

# **Pedestrian Crossing: Factors Influencing Pedestrian Behavior Along a High Crash Corridor**



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# Project Background

## Fletcher Avenue, Tampa, FL

- Hillsborough County Complete Streets Project
- Between Nebraska Avenue and Bruce B Downs Boulevard
- One of the highest pedestrian crash rates in Hillsborough County
- Heavily used transit corridor



# Purpose of Research



- **To study perceptions, attitudes and behaviors of walking, biking and safety along Fletcher Avenue**
  - **To see if attitudes and behaviors changed directly after the completion of the Complete Streets Project**
  - **To determine the most effective way to educate and encourage Fletcher Avenue users**
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# Five “E” Approach



- **Engineering** – Hillsborough County Complete Streets Project
- **Education/Encouragement** – WalkWise Tampa Bay
- **Enforcement** – Hillsborough County Sherriff
- **Evaluation** – Hillsborough County



# Complete Streets



- **Complete Streets are streets for everyone.** They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

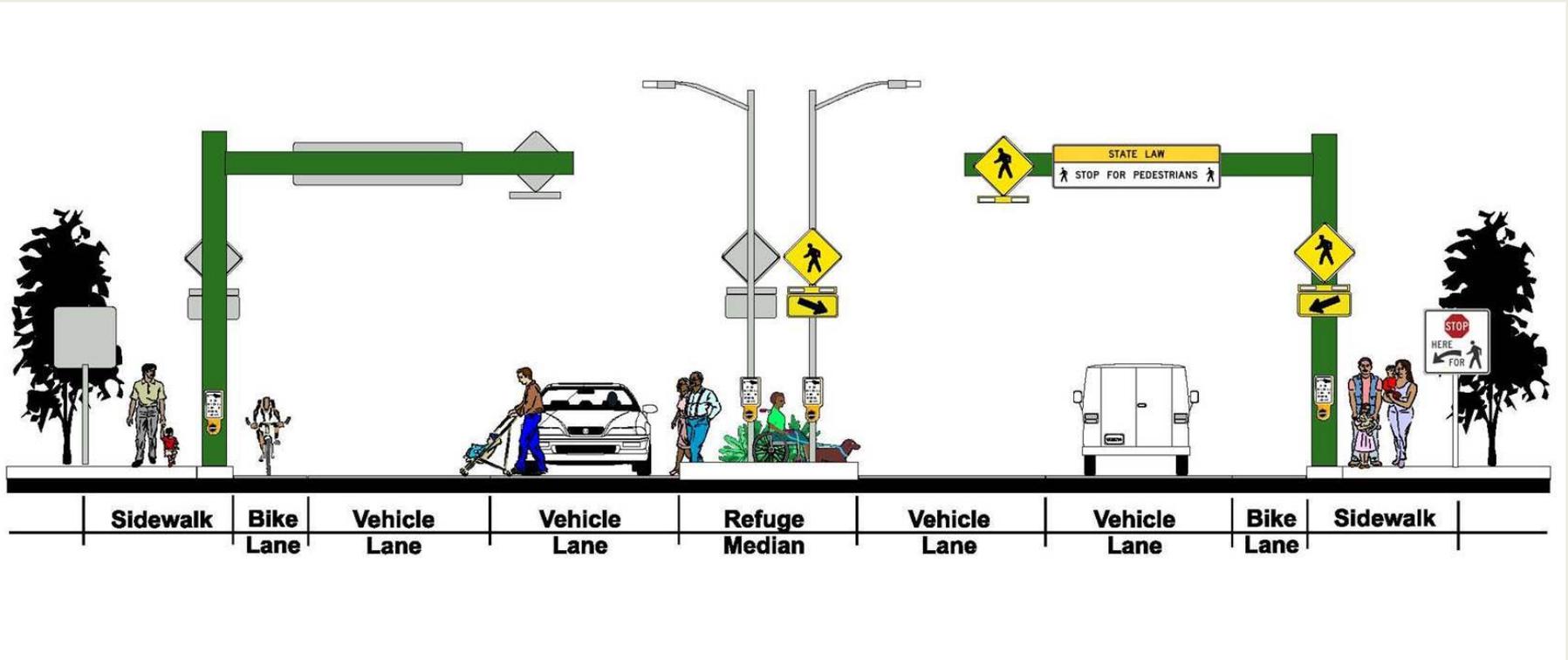
- Source: Smart Growth America (2015) Retrieved from: [www.smartgrowthamerica.org](http://www.smartgrowthamerica.org)

# Hillsborough County - Fletcher Avenue Complete Streets Project



- **Five midblock pedestrian crossings incorporating Rectangular Rapid Flashing Beacons**
- **One mid-block pedestrian crossing with traffic signal**
- **Raised concrete pedestrian refuge islands**
- **Raised concrete traffic separators**
- **Bike Lanes and Wrong Way Riding Signage**
- **Energy Efficient LED Street Lighting**
- **Enhanced Landscaping**
- **Lowered speed limit from 45 MPH to 35 MPH**

# Hillsborough County - Fletcher Avenue Complete Streets Project Rendering



# Research Project Objectives



Formative research with individuals who regularly cross Fletcher Avenue was used to clarify:

- (1) how individuals currently cross Fletcher Avenue
- (2) the willingness of individuals to properly use the crosswalks
- (3) opinions about crosswalks, including motivators and barriers to using crosswalks
- (4) barriers individuals experience related to not properly using the crosswalks (e.g. safety, time) that they would like to overcome
- (5) the marketing channels that individuals would respond to the best

# Research Methodology

## Observations

Before and after  
Complete Streets  
completion  
(Oct 2014 & Feb  
2015)

4 signalized  
intersections

16 hours of data  
collection each  
month

- differing times/days of  
the week
- schedule identical for  
both months

## On-the-Spot Surveys

Before and after  
Complete Streets  
completion  
(Oct 2014 & Feb  
2015)

4 signalized  
intersections

## Journey Mapping

After Complete  
Streets completion  
(Jan 2015)

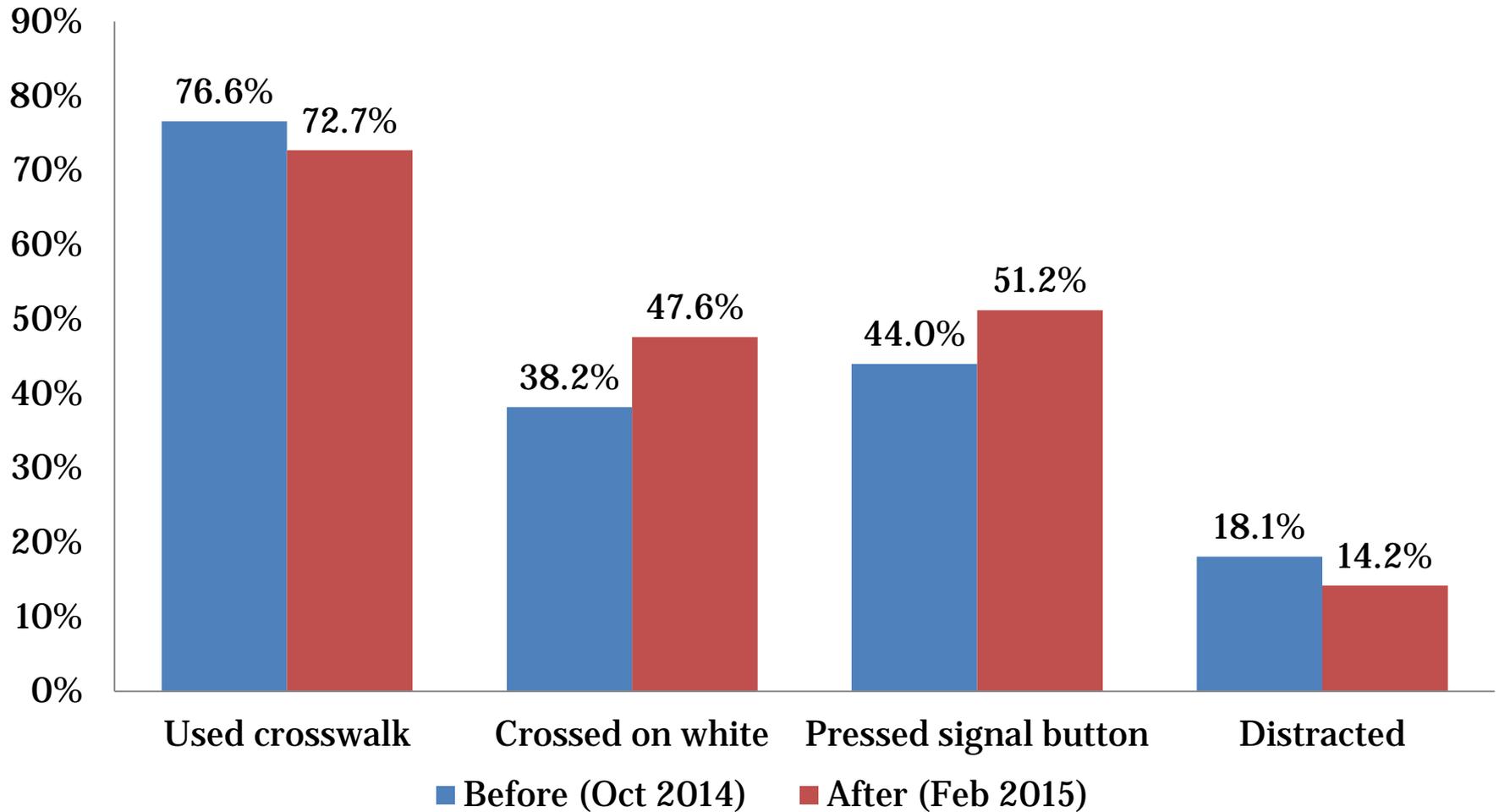
## Intercept Interviews

After Complete  
Street s completion  
(Mar/Apr 2015)

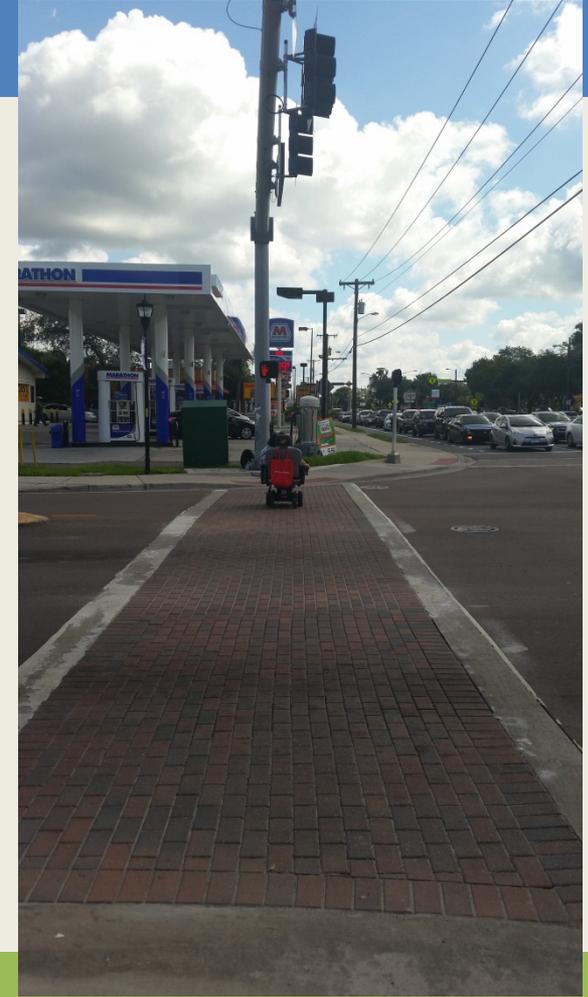
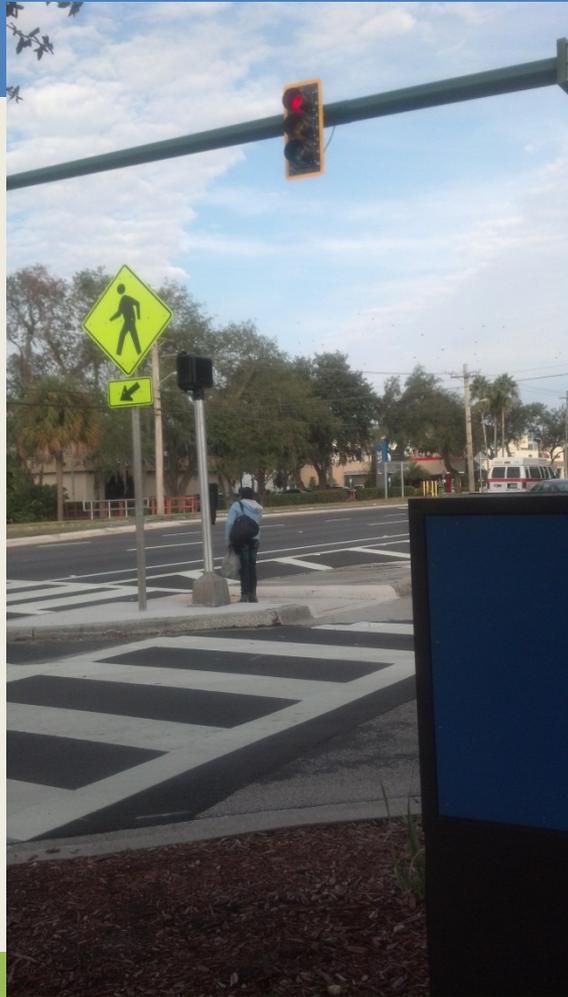
# Sample Characteristics

	Observations Aug 2014 (n = 867)		Observations Feb 2015 (n = 1,198)		On-the-Spot Surveys Aug 2014 (n = 173)		On-the-Spot Surveys Feb 2015 (n = 175)		Intercept Interviews Mar/Apr 2015 (n = 98)	
	Count	%	Count	%	Count	%	Count	%	Count	%
<b>Mode</b>										
<b>Pedestrian</b>	606	69.8%	899	75.1%	123	71.1%	142	81.1%	83	84.7%
<b>Bicycle</b>	245	28.3%	282	23.5%	50	28.9%	32	18.3%	14	14.3%
<b>Wheelchair</b>	16	1.9%	17	1.4%	0	0%	1	0.6%	1	1.0%
<b>Age</b>										
	NA		NA		NA		NA		Mean 42.4 years	
<b>Gender</b>										
<b>Male</b>	NA		NA		NA		NA		72	73.5%
<b>Female</b>	NA		NA		NA		NA		26	26.5%
<b>Access to a Private Vehicle</b>										
<b>Yes</b>	NA		NA		53	30.8%	58	33.1%	32	32.7%
<b>No</b>	NA		NA		120	69.2%	117	66.9%	66	67.3%
<b>Residence Distance from Fletcher Avenue</b>										
<b>Within ½ mile</b>	NA		NA		81	47.1%	59	33.9%	58	59.3%
<b>Greater than ½ mile</b>	NA		NA		92	52.9%	116	66.1%	40	40.7%

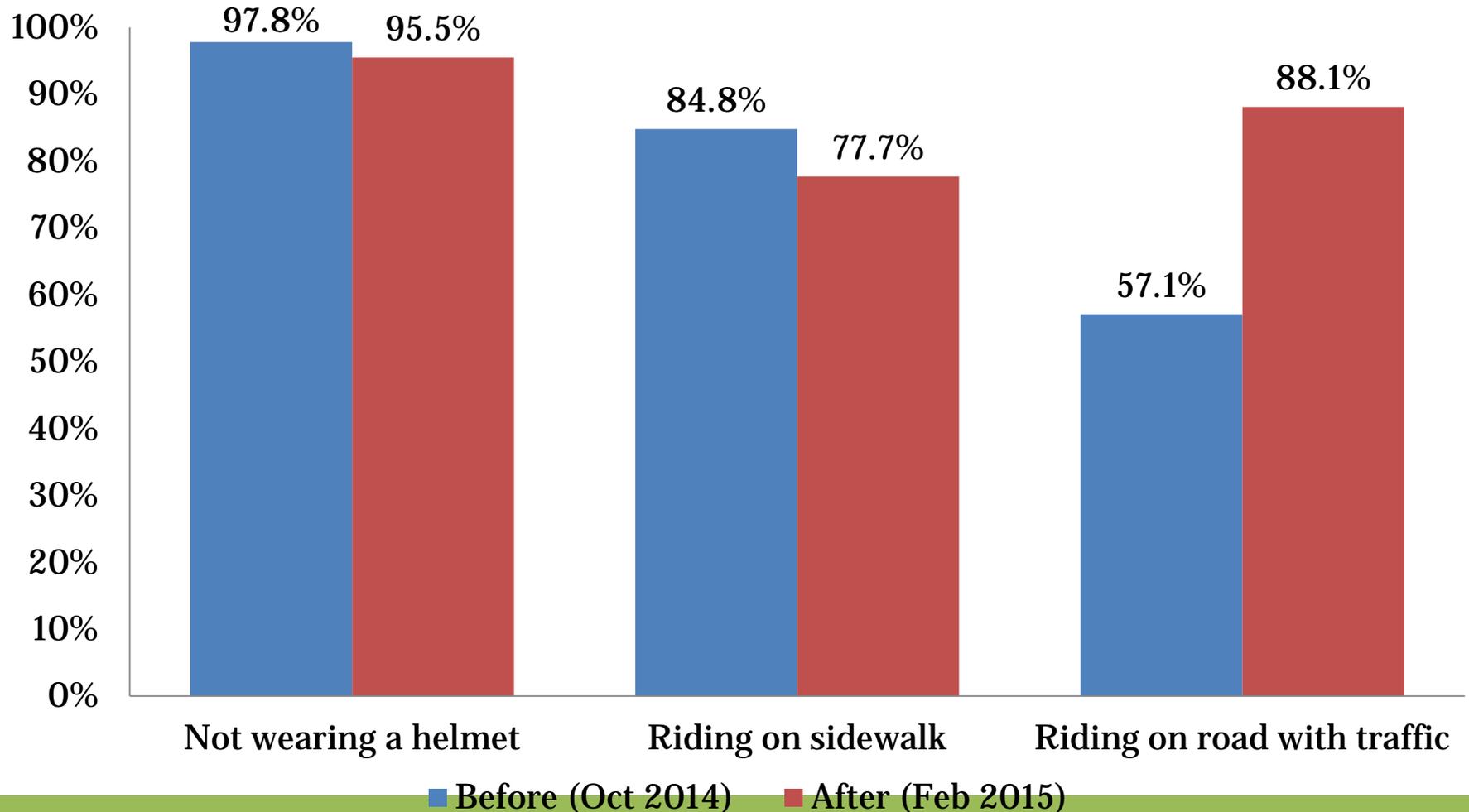
# Pedestrian Observations



# Observations - pedestrians



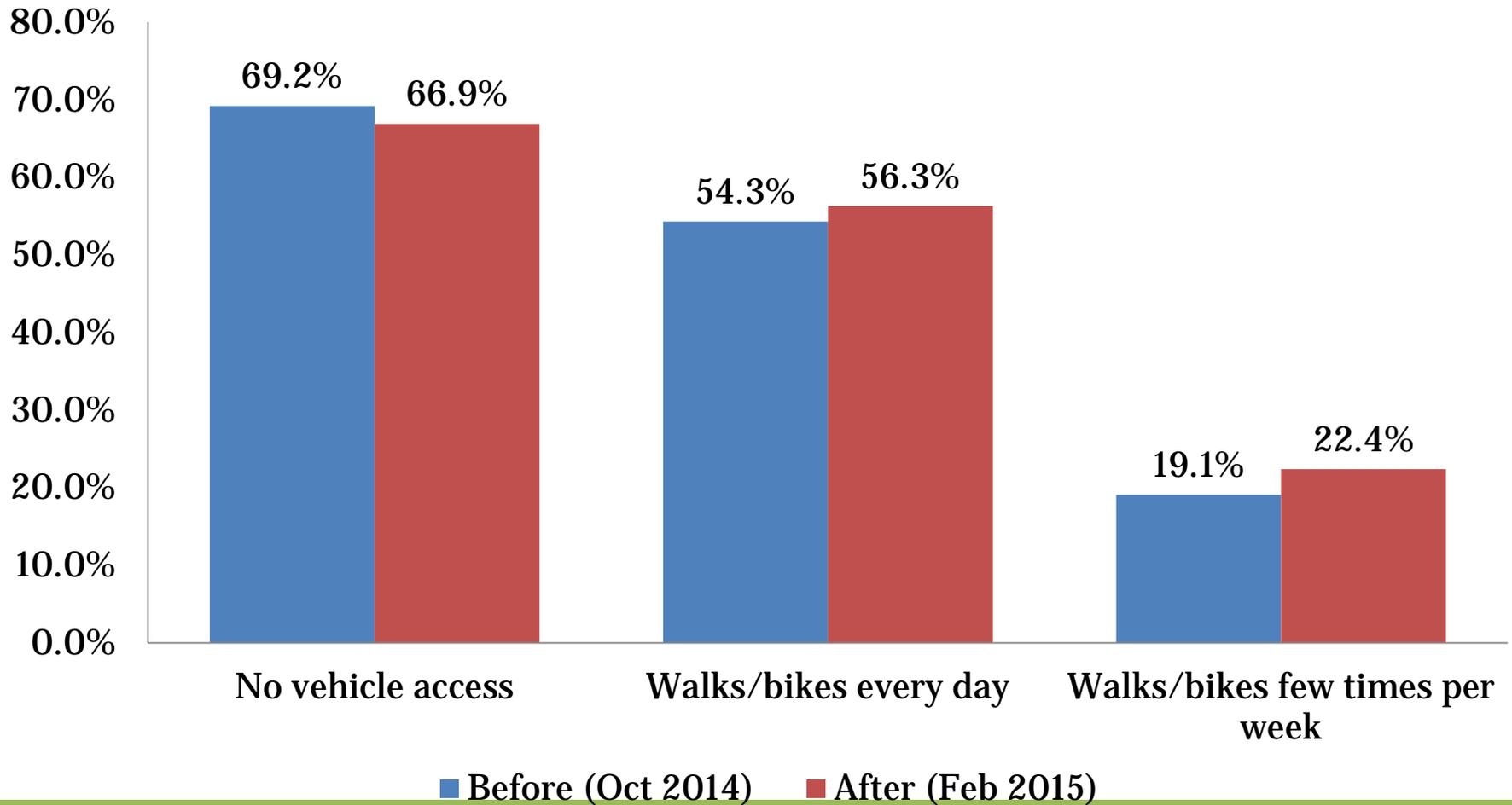
# Bicyclist observations



# Observations - Bicyclists

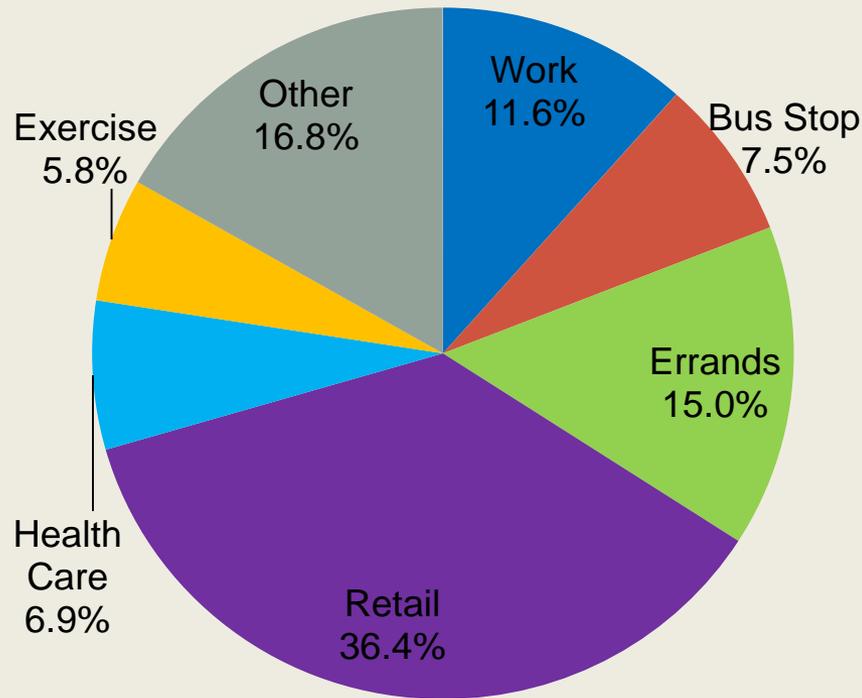


# On-the-spot surveys

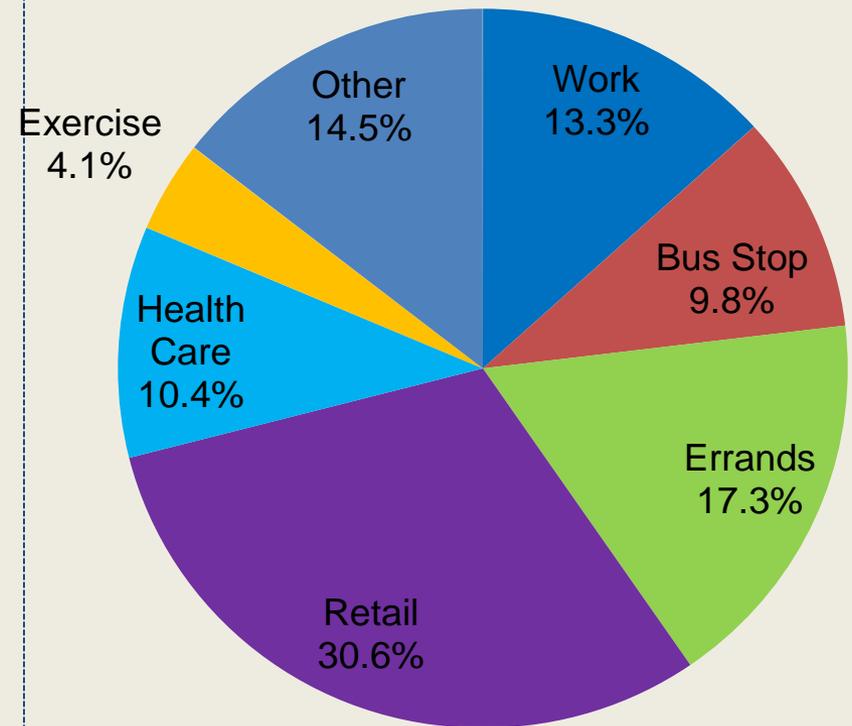


# Reason for traveling on Fletcher avenue

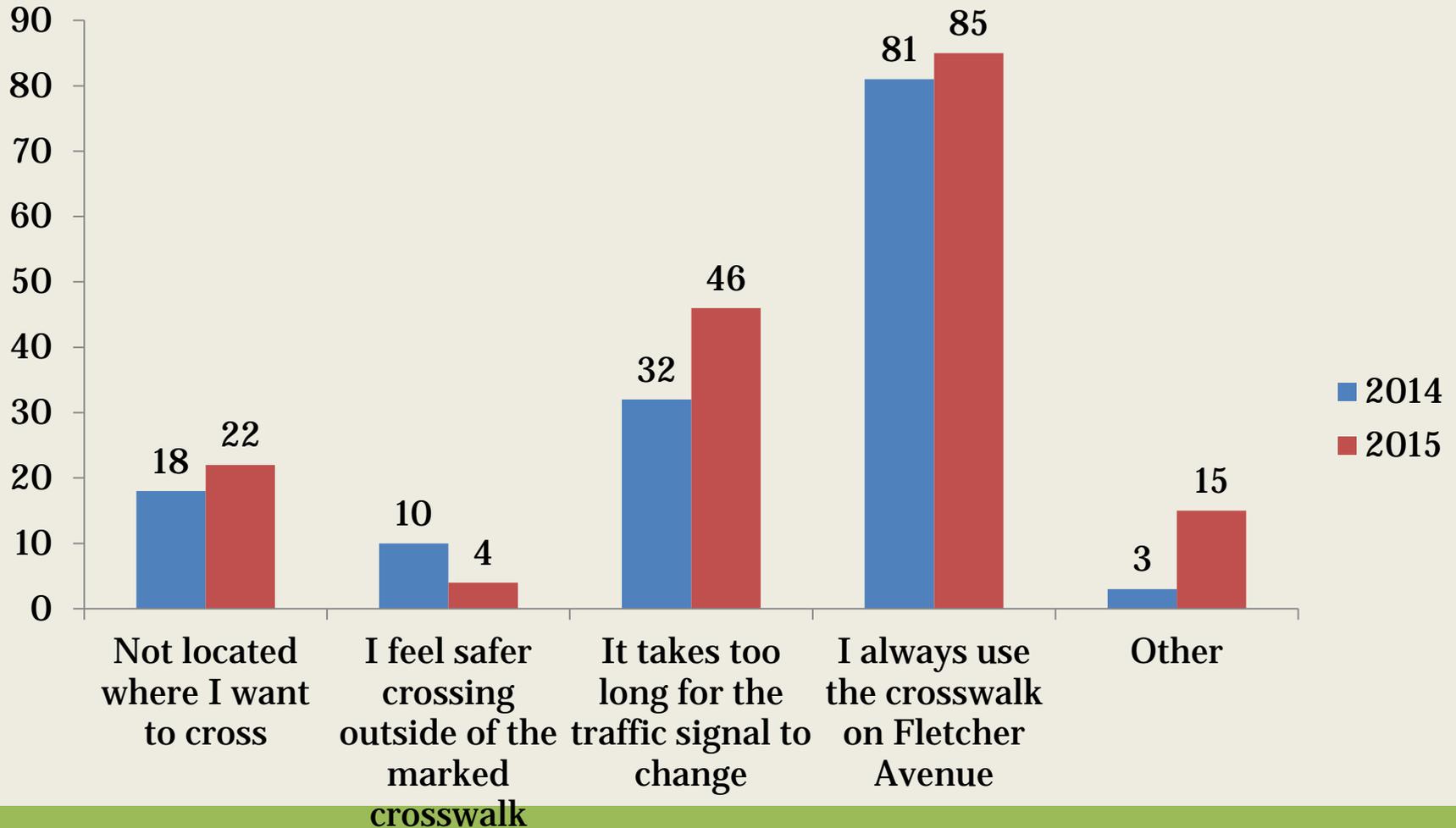
## Before Completion Oct 2014



## February 2015 After Completion

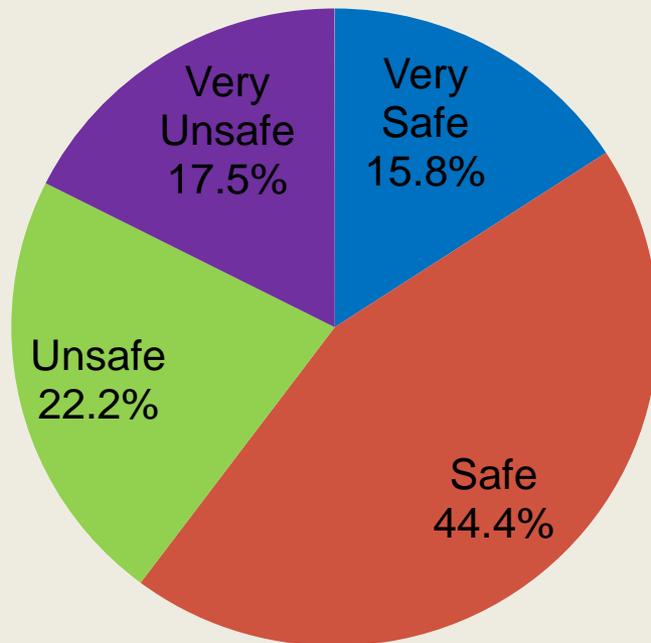


# Reasons for not using crosswalks on Fletcher Avenue

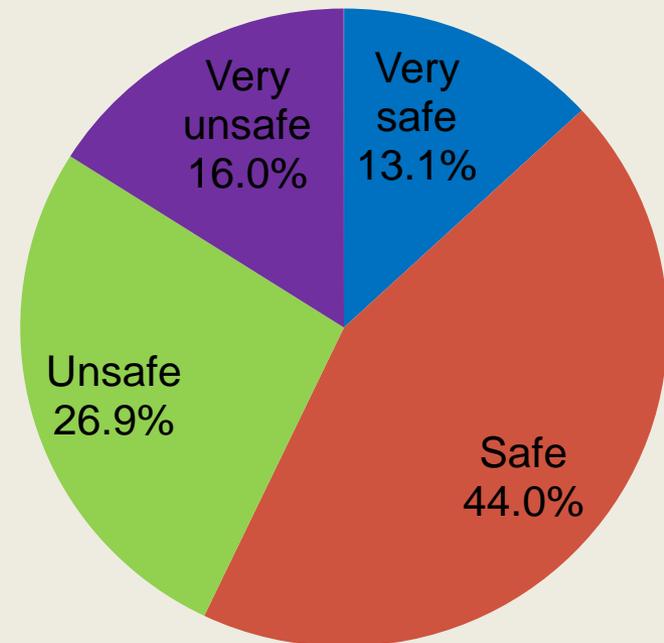


# Feelings of Safety crossing fletcher avenue

## Before Completion Oct 2014



## After Completion Feb 2015



# Fletcher Avenue Journey Mapping



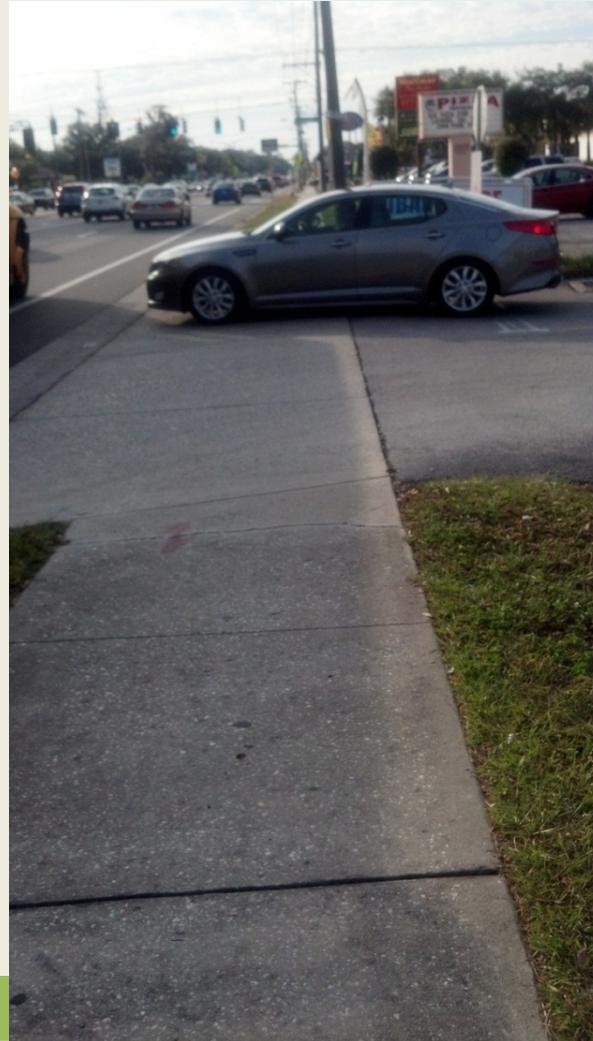
- “Walk in their shoes” to gain a customer point of view



# First crosswalk - waiting



# Sidewalk Blocked



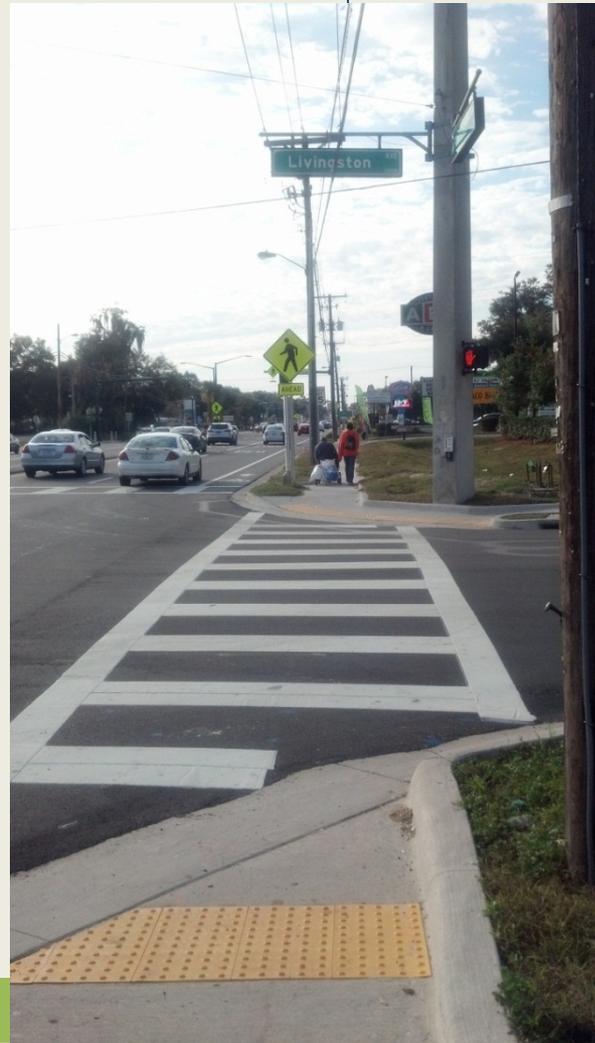
# Crosswalk signs



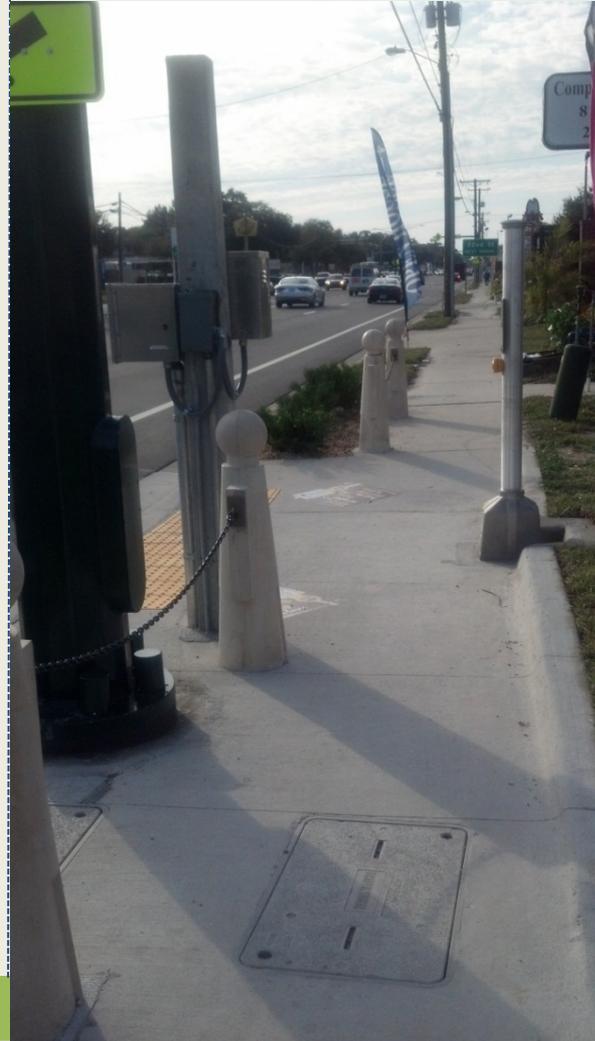
# Bus stop



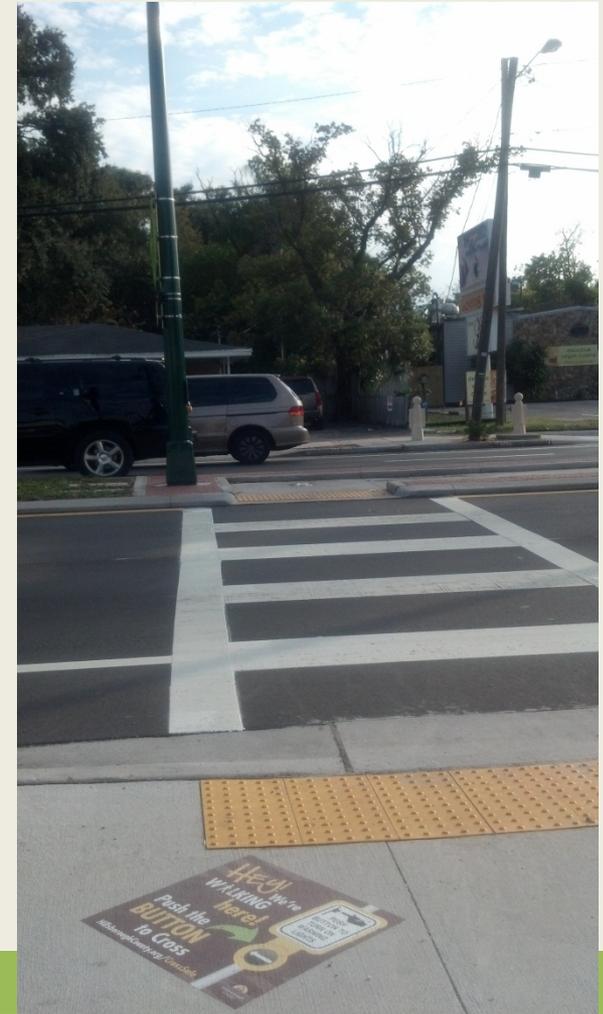
# Waiting for signal to change



# Limited Visibility at Crosswalk



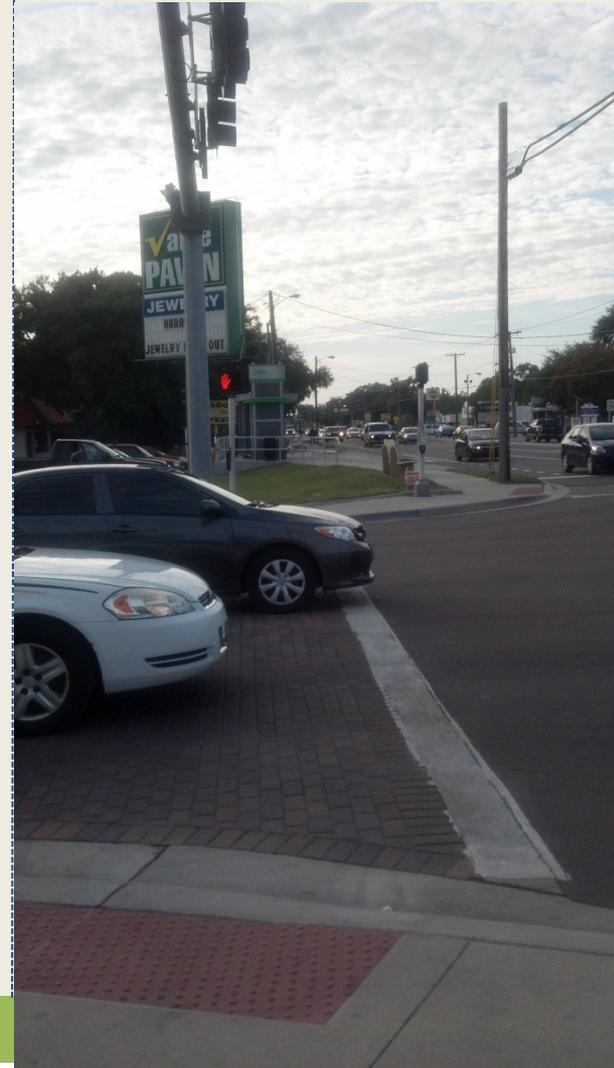
# Rectangular Rapid Flashing Beacons



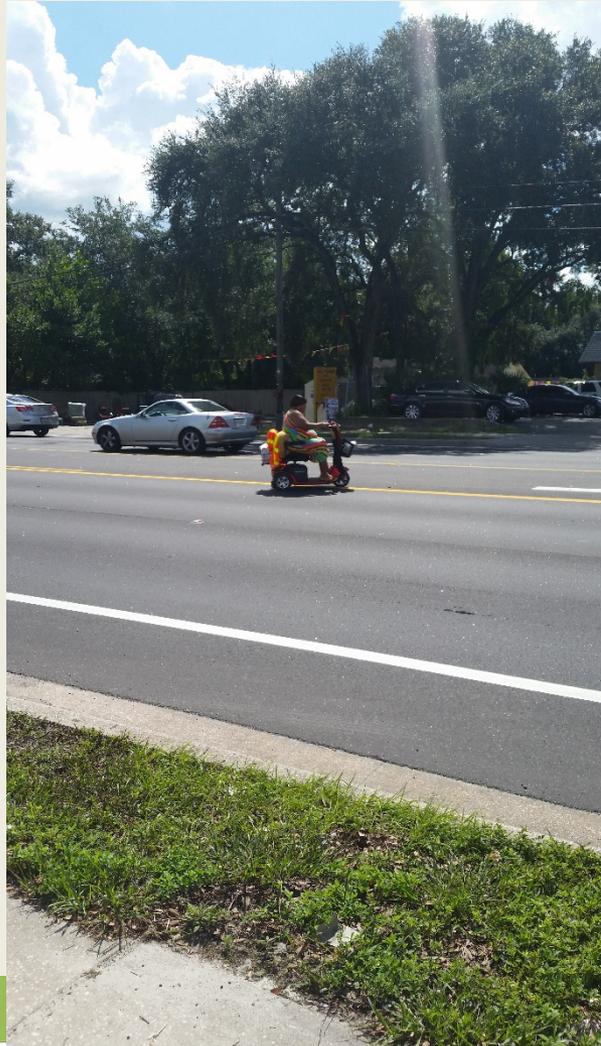
# Sidewalk message



# Drivers blocking Crosswalk



# Pedestrians on Fletcher Avenue



# Journey Mapping Emotional Experience



<b>Steps</b>	<b>Walk to crosswalk</b>	<b>Push crosswalk button</b>	<b>Wait for signal to change</b>	<b>Cross</b>	<b>Walk to next crosswalk</b>
<b>Positive</b>	X	X		X	X
<b>Neutral</b>					
<b>Negative</b>			X	X	X
<b>Problems or Improvement Opportunities</b>			Pedestrian signals at intersections could change automatically	Not sure if traffic lights are operational; safety – driver behavior	Some sidewalks blocked; safety

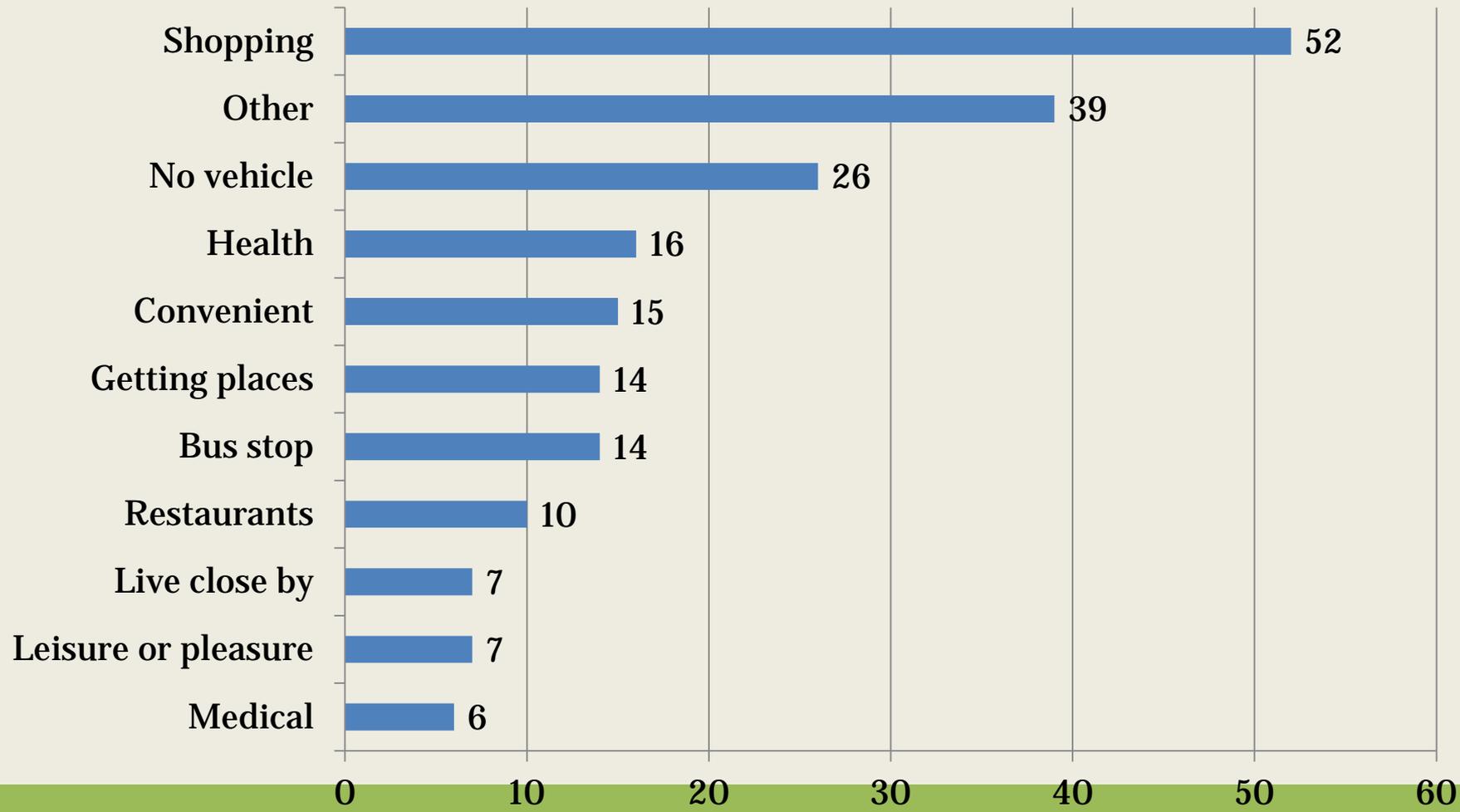
# Intercept Interviews



- March/April 2015 – after Complete Streets completion
- 98 participants
  - 83 walking
  - 14 bicycling
  - 1 wheelchair
- 67.3% no access to vehicle
- 85% walk daily or several times per week on Fletcher Avenue
- 59.3% live within ½ mile of Fletcher Avenue
  - 8 participants homeless



# Reasons for walking/Biking along Fletcher Avenue



# Perceptions of safety on Fletcher Avenue



- “I don’t feel safe, I feel cautious. You do right of way but drivers don’t care. Seventy percent of drivers don’t know [pedestrians have] right of way, are distracted, or have no signal and are turning. [Drivers] have tinted windows and you can’t make eye contact. [Drivers are] concerned that the car behind will blow the horn.”
- “I have been here a long time, and seen the difference between crosswalk and no crosswalk. Seems safer now than when there was no crosswalk.”

# Rectangular Rapid flashing beacon (RRFB)



# Ways to stay safe on Fletcher Avenue



- “Look before you cross. Be very careful and watch for cars because they don’t stop. Be cautious, look both ways and take a second look.”
- “Pay attention to surroundings. Be aware. Just because you are paying attention doesn’t mean others are.”

# Fletcher Avenue

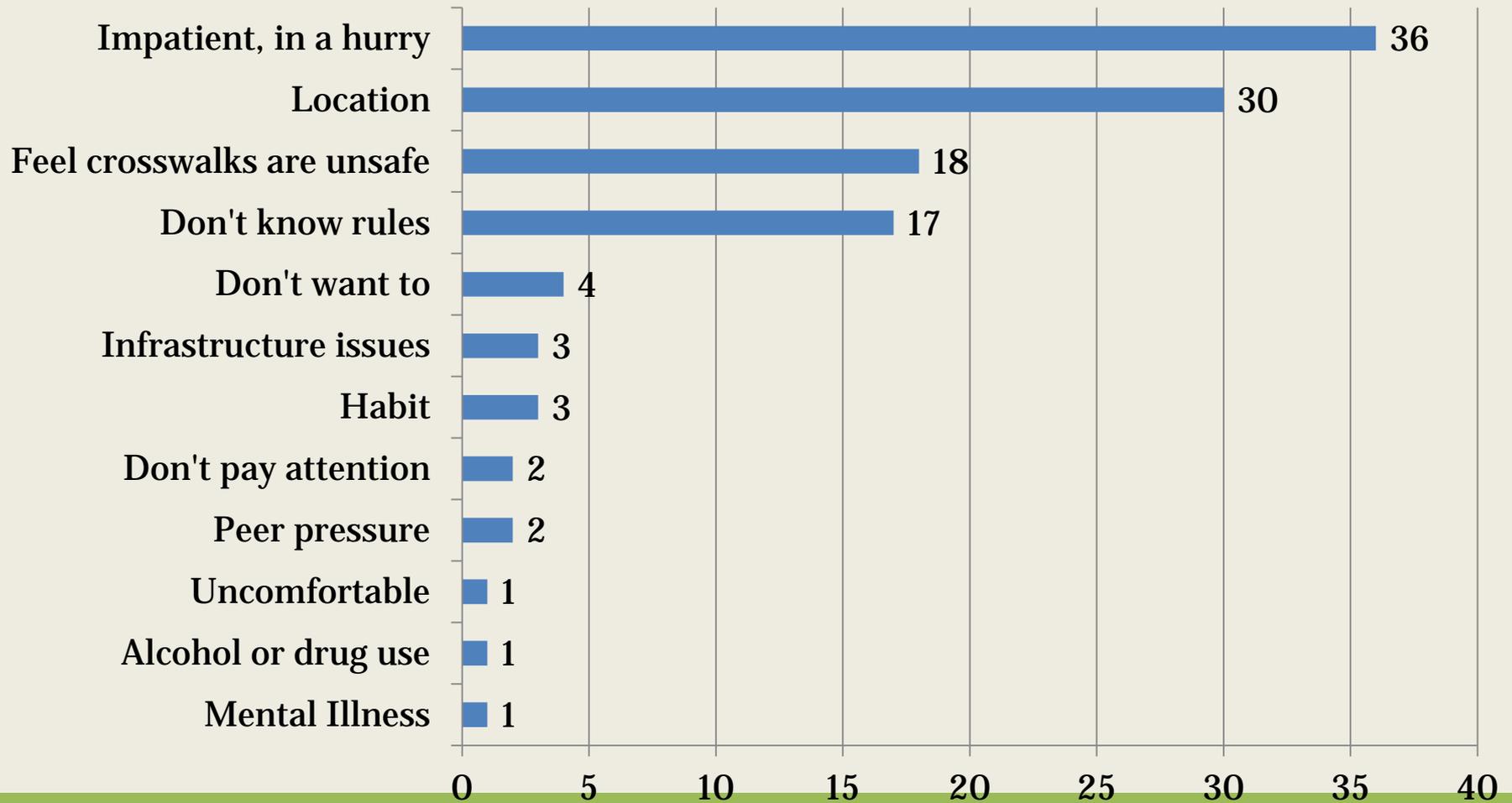


# Perceptions of Fletcher Avenue crosswalk users



- “Elderly are more careful than young teens.”
- “Children with them, families [use crosswalks].”
- “Kids and teens and men don’t use [crosswalks] and when they do use [crosswalks], they don’t wait for the light to change.”
- “Younger don’t understand life itself, [they] take more chances which is how people get hit.”

# Barriers to Using Crosswalks on Fletcher Avenue



# Barriers to Using Crosswalks on Fletcher Avenue

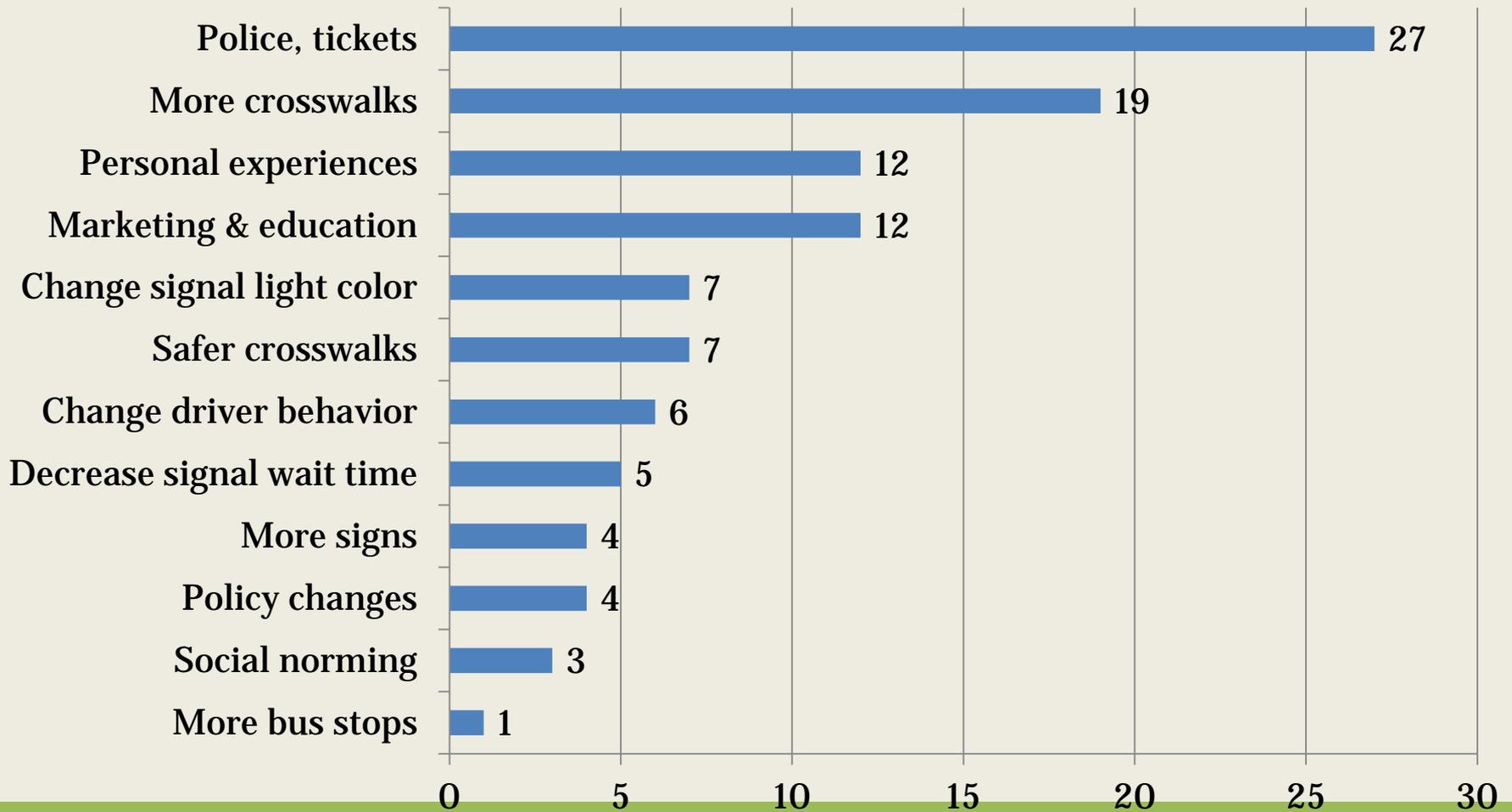


- **“It is not always convenient to walk to the crosswalk. This is the only reason I can think of why someone would avoid safety.”**
- **“Lack of convenience. When trying to get to the Family Dollar and the laundry mat, there is no crosswalk nearby.”**

# Family Dollar/Laundry mat



# Motivators to Use crosswalks on Fletcher Avenue



# Fletcher Avenue Mid-Block Crossing



# Talking about safe walking & biking



- “Outreach; public outreach by walking the streets and open promotion.”
- “What you are doing – talking, walking, by the same people every day.”
- “Do what you are doing. Give out safety items, vests, and lights.”

# Hillsborough County's Fletcher Avenue Safety Brochure

**HEY!**  
I'm WALKING  
**here!**

Rectangular  
Rapid  
Flashing  
Beacons  
(RRFB)

**How  
They  
Work**



**PAY** Attention • **READ** the Signs • **LEARN** the Rules



**1**  
**PRESS** button to activate flashing lights, warning drivers



**2**  
**CHECK** that vehicles stop before entering crosswalk



**3**  
**STOP** in median



**4**  
**PRESS** button to continue across the street



**5**  
**CHECK** that vehicles stop before entering crosswalk



**Get in Touch with Us, Improve Safety**

For more information on Hillsborough County's Pedestrian and Bicycle Safety initiative, visit [HillsboroughCounty.org/CrossSafe](http://HillsboroughCounty.org/CrossSafe) or call (813) 635-5400. Request a free pedestrian safety presentation for your community or organization at [walkwisetampabay.com](http://walkwisetampabay.com) or call (813) 974-3120



## Safety Tips



**Pedestrians Always:**

- Cross only in a crosswalk
- Look left, right, then left again and make eye contact with drivers before crossing
- Use pushbuttons for signals, where provided
- Walk defensively, you never know when a car will fail to stop at a crosswalk



**Bicyclists Always:**

- Obey all traffic signs, signals, and markings
- Ride in the same direction of traffic on the street or in a bike lane
- Use lights at night



**Drivers Always:**

- Be alert and reduce speed in areas with crosswalks
- STOP if pedestrians are in the crosswalk or preparing to cross
- Wait until pedestrians safely exit the road at the median or curb before resuming travel

# Conclusions



- Dangerous behaviors continue to exist after completion of the Fletcher Avenue Complete Streets project.
- Approximately half of users still feel unsafe.
- To influence behavior change, it is important to completely understand the problem, and identify what the important barriers are that people are facing.
- A 3 “E” approach is critical to encourage safe driver, pedestrian and bicyclist behaviors.
- Continuing education is important after Complete Streets are in place.

# Thank You!



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