

STRAVA - DATA ACCESS AND USES

March 9, 2016

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Florida Dept. of Transportation

AGENDA

Training

- Accessing the Data
- Data Characteristics
- Potential Uses

Question and Answer

WHAT IS STRAVA?

Strava

- Wide coverage
- Segment of population

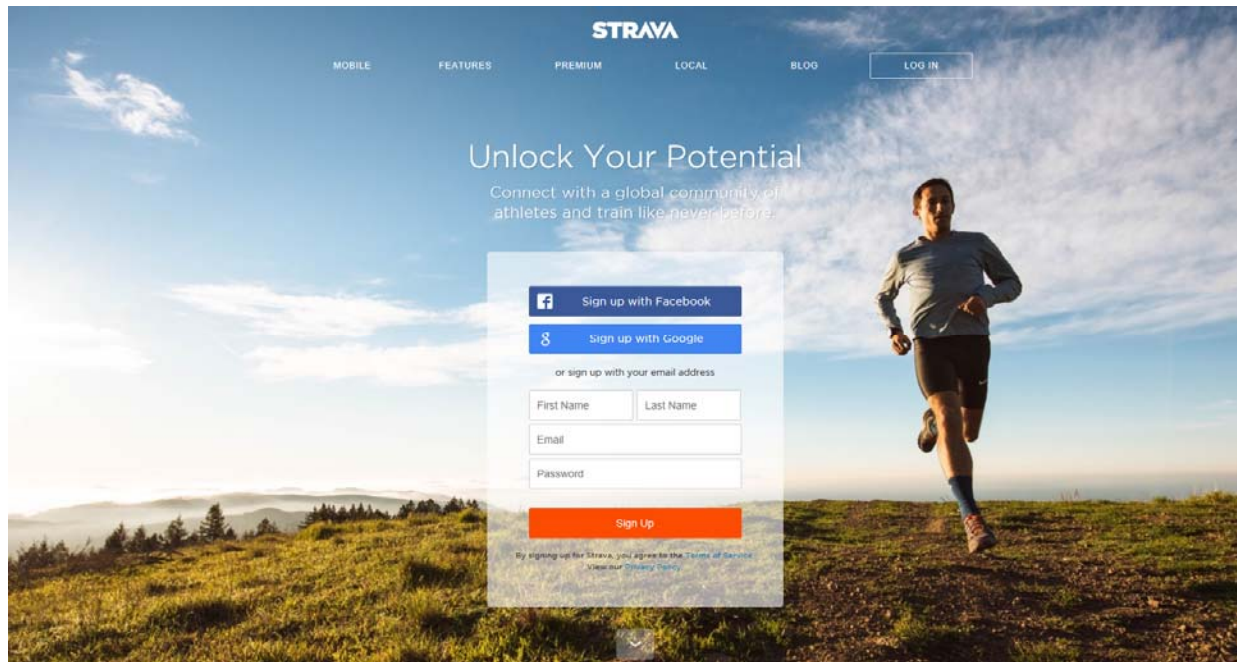
In Person Surveys

- Multi-site coverage
- Segment of population

Count Sites

- Narrow coverage
- Entire population

TARGET AUDIENCE



DATA ACCESS

Who

- Governments and their contractors

Where

- FDOT Unified Basemap Repository
 - FDOT Staff – <http://webapp01.dot.state.fl.us/unifiedbasemaprepository/>
 - Consultants / Contractors and Local Governments - <https://www3.dot.state.fl.us/unifiedbasemaprepository/>
- Strava Heat Map
 - <http://labs.strava.com/heatmap/>

EXTERNAL ACCESS TO REPOSITORY

Florida Department Of Transportation



Unified Basemap Repository

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Mission

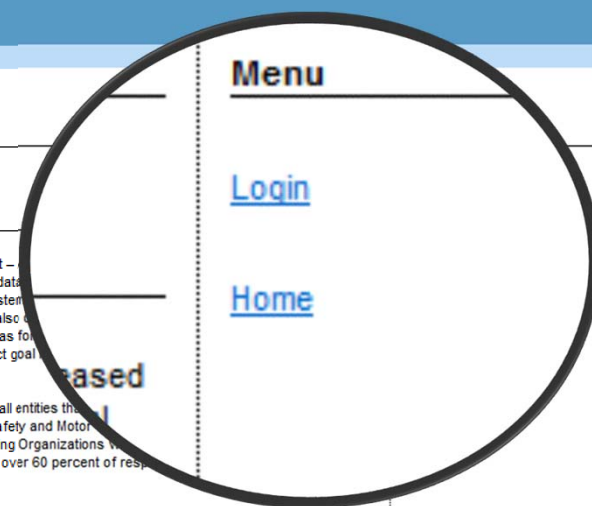
"To develop, deploy, and implement a unified base map resource that is seamless, universal, accessible, timely, and supportive of multiple member missions and visions."

History

The Florida Unified Roadway Basemap Initiative was conceived as a response to the 2005 SAFETEA-LU (Safe, Accountable, Flexible, and Efficient Transportation Equity Act) emphasis on the coordination and sharing of information to support safety analyses. The most critical requirement resulting in a need for a uniform foundation for consistent data roads and identify the 5 percent of the worst safety problems regardless of roadway ownership. Every jurisdiction and agency use independent Geographic Information Systems to locate and analyze crash data along with roadway location and feature data. Spatial data is key to understanding not only safety information such as crash mapping, but also roadway characteristics and environmental impacts. Therefore, the requirement for a unified approach to GIS data management to support transportation decision-making was formed by the Florida Traffic Records Coordinating Committee (TRCC). Since that time, the project has been renamed to the Florida Unified Roadway Basemap Initiative. However, the project goal is to create a comprehensive transportation network that could be used throughout the State, shared across jurisdictional boundaries, through multi-agency involvement and coordination.


In March 2007, a feasibility study of the Unified Roadway Basemap initiative was completed and presented to the TRCC. This study consisted of a comprehensive survey of all entities that use GIS in the State of Florida. The survey was conducted by the TRCC Basemap Initiative. A sample of the agencies receiving the survey included the Florida Department of Transportation, Florida Department of Health, Department of Highway Safety and Motor Vehicles, Florida Office of the State Courts Administrator, Florida Highway Patrol, and the Florida Office of Motor Carrier Compliance. All counties and large Metropolitan Planning Organizations were also surveyed. In addition, the GIS Task Team (subcommittee of TRCC) supplemented this list by recommending other entities to include on the recipient list. Results of the survey indicated that over 60 percent of respondents indicated that a comprehensive basemap would be extremely useful for their business processes.

Since the Feasibility study and extensive implementation planning, the TRCC has approved and purchased the licensed rights to all Florida Government the use of this data (please see license for more details).



CONTRACTOR ACCESS TO REPOSITORY

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By logging on to a FDOT system, you acknowledge your responsibility to comply with all laws, rules, directives, policies, and procedures related to the use and prohibited. You are hereby on notice that you should have no expectation of privacy as to your use of Department information technology resources as all data



Florida Dep:
Report Unified Basem:
Report Technical Problems to the Servi:
[Internet Privac](#)

CREATING A REPOSITORY ACCOUNT

Florida Department Of Transportation

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Subscriber Login

If your domain is not listed and you are a member of a Florida government entity, please contact the [UBR Admin](#)

Email Address: @ **ahca.myflorida.com**


Security Question: what is your mother's maiden name

Answer:

[Terms of Use](#) I have read and agree with the terms of use.

FDOT Resource Usage Notification

By logging on to a FDOT system, you acknowledge your responsibility for the use and security of information technology resources. Unauthorized use of information technology resources as all data is potentially subject to Florida's public records law.



Florida Department of Transportation
Report Unified Basemap Repository questions to [UBR Admin](#)
Report Technical Problems to the Service Desk @ 1-866-955-4357 (HELP) or email: [Service Desk](#)
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REPOSITORY ERROR MESSAGE

Florida Department Of Transportation



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Subscriber Login

Error: Your Subscriber Account is valid, but is not authorized for access to the Unified Basemap Repository web site.

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Menu

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Send an email to CO-UBRAAdmin@dot.state.fl.us to request authorization

LEGAL REQUIREMENTS

Data is proprietary

- Exempt from public records disclosure
- Working on public products

Accessing Data

- Requires accepting user agreement
- Data must come from FDOT

Metadata

Credits

- 'Data Licensed from Strava' (user license term 3.2)

DATA CHARACTERISTICS

Summaries (segment and intersection)

- Yearly
 - Total
 - Weekday / Weekend
- Monthly
 - Weekday / Weekend
- Seasonal
 - Weekday / Weekend

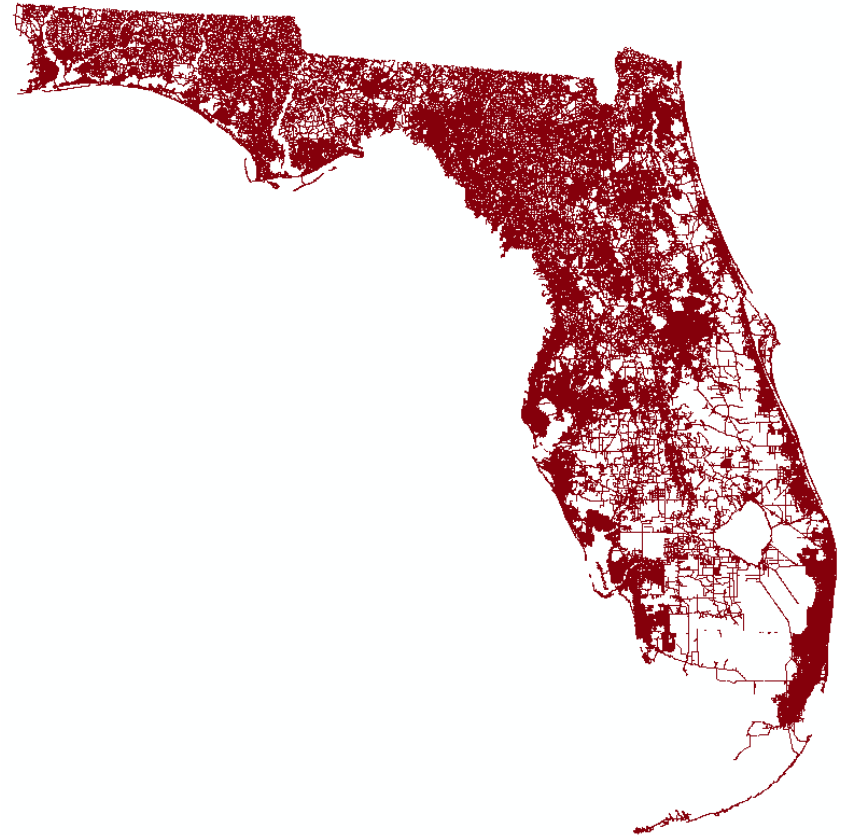
Raw Data (above + origin / destination)

- Minute scale for each segment and intersection
- Trip level for origin / destination

STREET NETWORK

HERE NAVSTREETS

- 1.7 million street segments for entire state
- Available through the UBR
- Attributes
 - Linked through LINK_ID (HERE) / ID (Strava) fields
 - Street Name / Alternate Street Names
 - Functional classification (not FDOT / FHWA)
 - Travel Direction
 - Speed Category
 - Urban / Rural
 - Divided / Undivided
- Licensed product

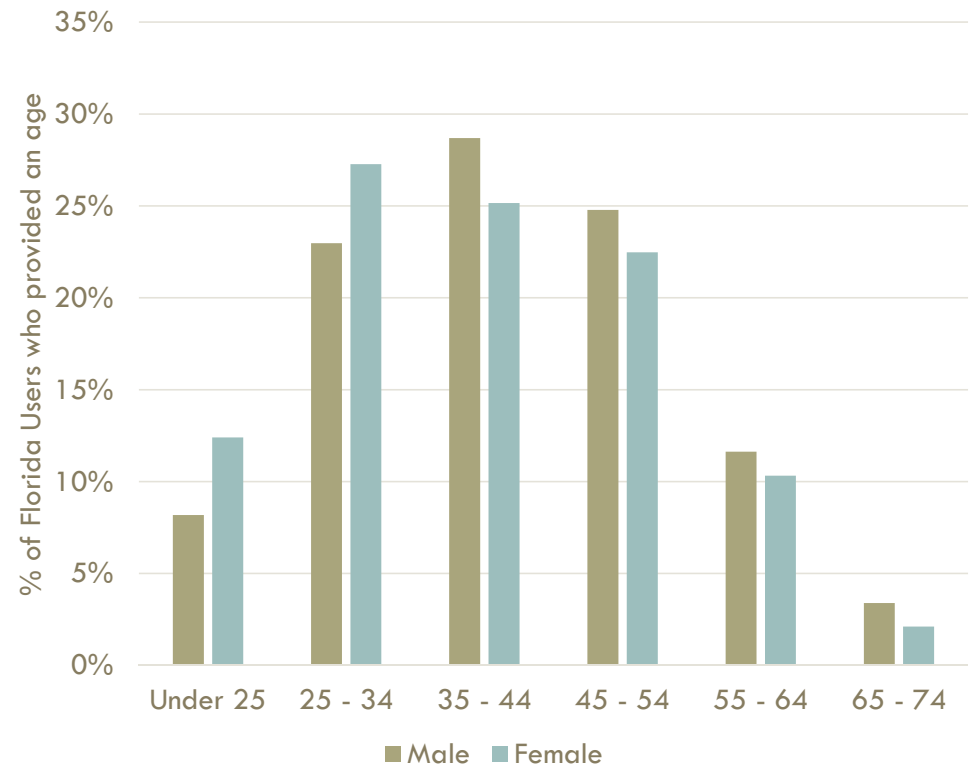


RIDE DATA CHARACTERISTICS — 2015

Ride

- 964,463 activities
- 14% Commute trips
- 19 mile median trip
- 1.5 hour median trip

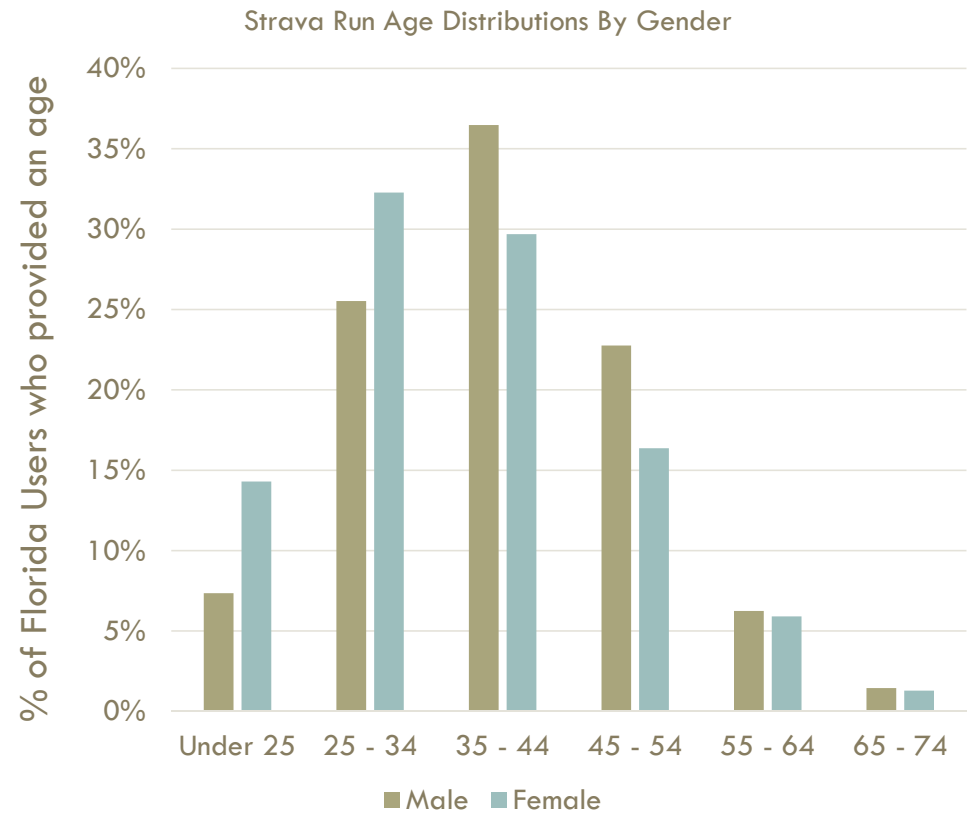
Strava Ride Age Distributions By Gender



RUN DATA CHARACTERISTICS – 2015

Run

- 507,388 activities
- 3.2 mile median trip
- 37 minute median trip



UNDERSTANDING THE FILE NAMES

Edge = Street Segment

Node = Intersection

Rollup = Summary

Season = 'On' Season

- Strava default is April 1 through October 1

Fl_edges_2015_ride_rollup_month_2015
_1_weekday = Ride summary for street
segments from January 1st to 31st 2015

DECODING THE FIELD NAMES

ATH = Athlete

ACT = Activities or Trips

R = Reverse the line digitized direction

A = With the line digitized direction

T = Total

CNT = Count

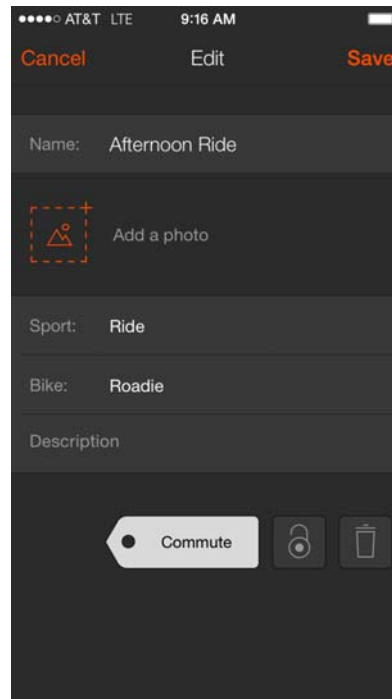
CMT = Commute

_0, _1, etc. = Time Period

TATHCNT = Total athlete count for
summary period

RACTCNT_1 = Total trip count for AM
peak (5 AM to 9:59 AM) for the
summary period for trips taken against
the street digitized direction

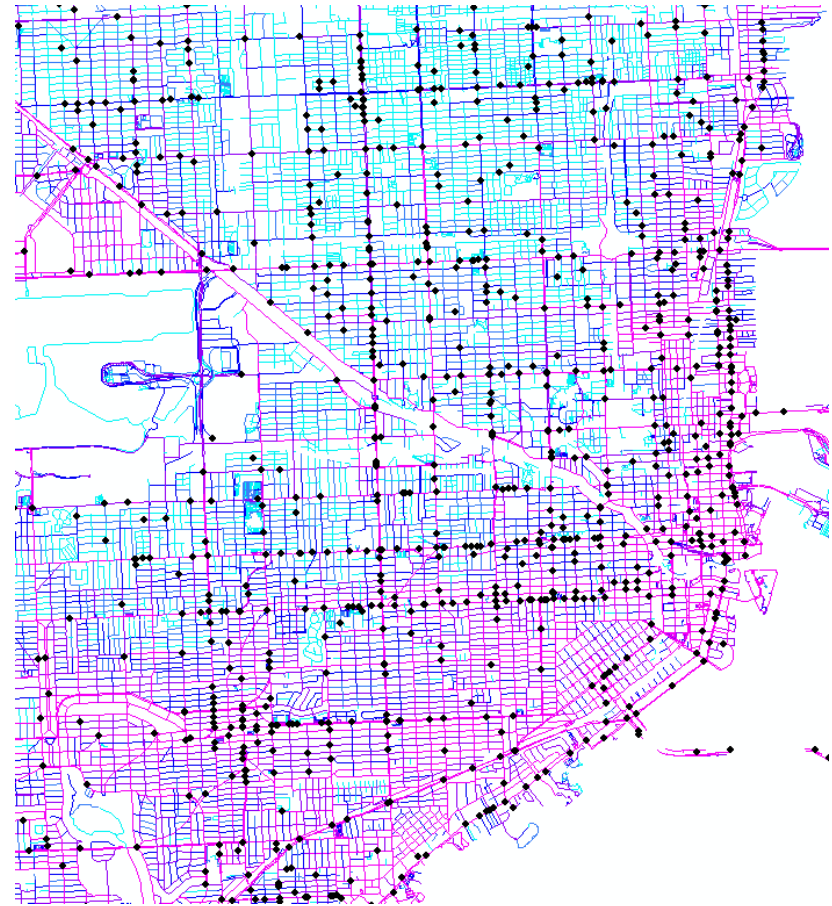
COMMUTE FLAG



BIKE VOLUME + CRASHES

Early stages of understanding

More work / research needed



SAMPLE DATA

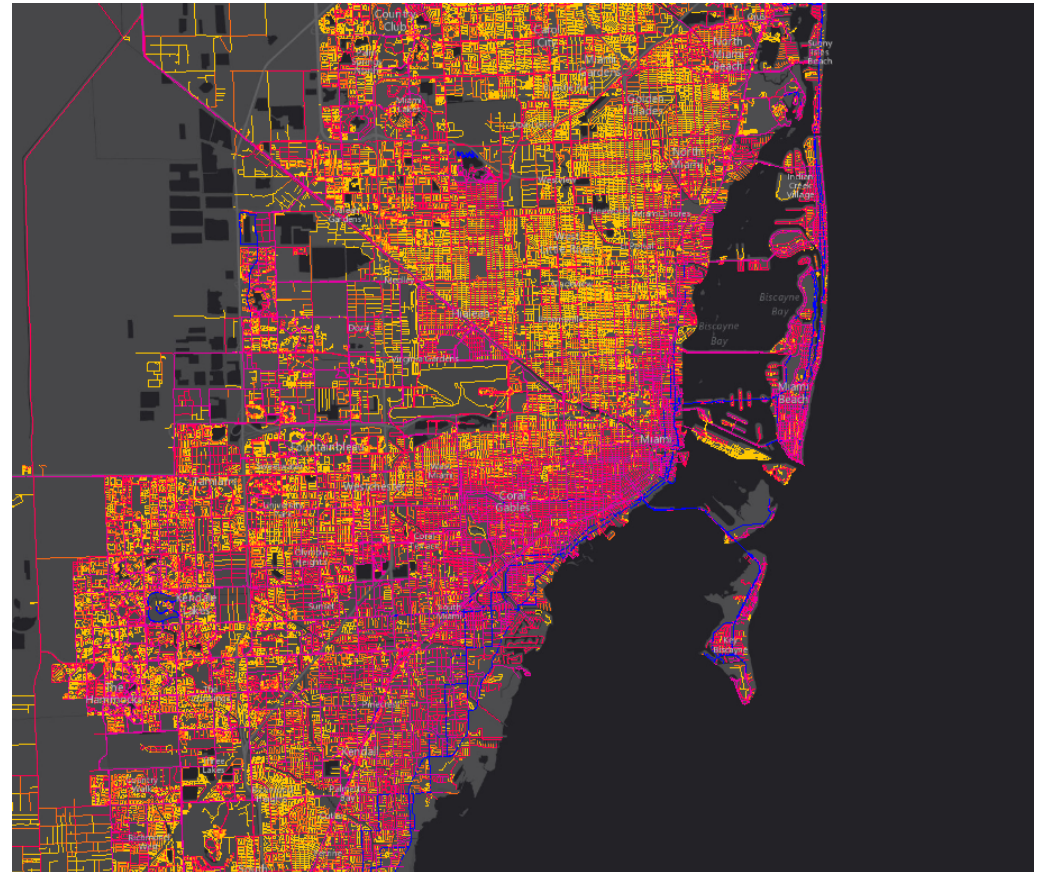
Dade County – Ride - 2014

Trips

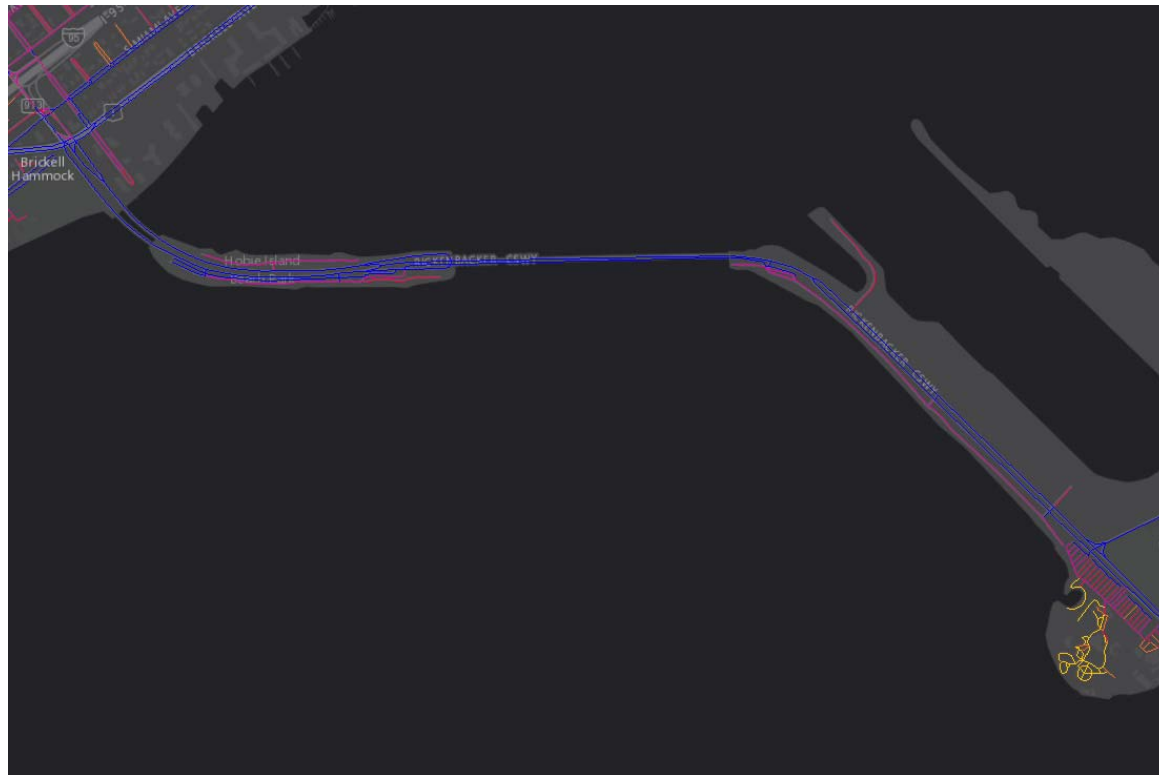
- 29,866,103 total trips on 166,000 segments
- Average 179 trips / segment
- Max 24,129 trips (Westbound Rickenbacker Causeway)

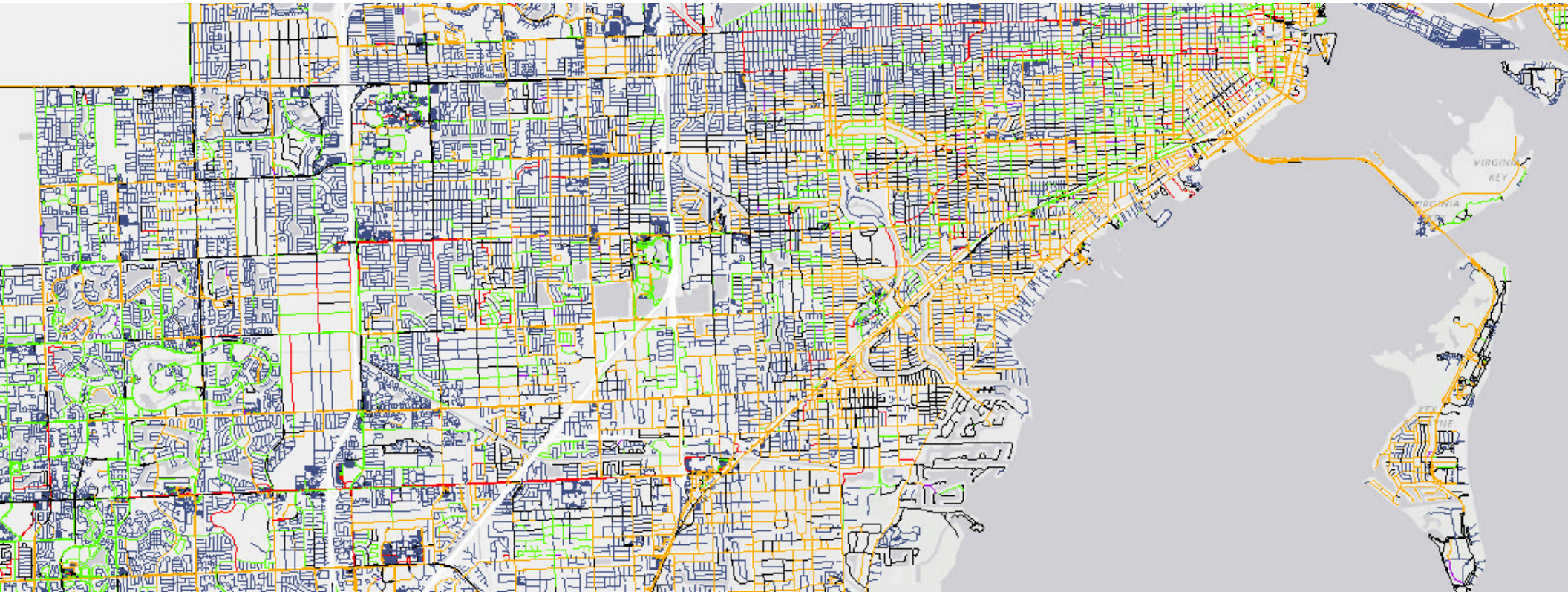
Users

- Average 44 users / segment
- Max 2,409 users (Westbound Rickenbacker Causeway)



RICKENBACKER CAUSEWAY





USE BY TIME OF DAY

AM Peak (5 AM to 10 AM)

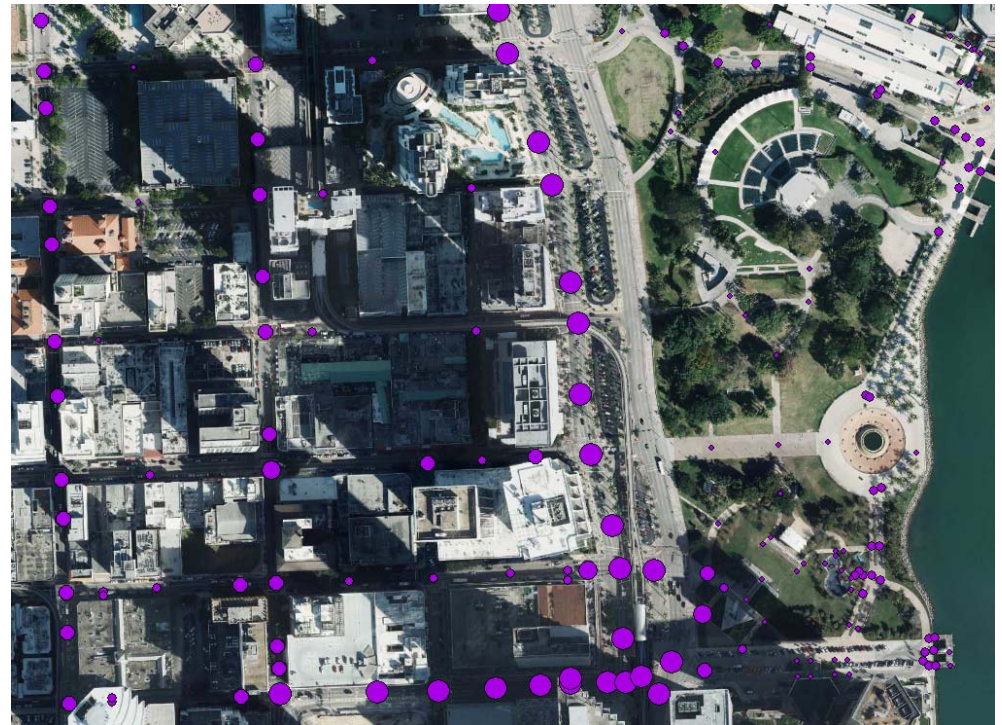
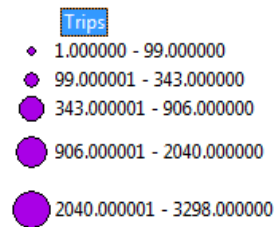
PM Peak (3 PM to 8 PM)

Late Night – (8 PM to Midnight)

INTERSECTION DATA

Counts

Time Spent at Intersection



ORIGIN / DESTINATION DATA

Morning Commute Trips to downtown Miami

Evening Commute Trips from downtown Miami

Data Characteristics:

Census Block Group

Record per trip

Origin Polygon

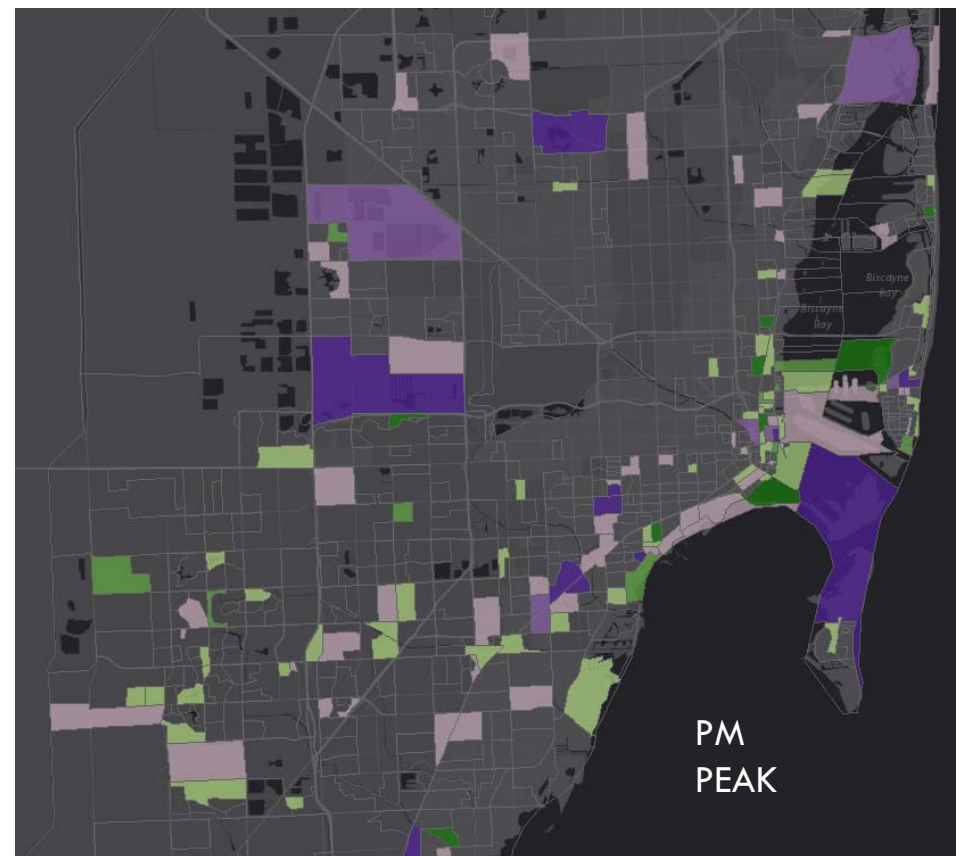
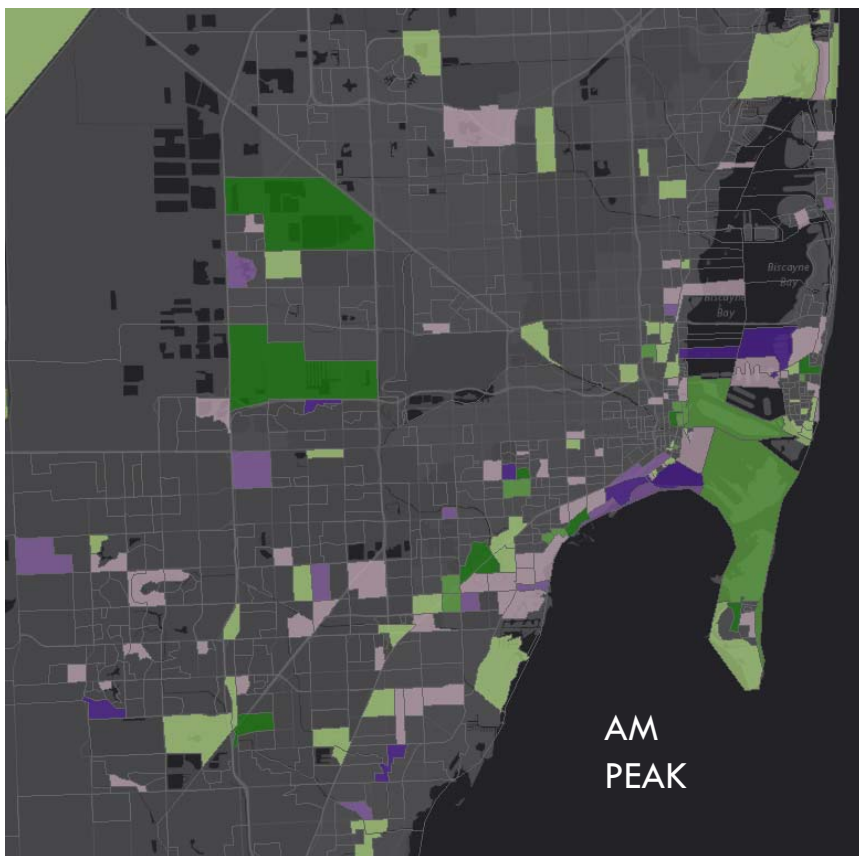
Destination Polygon

Polygon Path



ORIGIN / DESTINATION DATA

Negative Flow Positive Flow



DIGITIZED DIRECTION VS. TRAVEL DIRECTION

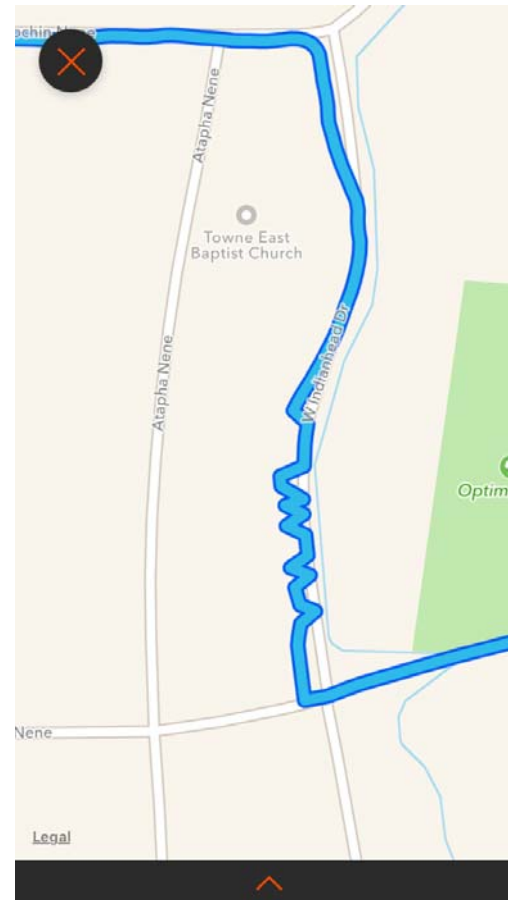


CELL SIGNAL QUALITY

Uses cell towers, not GPS

Location accuracy is not exact

Trees, buildings and hills can impact quality



USE CASES

Measuring relative bike volume

Estimating actual bike trips

- Data needs
- Limitations

Route choice

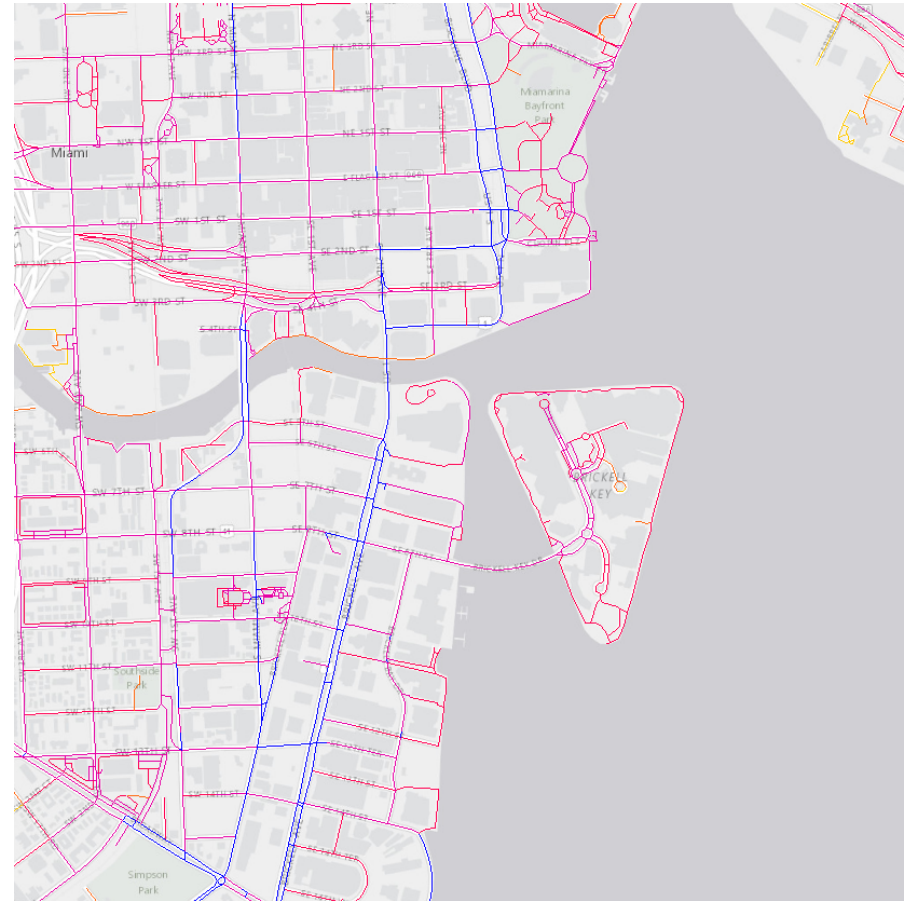
Route characteristics

Safety Analysis

TOTAL ACTIVITY COUNT

Fewer Trips

More Trips



ESTIMATING ACTUAL BIKE TRIPS

Data Needs

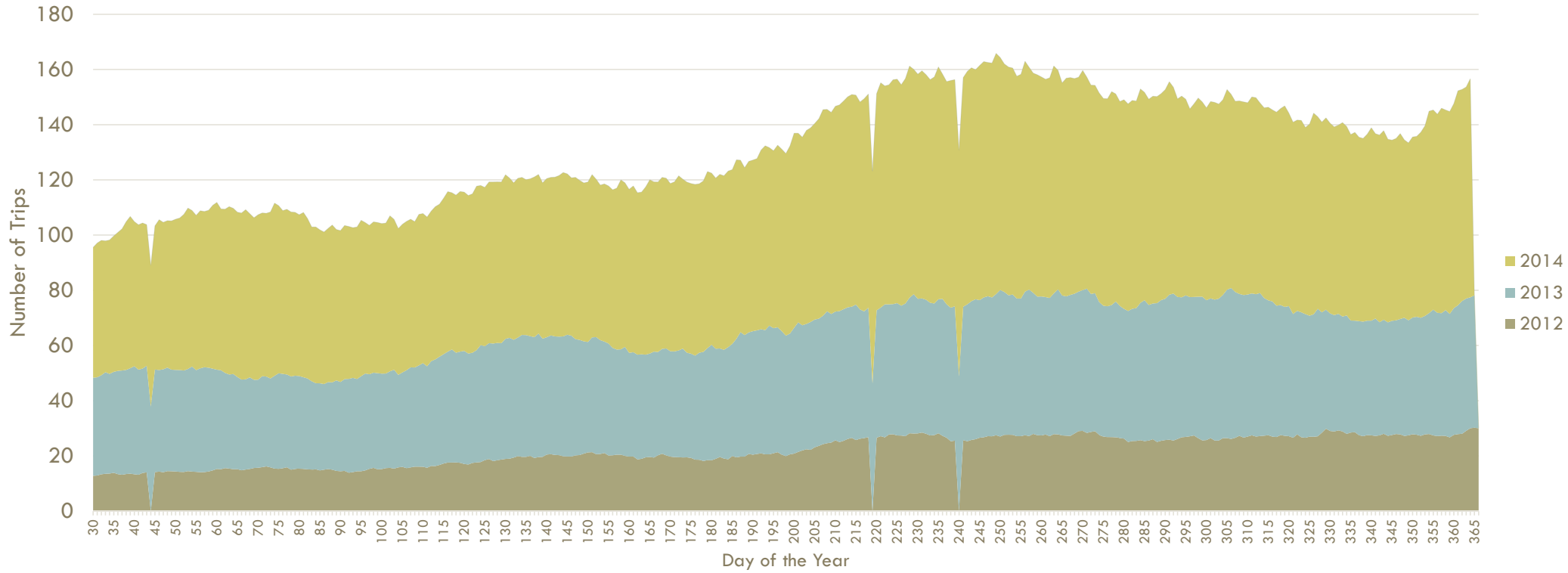
- Field Count
- Time Period
 - Time Scale
- Count Locations

Limitations

- Market growth
- Extrapolation
- Small sample size

Strava Bike Trips and Observed Bike Trips - District 4





STRAVA GROWTH

Counts for Westbound
Rickenbacker Causeway
~2.2 X growth from 2012 to 2013
~1.5 X growth from 2013 to 2014

DATA CLEANING AND LIMITATIONS

Cleaning

- Removed Trips on Limited Access Facilities
- Run Commutes

Limitations

- User base
- Cell signal quality

ACCESS TO PRIOR TRAININGS

Training from Strava (August 2015)

- [Overview \(Part 1\)](#)
- [Product Details \(Part 2\)](#)
- [Use Cases \(Part 3\)](#)

FDOT Training (November 2015)

- [Follow Up](#)

CONTACT INFO

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