



# Statewide Access Management and Transportation Site Impact

W E B I N A R   S E R I E S



# Statewide Access Management and Transportation Site Impact

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## Today's Webinar

**Multimodal Data Collection**

**Trip Generation and Updates for New ITE Edition**

Tuesday, February 16, 2021

2:00PM – 3:30 PM, EST

Credits: 1.5

# Webinar Staff



Gina  
Bonyani



Jenna  
Bowman



Santanu  
Roy



Jamie  
Krzeminski



Praba  
Prabakaran



Brian  
Waterman

# Agenda

How to Participate

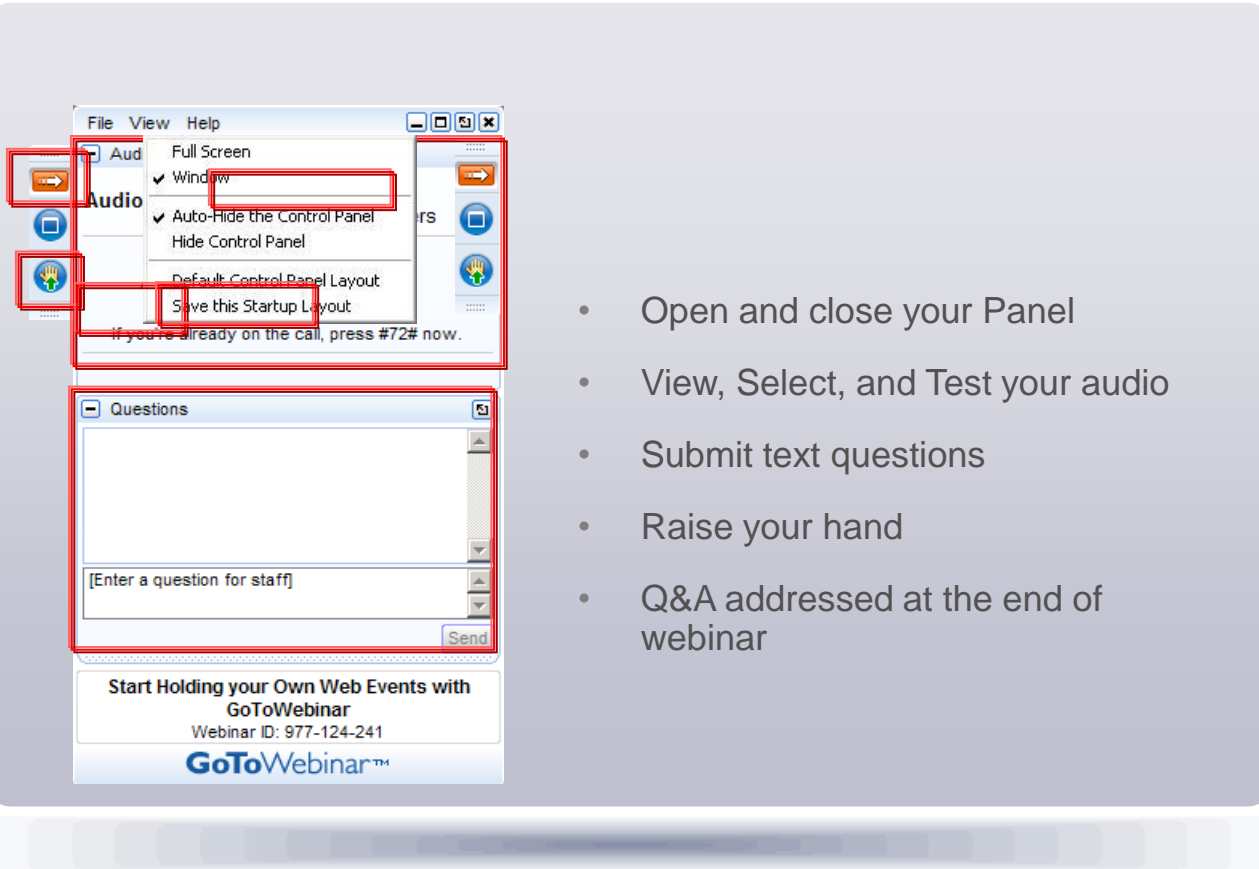
Credits and Webinar Material

Multimodal Data Collection

Questions

Contact Info

# How to Participate Today



The screenshot displays the GoToWebinar interface. The 'Audio' menu is open, showing options: 'Full Screen', 'Window' (checked), 'Auto-Hide the Control Panel', 'Hide Control Panel', 'Default Control Panel Layout', and 'Save this Startup Layout'. The 'Questions' panel is also visible, containing a text input field with the placeholder '[Enter a question for staff]' and a 'Send' button. Red boxes highlight the 'Audio' menu, the 'Window' option, the 'Questions' panel, and the 'Send' button. Below the interface, the text reads: 'Start Holding your Own Web Events with GoToWebinar', 'Webinar ID: 977-124-241', and the 'GoToWebinar™' logo.

- Open and close your Panel
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- Raise your hand
- Q&A addressed at the end of webinar

# Learning Curve

FDOT's Systems Implementation Office is utilizing the **Learning Curve** system for participant communications and management of the Statewide Access Management Quarterly Webinar.



# Credits Information

- Credits will be distributed four to **five** business days after the webinar, through [Learning Curve](#).
  - PDH's Credits, AICP Credits Information, and Course Certificates
- Your participation will be recorded by [GoToWebinar](#).
  - You will need to attend to the **entire webinar** with the **unique link** provided by GoToWebinar.



# Webinar Material

- Webinar materials will be sent via the **Learning Curve System**.
- Recorded webinars and presentation material will be posted on the Systems Implementation Office website:
  - [Training & Webinars](#)
    - Access Management







# Statewide Access Management and Transportation Site Impact

W E B I N A R   S E R I E S

**The FDOT Access Management and Transportation Site Impact  
Webinar Series 2020-2021 have been scheduled for the following  
dates:**

Tue, Aug, 18, 2020 | 2:00PM - 3:30PM EDT

Tue, Nov 17, 2020 | 2:00PM - 3:30PM EST

Tue, Feb 16, 2021 | 2:00PM - 3:30PM EST

**NEXT! Tue, May 18, 2021 | 2:00PM - 3:30PM EDT**

What  
organization do  
you represent?

FDOT

Local Government

Private Firm

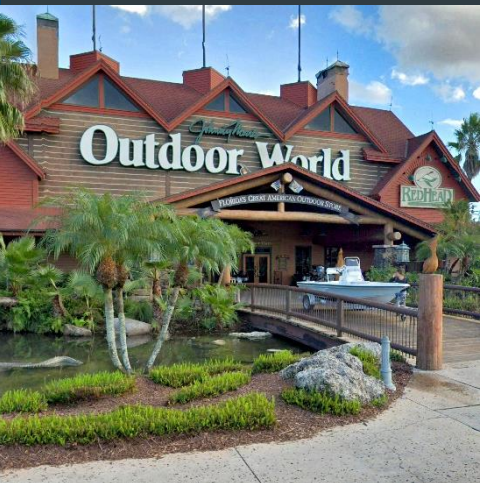
Other

How familiar are  
you with ITE  
Trip Generation  
Manual?

Very Familiar

Somewhat Familiar

Not Familiar



# TRIP GENERATION AND UPDATES FOR ITE NEW EDITION



## Multimodal Data Collection

February 16, 2021

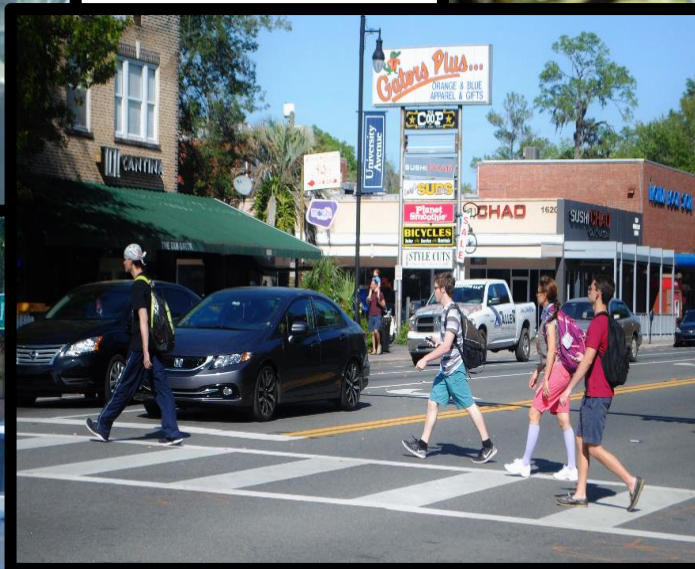
# AGENDA

- Welcome & Introductions
- Motivation
- Purpose
- ITE Trip Generation Manual & Handbook Review
- Multimodal Data Collection
- Multimodal Trip Generation Analysis Results
- Lessons Learned
- New Data Collection Methods





# MOTIVATION



# MOTIVATION

- Traditional site impact analysis is primarily focused on the vehicle trip generation analyses
- Understanding person trips is important to analyze demand for all modes & associated infrastructure needs
- *ITE Trip Generation Manual (10<sup>th</sup> Edition)* included person trip generation rates for some land uses & expanded the land use settings beyond Suburban land use
- Inclusion of person trips & land use settings for land use categories led to significant policy implications on how to provide infrastructure for non-motorized transportation
- Florida trip generation rates are generally different from the national trip generation rates reported in the *ITE Trip Generation Manual*





# PURPOSE

- FDOT Working Group was formed to promote the safe & efficient movement of non-motorized travelers through access management & site impact analysis
  - ▶ Multimodal site impact analysis
  - ▶ Multimodal access management
- Development of multimodal trip generation data collection
  - ▶ Pedestrian, bicycle, & transit trips
- Estimation of multimodal trip generation rates
  - ▶ Person trip rates
  - ▶ Pedestrian, bicycle, & transit trip rates



# ITE TRIP GENERATION MANUAL REVIEW

- ITE trip generation estimation (10<sup>th</sup> Edition)
  - ▶ Vehicle trip rates by land use settings
  - ▶ Person trip rates for certain land uses
- ITE trip generation land use setting types
  - ▶ Center City Core – Downtown & the surrounding areas
    - Similar to C6 (Urban Core) & C5 (Urban Center)
  - ▶ Dense Multi-Use Urban – Urban area with diverse land uses
    - Similar to C4 (Urban General) & C2T (Rural Town)
  - ▶ General Urban/Suburban – Area with homogeneous land uses
    - Similar to C3C & C3R (Suburban)
  - ▶ Rural – Undeveloped area with scattered parcels
    - Similar to C2 (Rural) & C1 (Natural)
- Methodology to convert estimated vehicle trips to person trips, & person trips by mode for urban sites



# DATA COLLECTION LAND USES

- Urban Supermarket (*Center City Core*)
  - ▶ ITE land use code 850
  - ▶ Publix, Winn-Dixie, Fresh Market, Trader Joe's, Sprouts
- Pedestrian Variety Store (*Dense Multi-Use Urban Areas*)
  - ▶ ITE land use code 814
  - ▶ Dollar General, Dollar Tree, Family Dollar
- Sporting Goods Superstore (*General Urban/Suburban*)
  - ▶ ITE land use code 861
  - ▶ DICK's Sporting Goods, Academy Sports+Outdoors, Bass Pro Shops
- ALDI Grocery Store (*General Urban/Suburban*)
  - ▶ ITE land use code 850



# LAND USE SELECTION

- Urban Supermarket person or vehicle trip generation rates are not provided for the Center City Core land use setting in the *ITE Trip Generation Manual*
- Person trip generation rates are not provided for Pedestrian Variety Store & the Sporting Goods Superstore, for any land use settings in the *ITE Trip Generation Manual*
- The Pedestrian Variety Store vehicle trip generation rates are only included for the General Urban/Suburban land use setting in the *ITE Trip Generation Manual*
- ALDI supermarket characteristics are different than the other supermarkets



# INITIAL DATA COLLECTION SITES

Sites	Total *	Shared Access Sites	Isolated Stand-Alone Sites
Urban Supermarkets	10	7	3
Pedestrian Variety Stores	16	8	8
Sporting Goods Superstores	15	14	1
ALDI Grocery Stores	18	3	15
<b>Total</b>	<b>59</b>	<b>32</b>	<b>27</b>

\* ITE requires minimum of three sites, preferably five or more sites



# SELECTED DATA COLLECTION SITES

Sites	Number of Sites
Urban Supermarkets	4
Pedestrian Variety Stores	6
Sporting Goods Superstores	5
ALDI Grocery Stores	5
<b>Total</b>	<b>20</b>

- Site profiles are developed for the identified sites



# DATA COLLECTION SITES

## Urban Supermarkets

1. Publix, 601 S Andrews Avenue, Fort Lauderdale
2. Publix, 375 S Rosemary Avenue, West Palm Beach
3. Publix, 250 3rd Street S., St. Petersburg
4. Publix, 725 1st Avenue S., St. Petersburg

## Pedestrian Variety Stores

5. Dollar Tree, 968 SW 8th Street, Miami
6. Family Dollar, 4700 Broadway Ave., West Palm Beach
7. Family Dollar, 1720 16th St N., St. Petersburg
8. Family Dollar, 918 W Colonial Drive, Orlando
9. Family Dollar, 250 W State Road 434 Winter Springs
10. Family Dollar, 806 East Forest Avenue, Tampa

## Sporting Goods Superstores

11. Dick's Sporting Goods, 8921 W Atlantic Blvd., Coral Springs
12. Dick's Sporting Goods, 4977 S Cleveland Avenue, Fort Myers
13. Academy Sports, 621 Centerview Blvd., Kissimmee
14. Dick's Sporting Goods, 1100 N Alafaya Trail, Orlando
15. Hibbett Sports, 3630 SW Archer Road, Gainesville

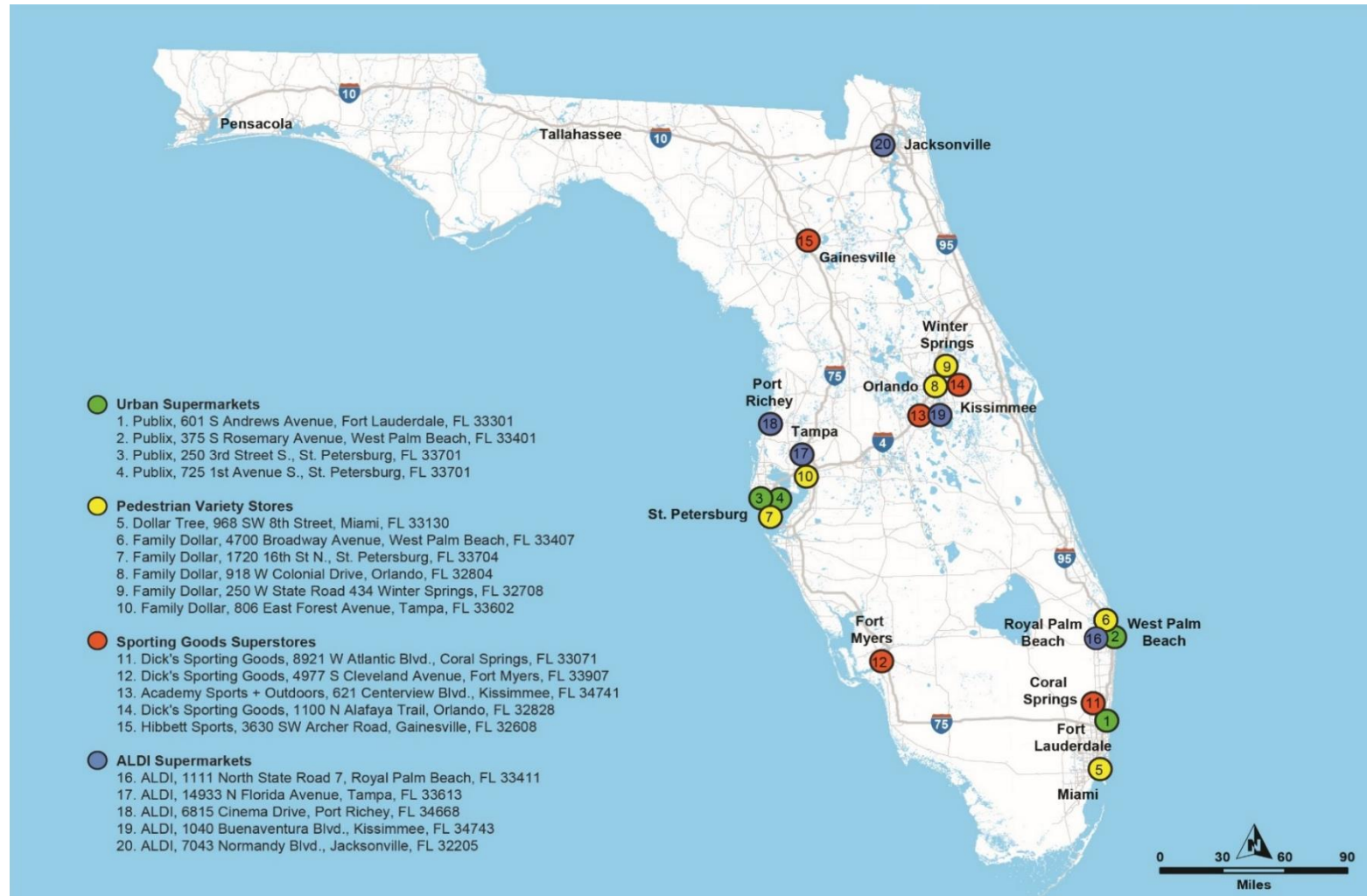
## ALDI Supermarkets

16. ALDI, 1111 North State Road 7, Royal Palm Beach
17. ALDI, 14933 N Florida Avenue, Tampa
18. ALDI, 6815 Cinema Drive, Port Richey
19. ALDI, 1040 Buenaventura Blvd., Kissimmee
20. ALDI, 7043 Normandy Blvd., Jacksonville





# SITE LOCATIONS



# SITE PROPERTY OWNER COORDINATION

- Obtaining property owner pre-approval
  - ▶ To install video cameras at the store entrances
  - ▶ To perform customer intercept surveys
- FDOT authorization letter to be on-site
- Property owners were not willing to give written permission
  - ▶ Concerns about competitors obtaining the business information & customer data
  - ▶ Customer privacy issues
  - ▶ Inconvenience to the customers
  - ▶ Liability concerns
- Most on-site store managers allowed the survey crew to collect the person trip data using vehicle mounted video cameras



# FDOT LETTER



## *Florida Department of Transportation*

RON DESANTIS  
GOVERNOR

605 Suwannee Street  
Tallahassee, Florida 32399

KEVIN J. THIBAUT, P.E.  
SECRETARY

January 9, 2020

**SUBJECT: TRIP GENERATION DATA COLLECTION**

To Whom It May Concern,

The Florida Department of Transportation is conducting a trip generation study of businesses in urban environments to better understand the number of trips generated by these businesses and the travel mode used (personal automobile, walking, biking, or public transportation). The findings of this study will be used to help plan for transportation facilities to serve your customers and employees. As part of this study, the number of people entering and exiting the selected stores will be counted and an intercept survey will be conducted. The customer intercept survey will only ask questions about the travel mode (car, bus, bicycle, or walking) of the trip and should take less than one minute to complete. If interested, you may add additional questions to the travel mode survey. The results of the survey will be provided to you and kept confidential.

This letter is to serve as verification that CTS Engineering, Inc. has been retained and is authorized to conduct data collection at your business(es) on behalf of the Florida Department of Transportation. If you have any questions, you may contact me at (850) 414-4909 or by e-mail at [jenna.bowman@dot.state.fl.us](mailto:jenna.bowman@dot.state.fl.us).

Sincerely,

Jenna M. Bowman, PE  
Systems Management Administrator  
Systems Implementation Office  
Florida Department of Transportation  
605 Suwannee Street, MS 19, Burns Building  
Tallahassee, FL 32399-0450  
Phone: 850-414-4909  
[jenna.bowman@dot.state.fl.us](mailto:jenna.bowman@dot.state.fl.us)



# DATA COLLECTION SCHEDULE

Sites	Address	Dates
Publix	601 S Andrews Avenue, Fort Lauderdale, FL 33301	1/28/2020
Publix	375 S Rosemary Avenue, West Palm Beach, FL 33401	2/5/2020
Publix	250 3rd Street S., St. Petersburg, FL 33701	2/18/2020
Publix	725 1st Avenue S., St. Petersburg, FL 33701	2/19/2020
Dollar Tree	968 SW 8th Street, Miami, FL 33130	1/23/2020
Family Dollar	4700 Broadway Avenue, West Palm Beach, FL 33407	2/4/2020
Family Dollar	1720 16th St N., St. Petersburg, FL 33704	2/20/2020
Family Dollar	918 W Colonial Drive, Orlando, FL 32804	3/11/2020
Family Dollar	250 W State Road 434 Winter Springs, FL 32708	3/12/2020
Family Dollar	806 East Forest Avenue, Tampa, FL 33602	2/27/2020
Academy Sports + Outdoors	621 Centerview Blvd., Kissimmee, FL 34741	3/3/2020
Dick's Sporting Goods	8921 W Atlantic Blvd., Coral Springs, FL 33071	1/30/2020
Dick's Sporting Goods	4977 S Cleveland Avenue, Fort Myers, FL 33907	2/11/2020
Dick's Sporting Goods	1100 N Alafaya Trail, Orlando, FL 32828	3/10/2020
Hibbett Sports	3630 SW Archer Road, Gainesville, FL 32608	3/10/2020
ALDI	1111 North State Road 7, Royal Palm Beach, FL 33411	3/11/2020
ALDI	6815 Cinema Drive, Port Richey, FL 34668	2/25/2020
ALDI	1040 Buenaventura Blvd., Kissimmee, FL 34743	3/4/2020
ALDI	7043 Normandy Blvd., Jacksonville, FL 32205	3/12/2020
ALDI	14933 N Florida Avenue, Tampa, FL 33613	2/26/2020



# PERSON TRIP DATA COLLECTION SETUP

- Data collection was planned for all hours stores were open
- Acquired near-the-entrance parking spaces for vehicle mounted video recording setup
- Installed the cameras in front of the stores or at a location that allowed seeing customers entering/exiting
- Two cameras were installed to record each business entrance to allow back up files
- A technician was available at the site to troubleshoot the camera equipment in the field



# CUSTOMER INTERCEPT SURVEY SETUP

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- The survey interview was planned to take less than one minute to complete
- Placed the survey crew in strategic locations in proximity to or adjacent to store entrances
- Two surveyors were assigned to each store entrance
- Additional backup staff were provided to relieve the survey crew



# DATA COLLECTION

- Store Characteristics
  - ▶ Gross floor area (GFA)
  - ▶ Obtained from the property appraiser websites
- Total number of persons entering/leaving the store
  - ▶ Person trips by direction
  - ▶ During weekday store hours - counts in 15-minute periods
  - ▶ Using vehicle mounted video camera
  - ▶ Manually extracted from the video recordings
- Store customer intercept survey – Two questions
  - ▶ Travel mode – by vehicle, walking, bicycle, or transit
  - ▶ Vehicle occupancy for auto mode – total number of people per vehicle





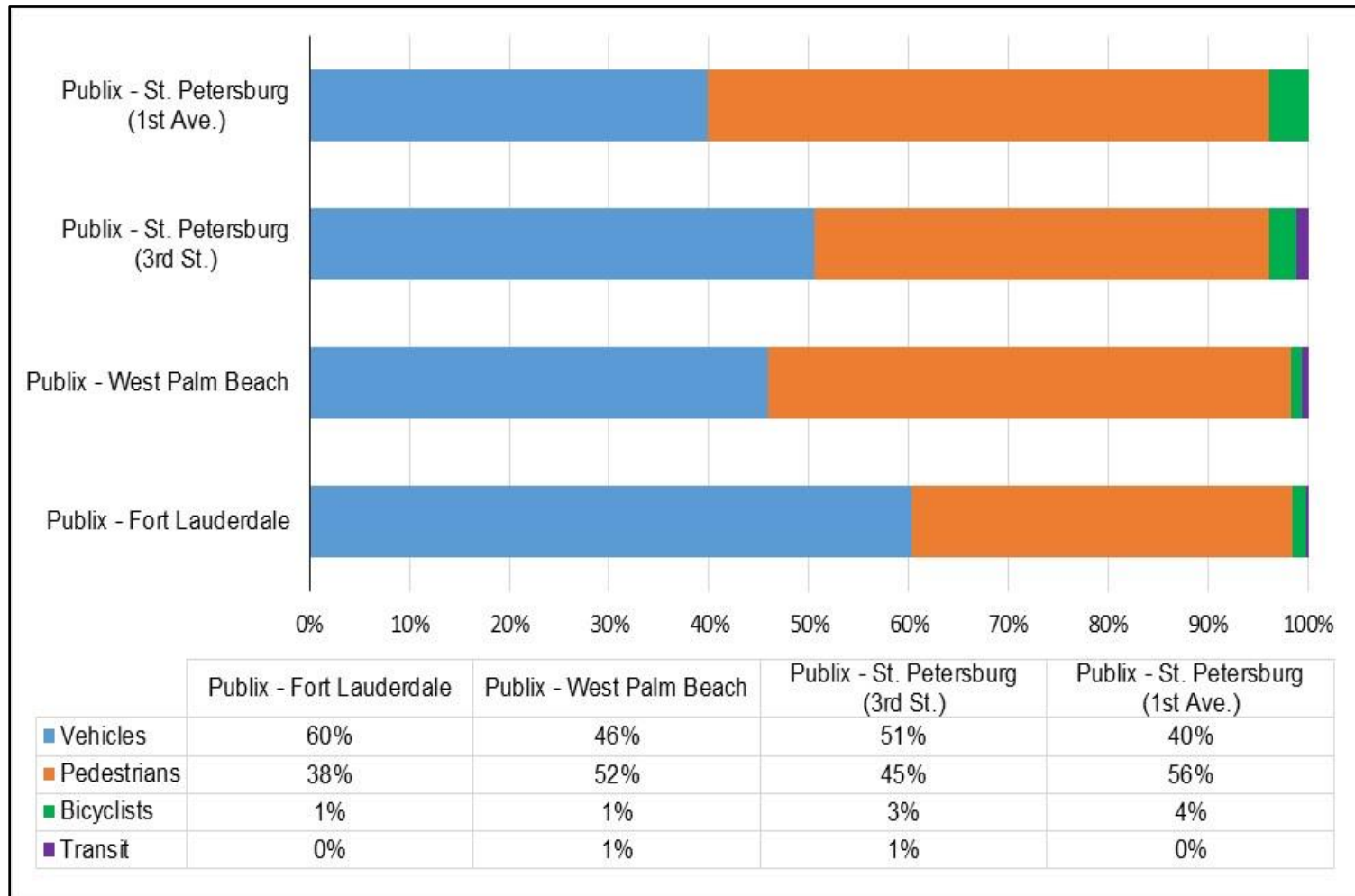
# DATA ANALYSIS

- Estimation of person trip mode choice
  - ▶ Using the customer intercept survey data
- Estimation of vehicle occupancy factors
  - ▶ Using the customer intercept survey data
- Estimation of person trip generation rates
  - ▶ Using the person trip data collection
  - ▶ Based on Gross Floor Area (GFA)
- Estimation of vehicle trip generation rates
  - ▶ Using the person trip data collection
  - ▶ Applying vehicle occupancy factors & vehicle mode share percentage
- Estimation of pedestrian, bicycle, & transit trip generation rates
  - ▶ Using the person trip data collection
  - ▶ Applying pedestrian, bicycle, & transit mode share percentages



# URBAN SUPERMARKARKETS DAILY TRIPS MODE CHOICE

(Center City Core Land Use Setting)



# URBAN SUPERMARKETS PERSON TRIPS WEIGHTED AVERAGE MODE CHOICE

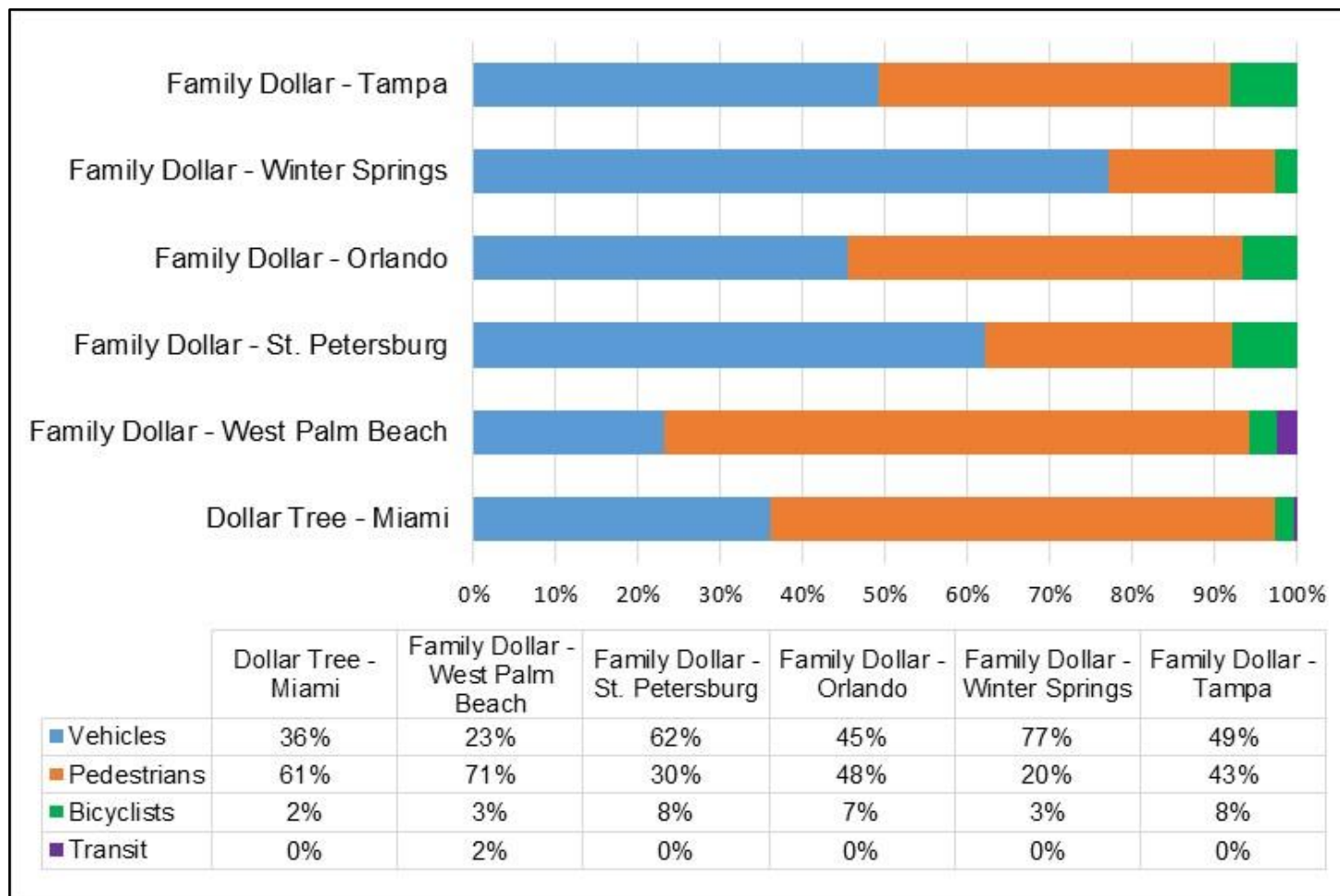
## Center City Core Land Use Setting

Multimodal Trips (Center City Core Setting)	Daily	Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Vehicle Trips	50%	55%	55%	51%	50%
Pedestrian Trips	47%	42%	43%	46%	48%
Bicycle Trips	2%	2%	2%	2%	2%
Transit Trips	1%	1%	0%	1%	0%



# PEDESTRIAN VARIETY STORES DAILY TRIPS

## MODE CHOICE (Dense Multi-Use Urban Land Use Setting)



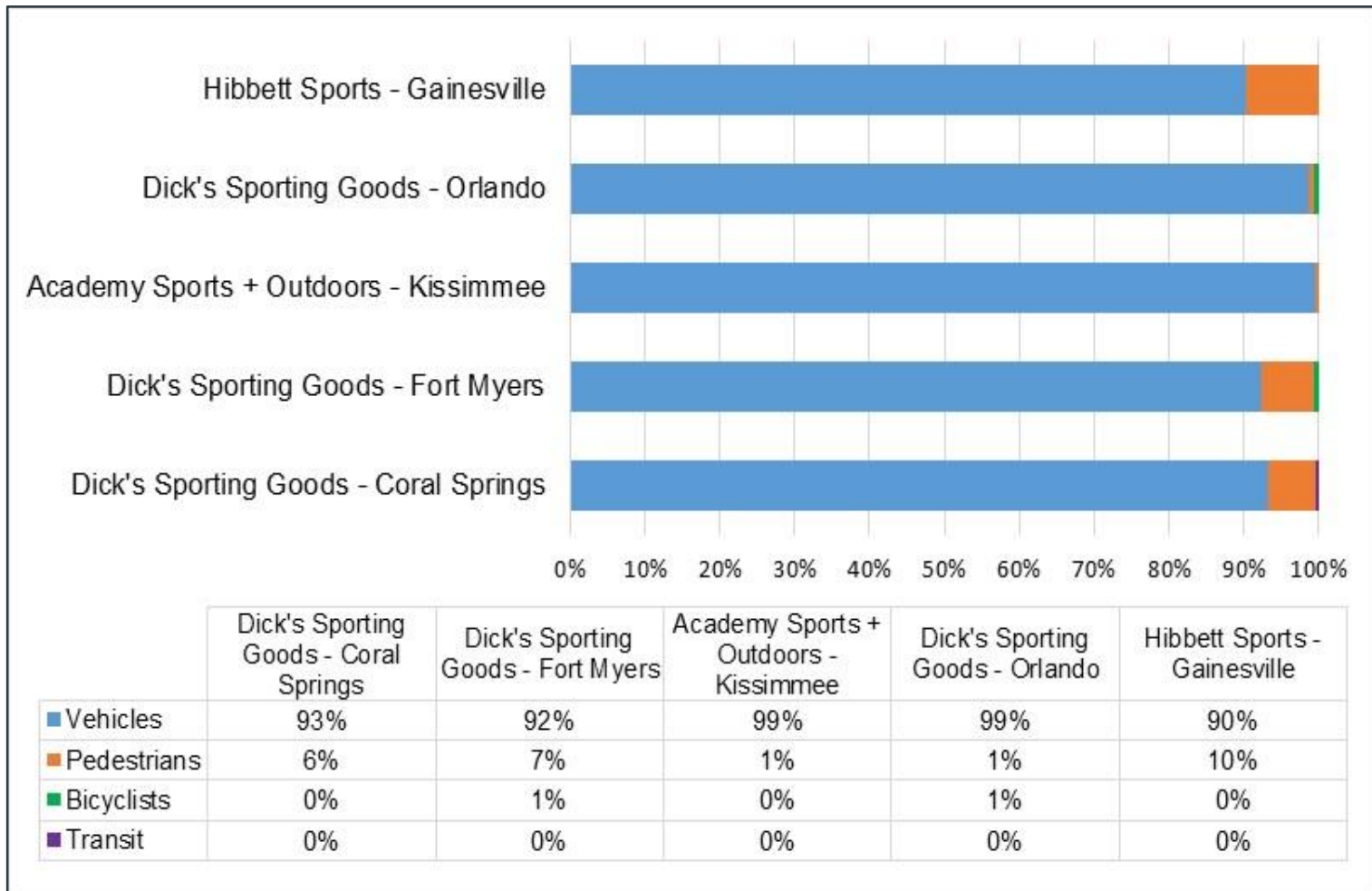
# PEDESTRIAN VARIETY STORES PERSON TRIPS WEIGHTED AVERAGE MODE CHOICE

## Dense Multi-Use Urban Land Use Setting

Multimodal Trips (Dense Multi-Use Urban Setting)	Daily	Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Vehicle Trips	47%	42%	46%	43%	49%
Pedestrian Trips	48%	54%	49%	51%	47%
Bicycle Trips	5%	4%	5%	5%	4%
Transit Trips	0%	0%	0%	1%	0%



# SPORTING GOODS SUPERSTORES DAILY TRIPS MODE CHOICE (Suburban Land Use Setting)



# SPORTING GOODS SUPERSTORES PERSON TRIPS WEIGHTED AVERAGE MODE CHOICE

## Suburban Land Use Setting

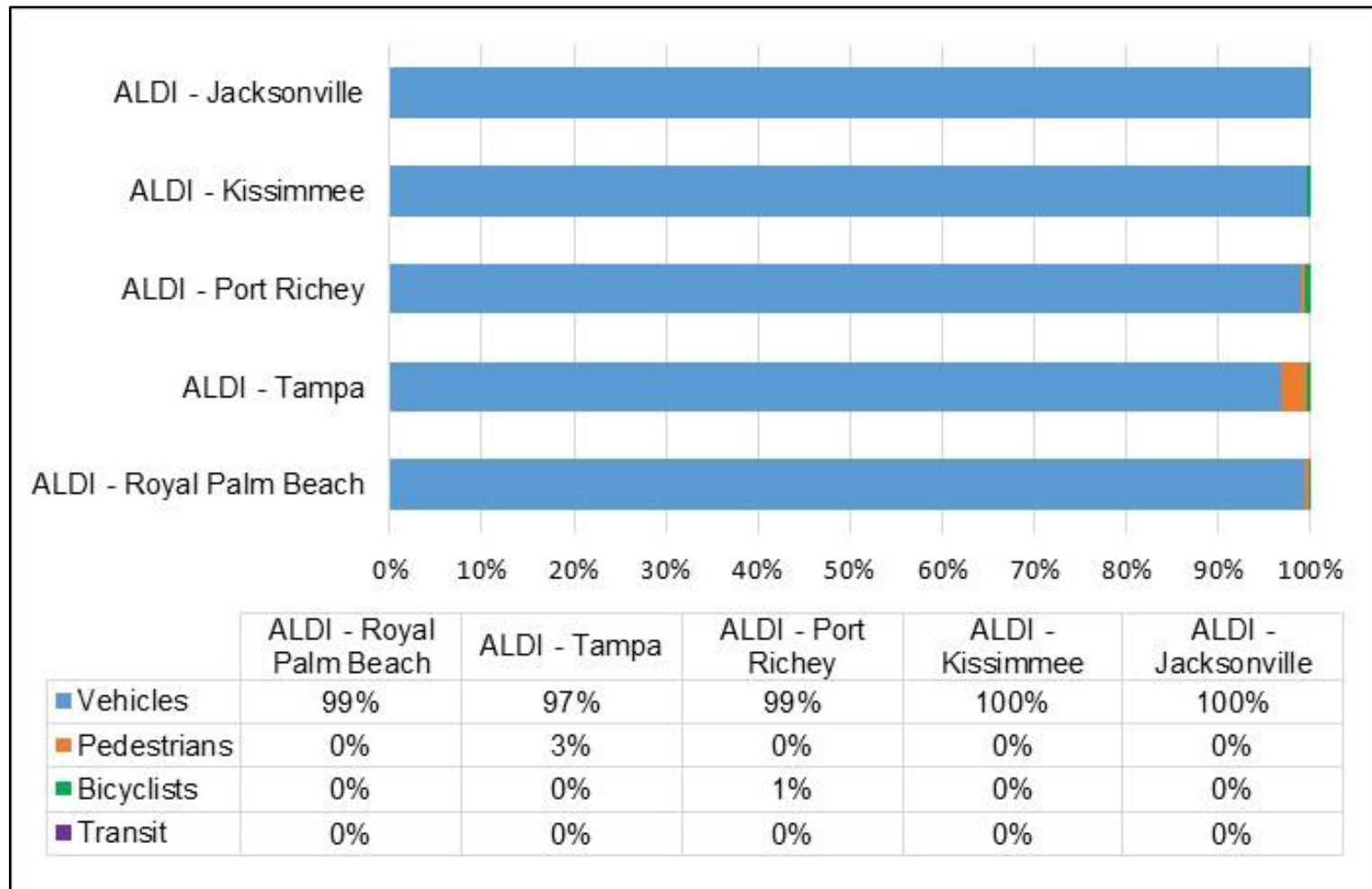
Multimodal Trips (General Urban/Suburban Setting)	Daily	*Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Vehicle Trips	96%	NA	96%	94%	97%
Pedestrian Trips	4%	NA	4%	5%	3%
Bicycle Trips	0%	NA	0%	1%	0%
Transit Trips	0%	NA	0%	0%	0%

\*Store opens after the adjacent street AM peak hour.





# ALDI SUPERMARKET DAILY TRIPS MODE CHOICE (Suburban Land Use Setting)



# ALDI SUPERMARKET PERSON TRIPS WEIGHTED AVERAGE MODE CHOICE

## Suburban Land Use Setting

Multimodal Trips (General Urban/Suburban Setting)	Daily	*Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Vehicle Trips	99%	NA	100%	100%	99%
Pedestrian Trips	1%	NA	0%	0%	1%
Bicycle Trips	0%	NA	0%	0%	0%
Transit Trips	0%	NA	0%	0%	0%

\*Store opens after the adjacent street AM peak hour.



# TRIP GENERATION ANALYSIS

- Consistent with ITE trip generation manual methodology
  - ▶ Multiple sites data collection
  - ▶ Independent variable - Gross Floor Area (GFA)
  - ▶ Weighted average trip generation rates
  - ▶ Directional distribution - % entering, % exiting
- Consistent with ITE trip generation rates time periods
  - ▶ Weekday
  - ▶ AM & PM peak hours
    - ▶ Adjacent street peak hour & peak hour of the generator



# URBAN SUPERMARKETS WEIGHTED AVERAGE TRIP RATES PER 1,000 SF GFA

## Center City Core Land Use Setting

Multimodal Trips (Center City Core Setting)	Daily	Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Person Trips	229.43	9.77	19.65	18.84	23.54
Vehicle Trips	99.35	5.05	8.80	8.42	9.67
Pedestrian Trips	108.69	4.10	8.49	8.73	11.24
Bicycle Trips	4.95	0.20	0.45	0.44	0.49
Transit Trips	1.40	0.10	0.10	0.18	0.10



# PEDESTRIAN VARIETY STORES WEIGHTED AVERAGE TRIP RATES PER 1,000 SF GFA

## Dense Multi-Use Urban Land Use Setting

Multimodal Trips (Dense Multi-Use Urban Setting)	Daily	Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Person Trips	156.13	5.68	15.52	12.09	17.56
Vehicle Trips	53.60	1.85	4.68	4.06	6.04
Pedestrian Trips	74.89	3.09	7.66	6.16	8.25
Bicycle Trips	7.30	0.21	0.74	0.57	0.77
Transit Trips	0.72	0.00	0.03	0.10	0.05



# SPORTING GOODS SUPERSTORES WEIGHTED AVERAGE TRIP RATES PER 1,000 SF GFA

## Suburban Land Use Setting

Multimodal Trips (General Urban/Suburban Setting)	Daily	*Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Person Trips	27.72	NA	3.01	2.41	3.54
Vehicle Trips	18.04	NA	1.83	1.80	2.23
Pedestrian Trips	1.02	NA	0.12	0.12	0.11
Bicycle Trips	0.06	NA	0.01	0.02	0.00
Transit Trips	0.03	NA	0.01	0.00	0.01

\*Store opens after the adjacent street AM peak hour.



# ALDI SUPERMARKET WEIGHTED AVERAGE TRIP RATES PER 1,000 SF GFA

## Suburban Land Use Setting

Multimodal Trips (General Urban/Suburban Setting)	Daily	*Adjacent Street AM Peak Hour	Adjacent Street PM Peak Hour	AM Peak Hour Of Generator	PM Peak Hour Of Generator
Person Trips	154.54	NA	13.96	16.14	16.80
Vehicle Trips	121.61	NA	10.79	13.02	12.98
Pedestrian Trips	1.12	NA	0.04	0.04	0.17
Bicycle Trips	0.53	NA	0.02	0.05	0.04
Transit Trips	0.00	NA	0.00	0.00	0.00

\*Store opens after the adjacent street AM peak hour.



# CONCLUSIONS

- The estimated person, vehicle, pedestrian, bicycle, & transit trip generation rates can be used as supplemental information for the ITE *Trip Generation Manual*
- Nearly half of the person trips were made by pedestrians at Urban Supermarkets in Center City Core land use setting locations, & at Pedestrian Variety Stores in Dense Urban Multi-Use land use setting locations
- More than 95% of the person trips at Sporting Goods Superstores & around 99% of the person trips at ALDI Supermarkets in Suburban land use settings were made by using personal vehicles.
- Study clearly illustrates the need to establish separate trip generation rates for different land use settings
- It is particularly important to develop multimodal trip generation rates for the Center City Core & Dense Multi-Use Urban land use settings





# LESSONS LEARNED

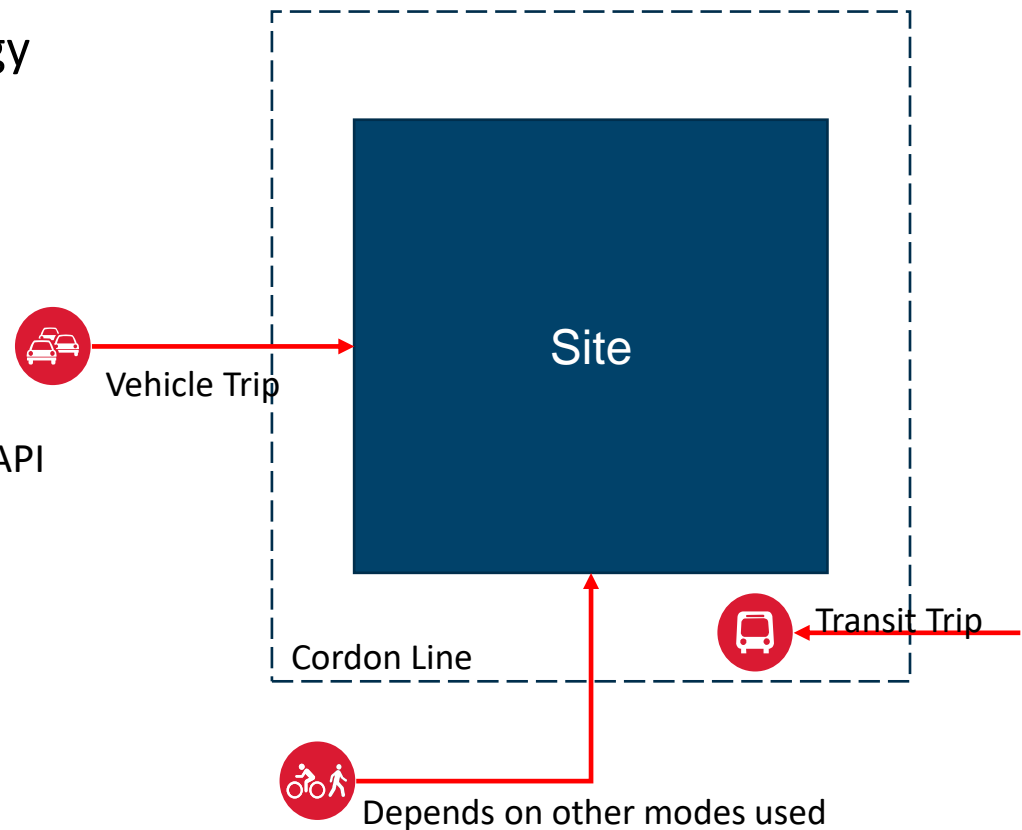
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- Difficult to obtain property owner approval to conduct on-site data collection
- Property owners have liability concerns associated with people coming onto their property for non-business-related purposes
- There was general uncertainty about who should grant permission – property owner or store owner?
- Close coordination with the owners/managers of the facilities, store managers, & supervisors of these sites is critically needed
- It is critical to complete an advance field review & plan before the data collection date
- Cost to collect on-site data at multiple sites may limit duration of counts at each site (i.e., one day vs. multi-day)



# NEW DATA COLLECTION METHODS

- Preferred Approach - ITE Methodology
  - Count persons or vehicles visiting the site using tube counts and cameras
  - Intercept survey – needed to determine mode of travel, vehicle occupancy
- Augmenting with technology
  - Video Camera
  - Pneumatic tubes
  - Sensors
  - Other technology
- Smart Mobility Platform
  - Google Activity Recognition API
  - Unleashed



# COUNT TECHNOLOGIES

Technology Type	Common Manufacturers	User Type	Typical Use
Infrared (Active and Passive)	<ul style="list-style-type: none"> <li>• TRAFx</li> <li>• EcoCounter</li> <li>• Trailmaster</li> </ul>	Vehicle, Bicycle and Pedestrian (Does not distinguish between bike/ped)	Sidewalk or Shared-use path
Pneumatic Tubes	<ul style="list-style-type: none"> <li>• EcoCounter</li> <li>• MetroCount</li> <li>• TRAFx</li> <li>• Road Sys</li> </ul>	Vehicle and Bicycle	On-road
Inductive Loop	<ul style="list-style-type: none"> <li>• EcoCounter</li> <li>• Road Sys</li> </ul>	Vehicle and Bicycle	On-road or paved shared-use path
Magnetometer	<ul style="list-style-type: none"> <li>• TRAFx</li> </ul>	Vehicle and Bicycle	Shared-use path
Piezoelectric	<ul style="list-style-type: none"> <li>• MetroCount</li> </ul>	Vehicle and Bicycle	On-road
Radar Sensors	<ul style="list-style-type: none"> <li>• Sensy Networks</li> </ul>	Vehicle and Bicycle	On-road
Thermal Imaging	<ul style="list-style-type: none"> <li>• FLIR</li> </ul>	Vehicle, Bicycle and Pedestrian	On-road
Video Imaging	<ul style="list-style-type: none"> <li>• Miovision</li> </ul>	Vehicle, Bicycle and Pedestrian	On-road



# GOOGLE ACTIVITY RECOGNITION

- Sensor based activity recognition program
- Uses accelerometer, gyroscope, magnetometer with GPS to collect data every 3 seconds
- App can passively track activity of its users and make suggestions based on that Activity
- Currently accurate to the building level or better
  - 95<sup>th</sup> percentile accuracy at both origins & destinations within 150 feet;
  - Unable to track transit, but could be assumed with transit system information

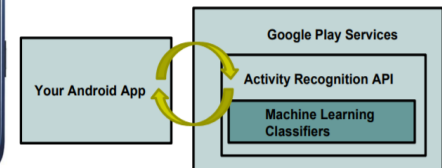
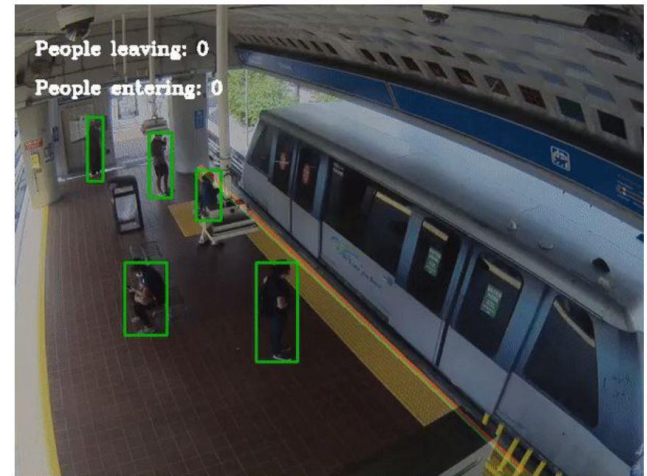


Figure 10 - A short walking trip exported to KML and visualized in Google Earth, with the actual start and end locations overlaid



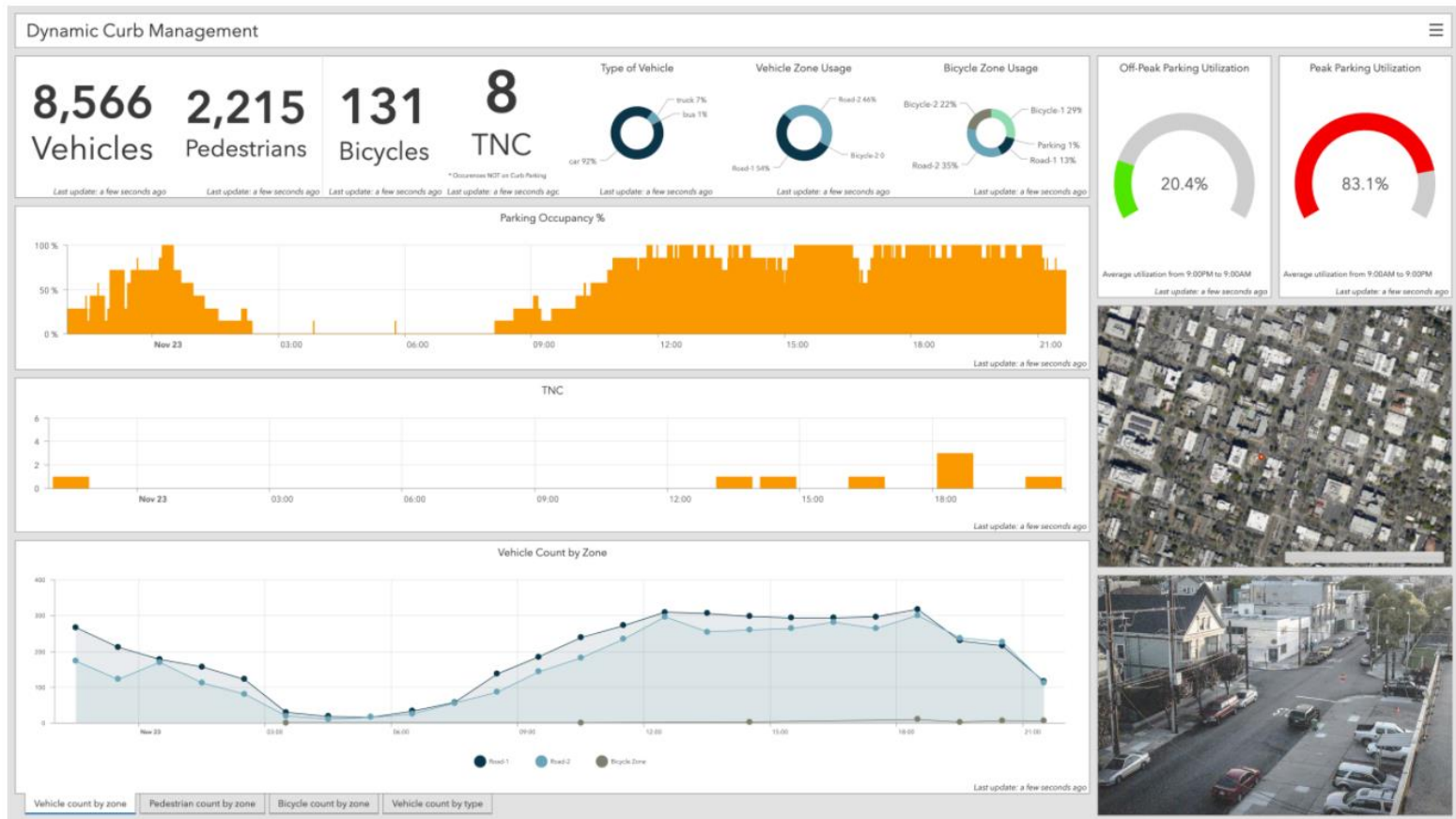
# UNLEASHED

- Offer scalable custom A.I. solutions
- Can track pedestrian travel (direction and flow)
- Provide insights into pedestrian behavior
- Can analyze multimodal pedestrian transportation and movement
- Can provide insights into retail and development data that can be used to inform and attract developers and analyze development impacts



# UNLEASHED

<https://unleashlive.com/solutions/cities-transport/micro-mobility-transporttraffic-monitoring>







# Discussion



# Contact Info

- [Gina.Bonyani@dot.state.fl.us](mailto:Gina.Bonyani@dot.state.fl.us)
- [Jenna.Bowman@dot.state.fl.us](mailto:Jenna.Bowman@dot.state.fl.us)
- [Karla.Matos@dot.state.fl.us](mailto:Karla.Matos@dot.state.fl.us)

Thank you!