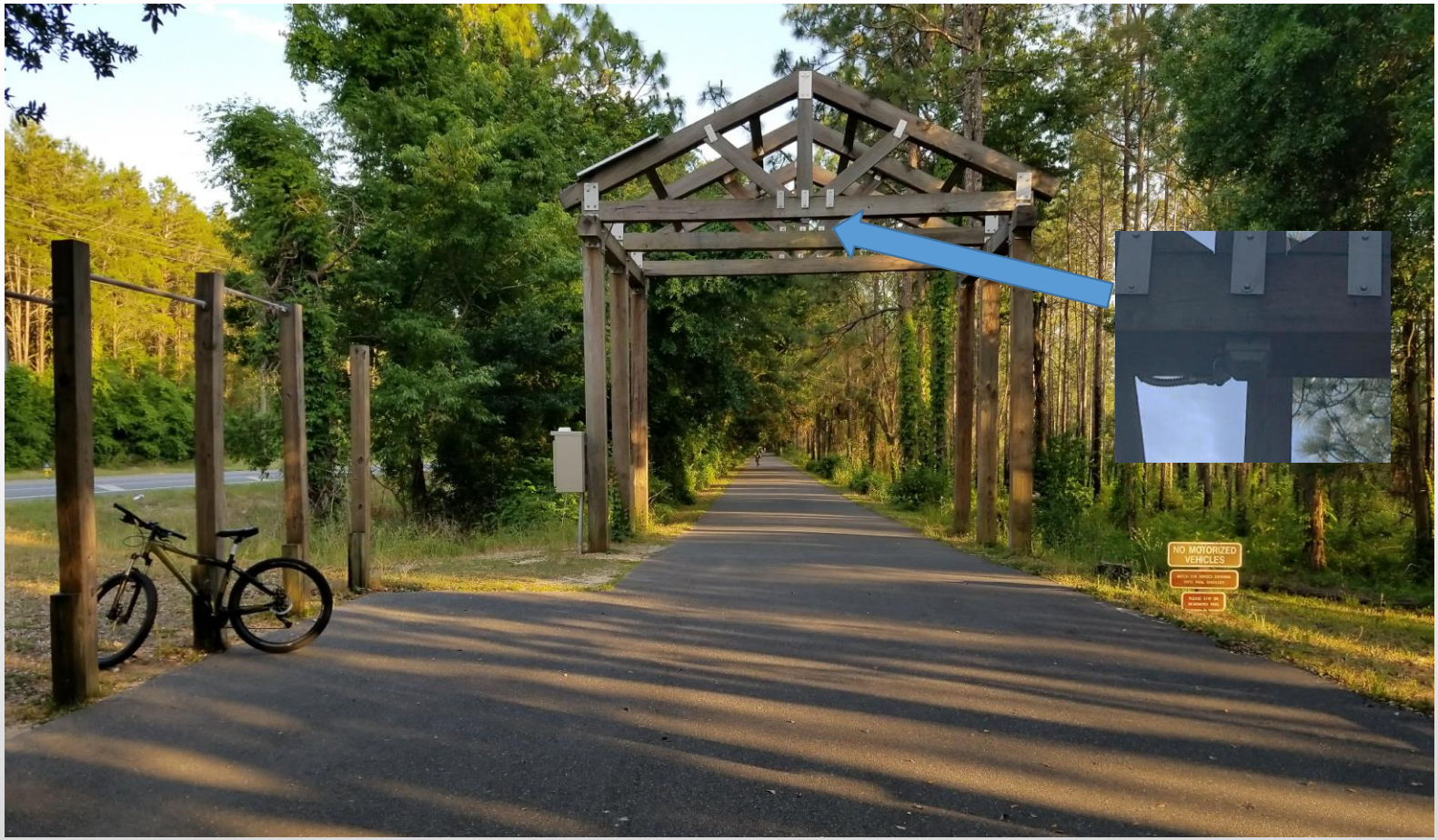
Existing data from Stakeholders includes…

- Capital Circle Test Site
- St. Marks Trail
- Key West – 13 locations
- Tallahassee
- Others…

Test Site Diagram

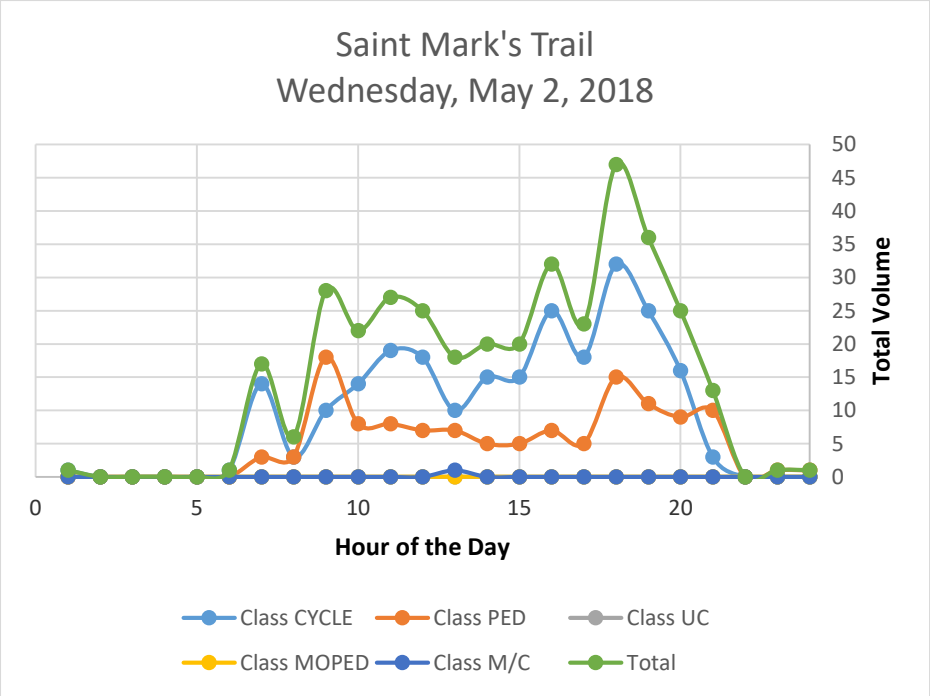


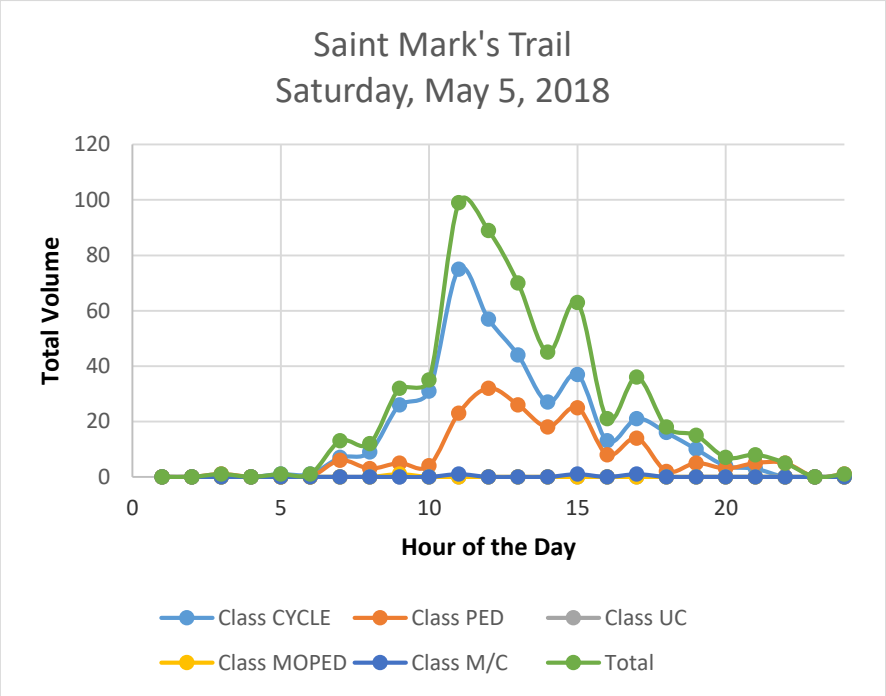
St. Marks Trail, Tallahassee, FL



Saint Mark's Trail
Performing as a Recreational Trail
but Commute Traffic Patterns Monday - Friday

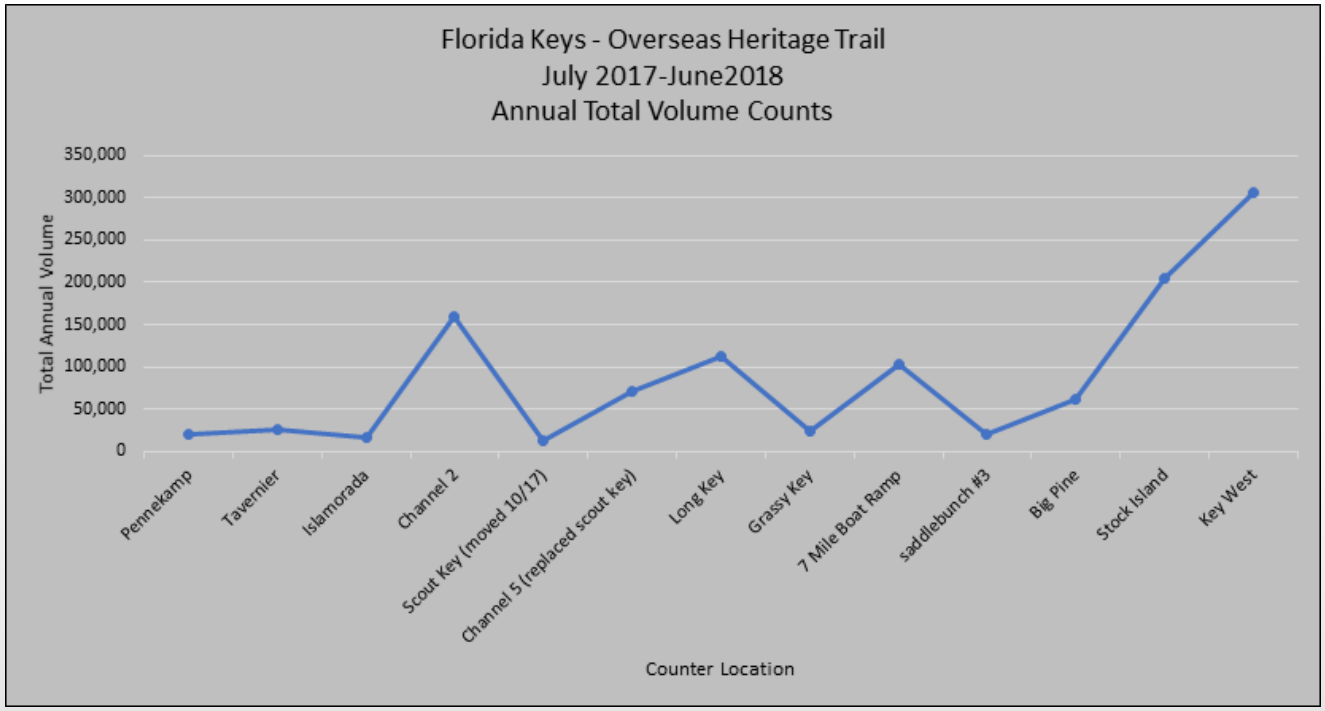
- May, 2018 Data for the Saint Mark's Trail shows how the trail is performing!
- Monday – Friday commuter traffic pattern
- Saturday – Sunday recreational traffic pattern
- Over 2 times the volume at the peak hour on weekend versus weekday





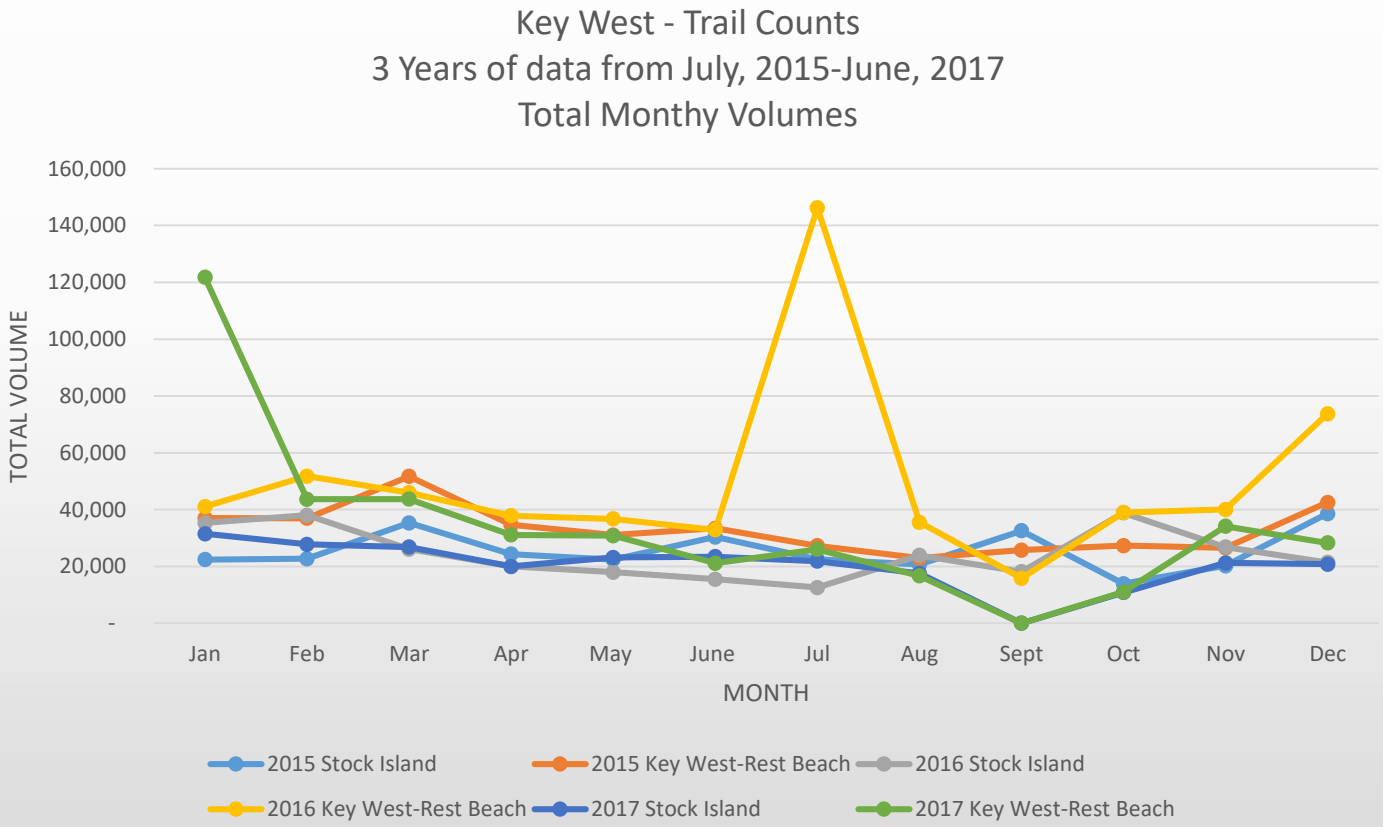
Overseas Heritage Trail, Key West, FL

City of Key West Data Annual Total Volume

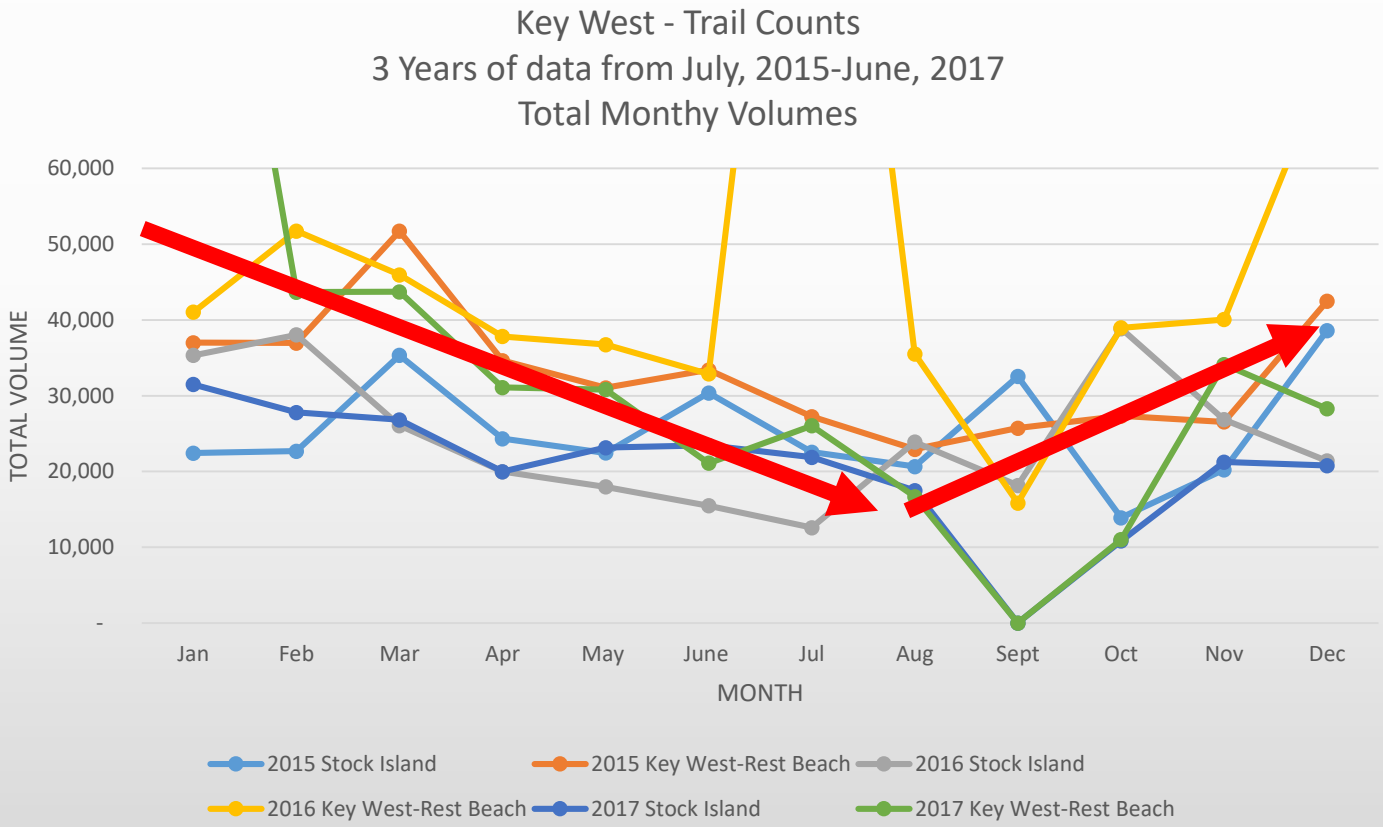


- 13 locations
- Maximum 300,000 annually in Key West location
- 5 locations over 100K!
- 1,139,497 ANNUAL TOTAL for all counting locations

Key West – 3 years of Data (2015-2017)



Key West Non-motorized Traffic Data Travel Trend



Current Status and Project Activities include…

- **CONTINUOUS DATA COLLECTION**
  - Preparing and Coordinating CCS installations
    - Work with Stakeholders
    - Purchase Equipment
    - MOU
- **SHORT-TERM LOANER PROGRAM**
  - MOU
  - Install Counters/Collect data
  - Analyze STC data
- **EXISTING DATA REPOSITORY**
  - Gathering existing data from Stakeholders
  - Analyzing data
- **STATEWIDE TRAINING & TECHNICAL ASSISTANCE**
  - Draft Report Results
  - Statewide Meeting
  - TransPlex 2019

Conclusions

- Participation is Welcome
- Training is available
- Non-motorized program is dynamic, will continue to grow over time, and FDOT is on it's way to being a leader among states collecting data

Questions

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  - FDOT TDA QA/QC Manager
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- Chris Francis, PhD.
  - VP of Data Analytics for Marlin Engineering Inc.
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