



Implementing Complete Streets Through the MPO

Jeff Arms, AICP, PE, PTOE, PMP
Jamie Krzeminski, PE, PTOE





Jeff Arms



Jamie Krzeminski

Presenters



- 01 **Overview of Complete Streets**
- 02 **An Emerging Market**
- 03 **Design Guidance & Innovation**
- 04 **Case Studies**
- 05 **FDOT Complete Streets Update**
- 06 **MPO's Role & Examples**
- 07 **Complete Streets Policy**



01

Overview of Complete Streets

What is a “Complete Street”?

- A “Complete Street” is safe, comfortable and convenient for travel via automobile, foot, bicycle, and transit.

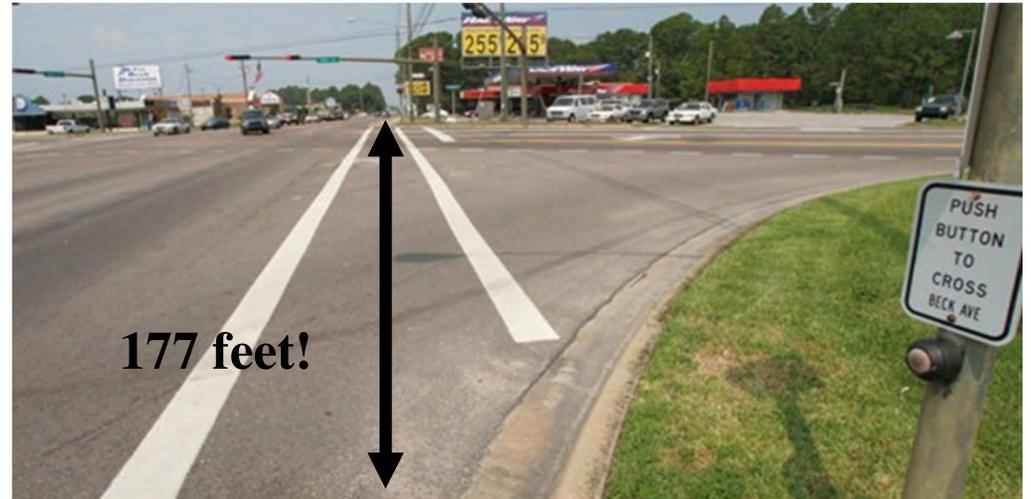
Why “Complete Streets”?

- Americans want to bike or walk more
- About 1/3 of all Americans do not drive
- Many streets are inadequate
- Incomplete streets are unsafe
- Public Health – Obesity epidemic
- Change in school drop off/pick up patterns



Our Challenges

- Wide and poorly designed intersections
- Overly wide driveways
- Missing sidewalks on major roadways





Our Challenges

- Dangerous crossings
- Poor transit facilities
- Incomplete streets are unsafe





How Can We Complete Our Streets?

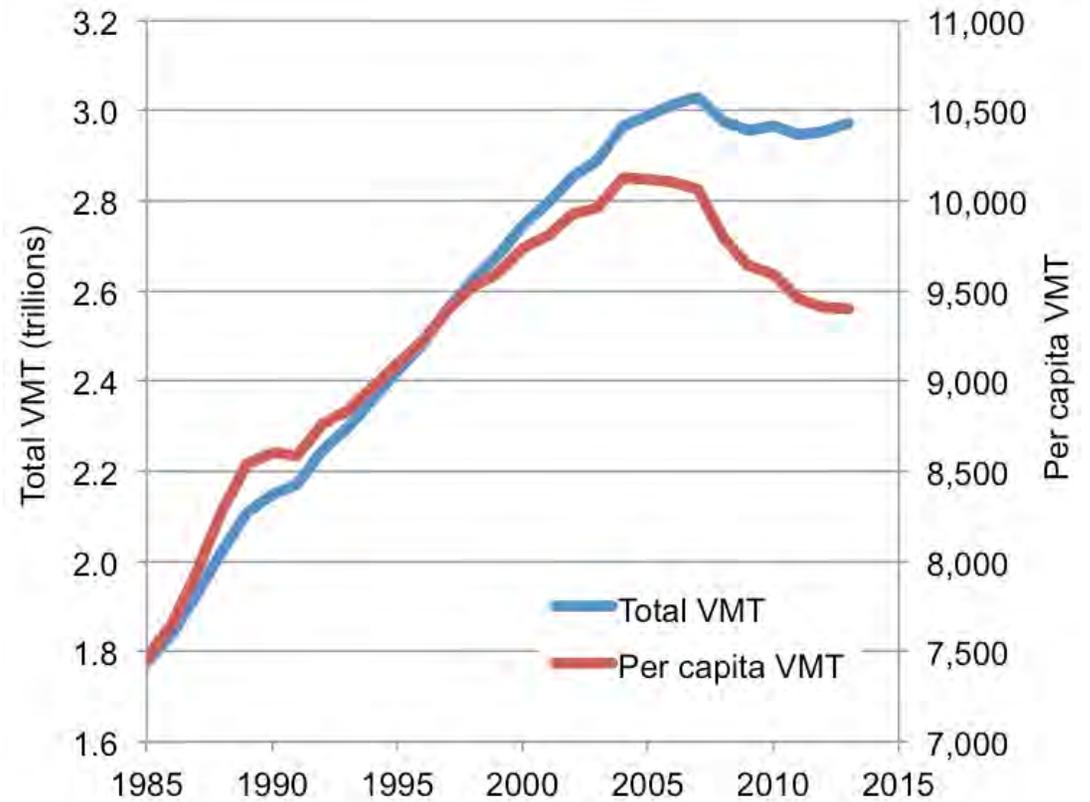
- No one-size fits all
 - Add sidewalks (& planting strips)
 - Narrow travel lanes and roadways
 - Add enhanced bike lanes
 - Add medians
 - Provide transit lanes and accommodations
 - Add lighting
 - Provide midblock crosswalks





02 **An Emerging Market**

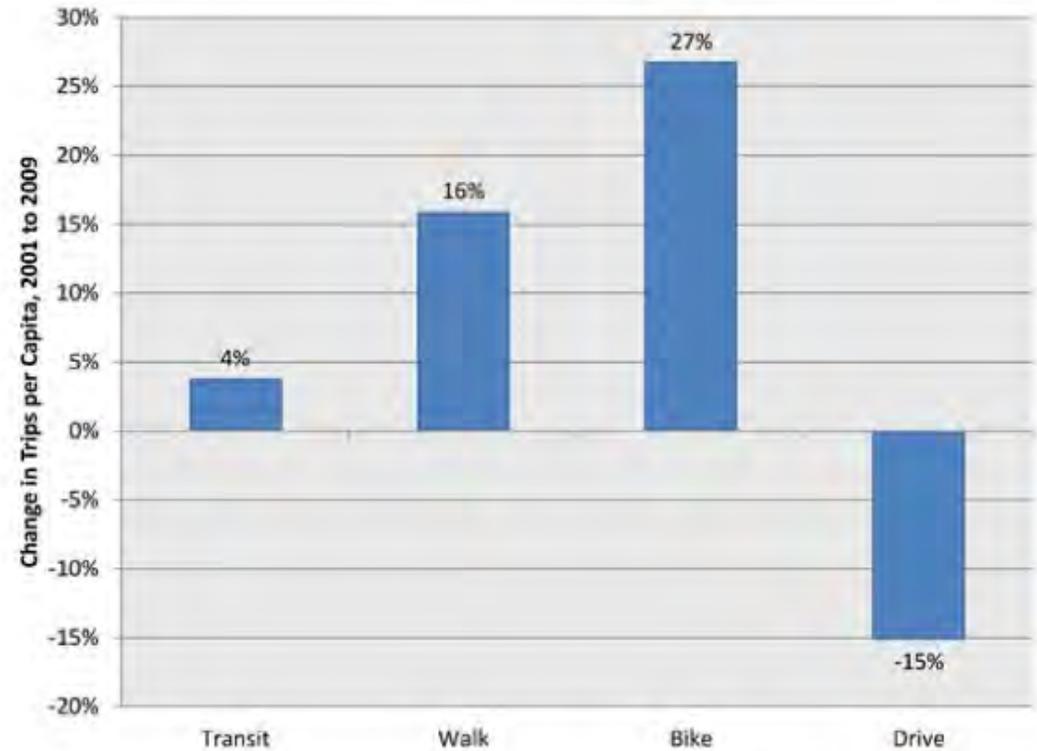
Changing Transportation Trends



Changing Transportation Trends



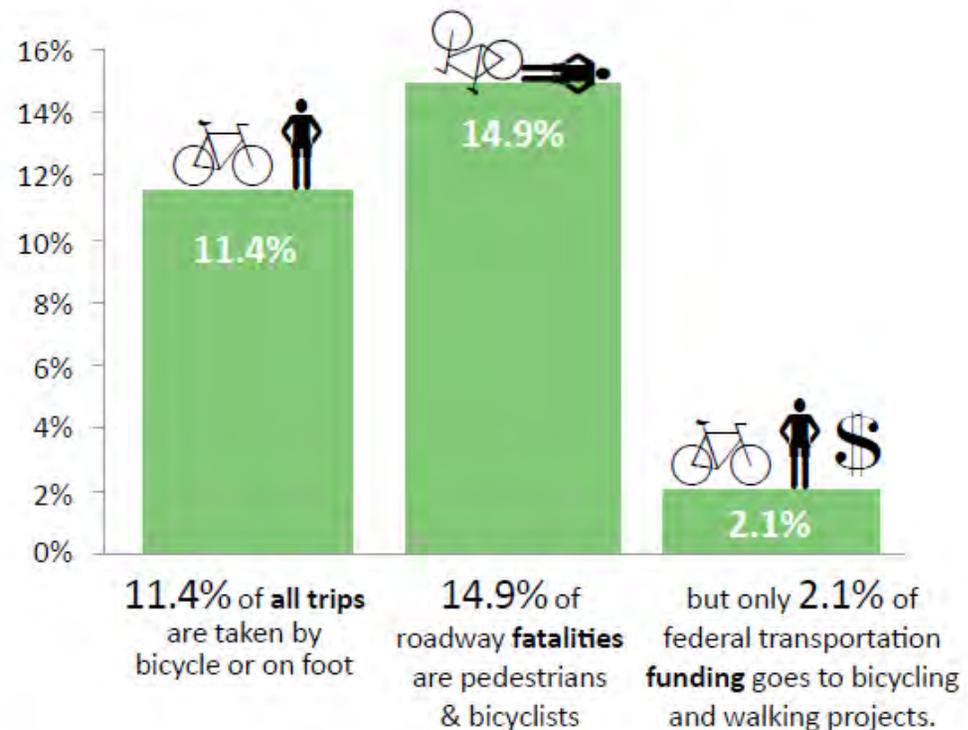
Figure 2. Change in Number of Trips per Capita among 16 to 34 year-olds, 2001 to 2009¹²



Safety Concerns & Funding Levels



Disparity of Pedestrian and Bicycle Mode Share, Fatalities, and Funding



Sources: NHTS 2009, FARS 2009–2011, FHWA FMIS 2009–2012

Changing Attitudes & Stakeholder Demand



WHAT AMERICANS OVER 50 THINK ABOUT THEIR NEIGHBORHOODS



40% say there are inadequate sidewalks



55% say there are inadequate bike lanes and paths



48% say there is no comfortable place to wait for the bus

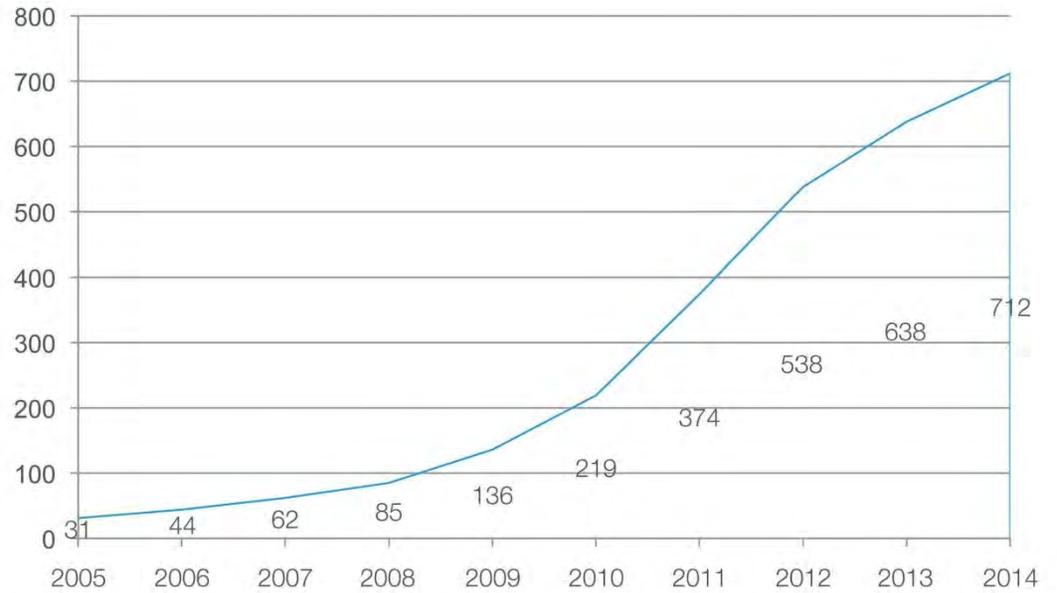
Source: Alliance for Biking and Walking





Complete Street Policy Growth

Number of Complete Streets policies nationwide, 2005–2014



BUILD IT FOR ISABELLA

ISABELLA: 12 YEARS OLD AND READY TO RIDE

Meet Isabella. Like most girls her age, she is exploring her independence.

She just started 7th grade and loves doing cartwheels in the grass with her friends and sharing her life through Instagram. She is ready to travel her world by bike, but is the network ready for her? Isabella wants to bike to school, the library and the ice cream shop, but her mom worries about her getting across or along busy streets. Isabella likes to ride, but she's still small and her skills aren't fully developed. She's sometimes a little wobbly and it's hard for her to see over parked cars near intersections.

What does Isabella need to ride safely around her world?

- ⦿ Are we planning low-stress, connected networks that work for Isabella?
- ⦿ What if every project was designed with Isabella in mind?

If we build it for Isabella, wouldn't it work beautifully for the rest of us too?



Walkable Places are a National Health Priority



- 1 of 2 US adults living with chronic disease (heart disease, cancer, diabetes, etc.)
- Call to Action Strategic Goals:
 1. Make walking a national priority
 2. **Design communities that make it safe and easy to walk for people of all ages & abilities**
 3. Promote programs & policies to support walking
 4. Provide information to encourage walking & improve walkability
 5. Fill surveillance, research, & evaluation gaps related to walking/walkability

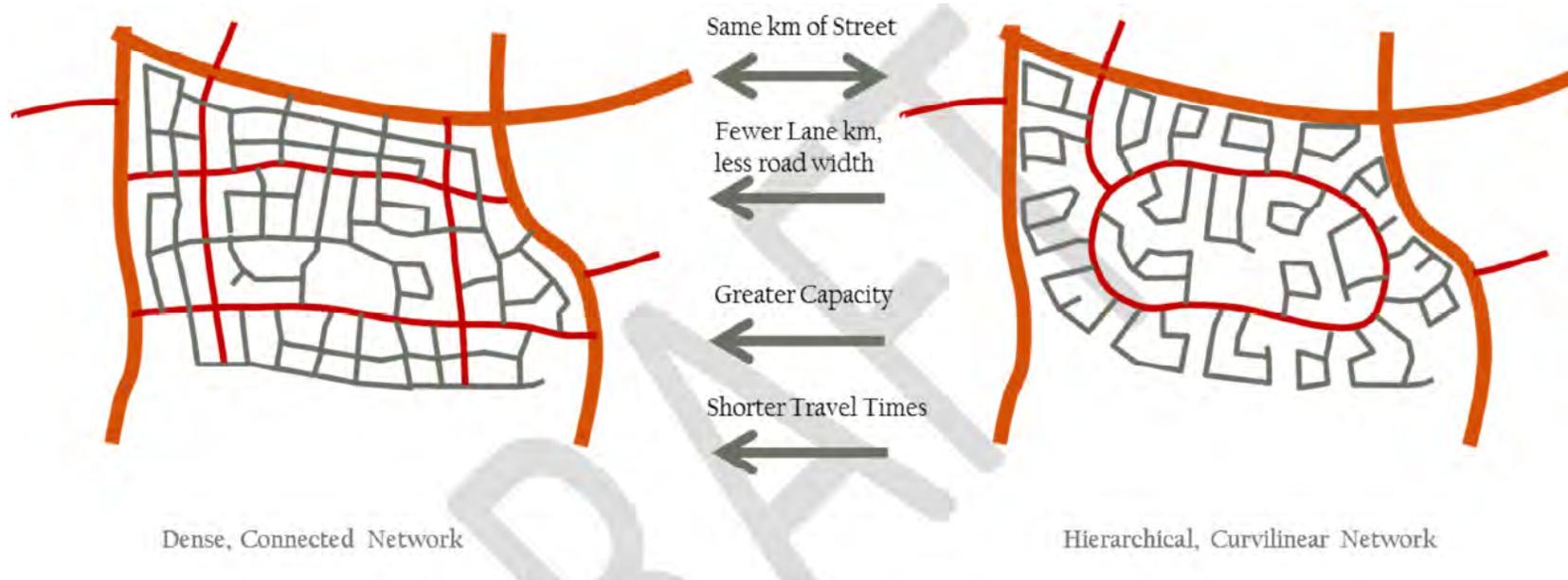


03

Design Guidance & Innovation

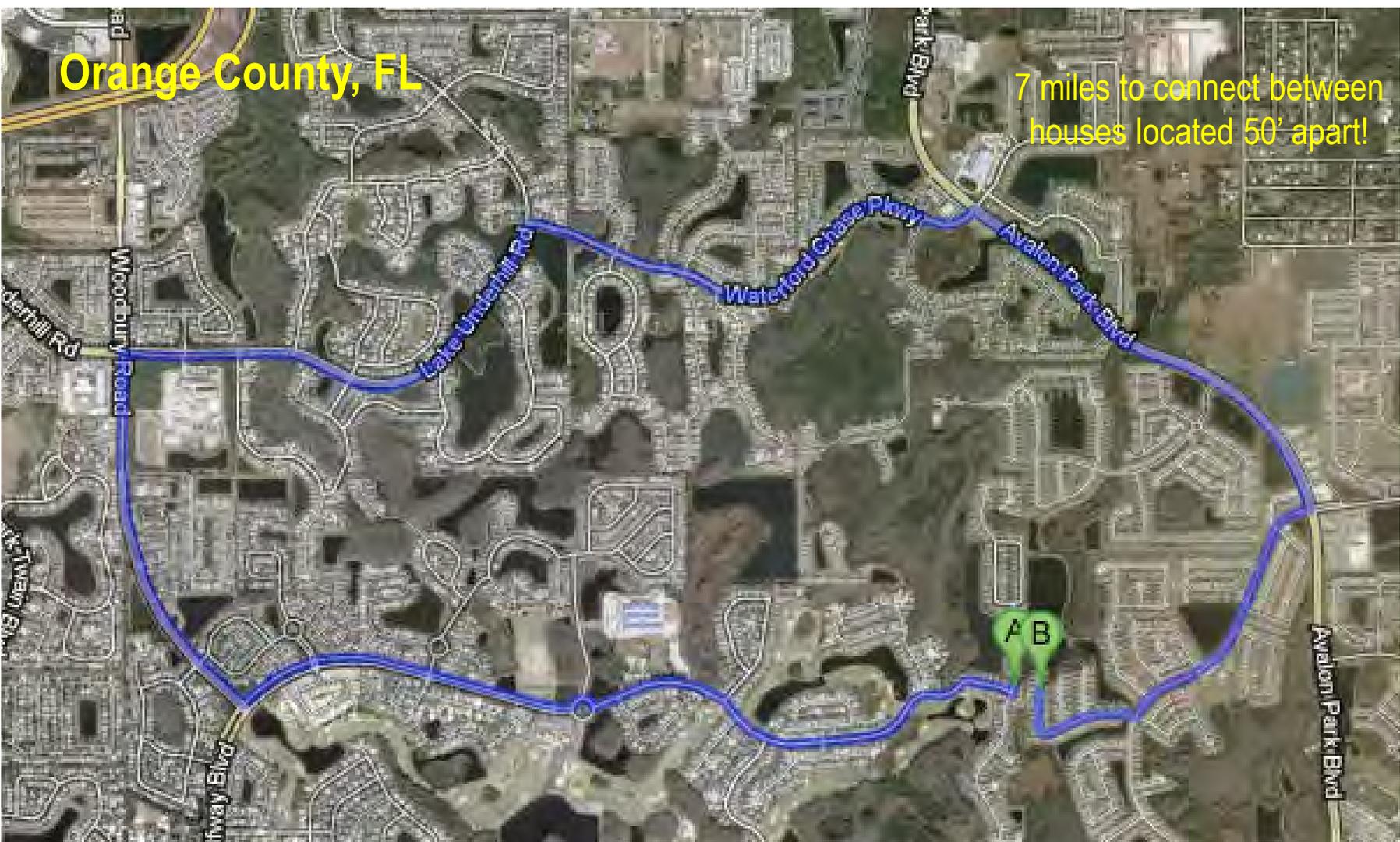
It starts with how we build our neighborhoods

- In Canada, Victoria Transport Policy Institute is pushing for Smart Growth
- Province of Ontario's Transit Supportive Guidelines promote improved neighborhood designs



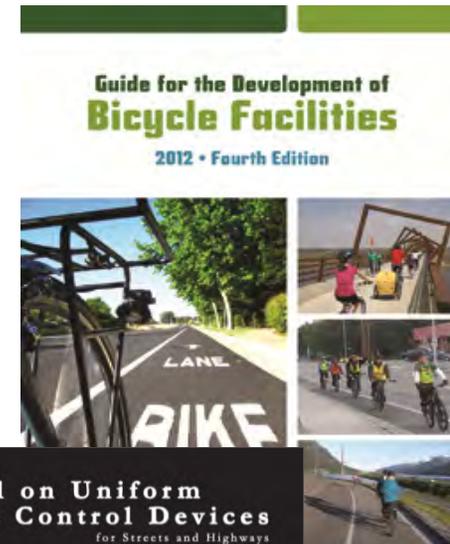
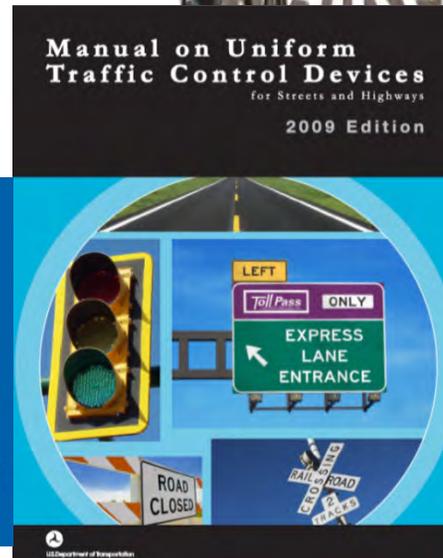
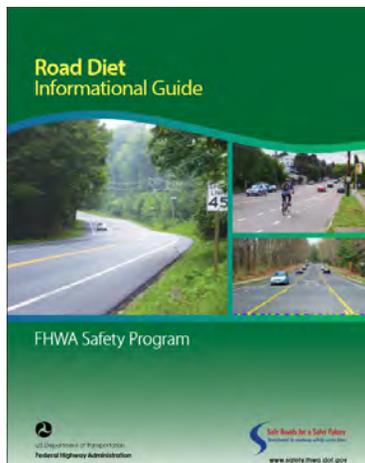
Orange County, FL

7 miles to connect between houses located 50' apart!



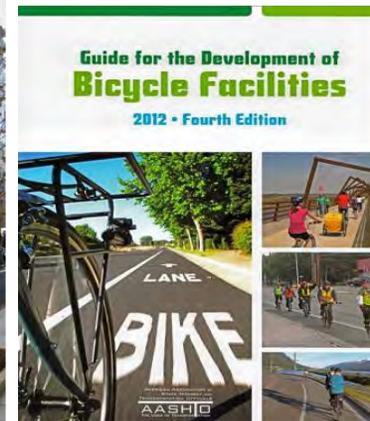
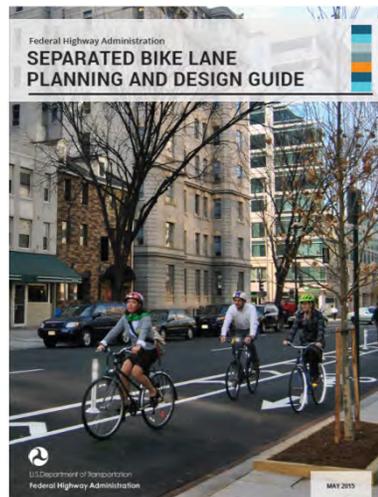
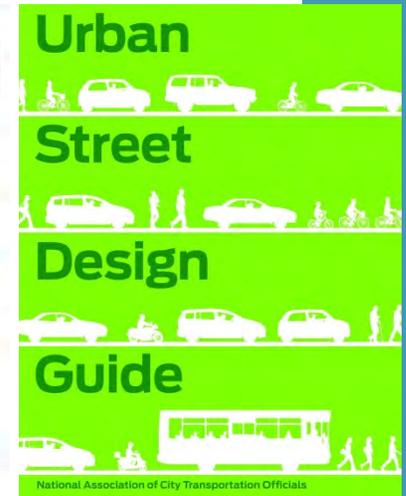
Design Guidance/Principals

- Geometric guidance
 - AASHTO *Guide for the Development of Bicycle Facilities*
 - City and State Roadway/Highway Design Manual
 - Ontario Traffic Manual
- Traffic control guidance
 - *Manual on Uniform Traffic Control Devices* (National MUTCD)



Innovative Design Guidance

- CROW – Design Manual for Bicycle Traffic (Dutch Guide – English version)
- NACTO – Urban Bikeway Design Guide; Urban Street Design Guide
- AASHTO – Guide for the Development of Bicycle Facilities
- City Street Design Manuals
- State DOT Bicycle Design Manuals
- FHWA Separated Bike Lane Planning and Design Guide



Federal Policy Guidance & Design Flexibility

- USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations (March 2010)
 - *“The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects...transportation agencies are encouraged to **go beyond minimum standards** to provide safe and convenient facilities for these modes.”*
- FHWA Bicycle and Pedestrian Facility Design Flexibility (memo, August 2013)
 - Supports use of NACTO Urban Bikeway Design Guide to develop non-motorized transportation networks
 - Emphasizes that most NACTO treatments are allowed or not precluded by the MUTCD
- FHWA Bicycle & Pedestrian Funding, Design, & Environmental Review: Addressing Common Misconceptions (August 2015)

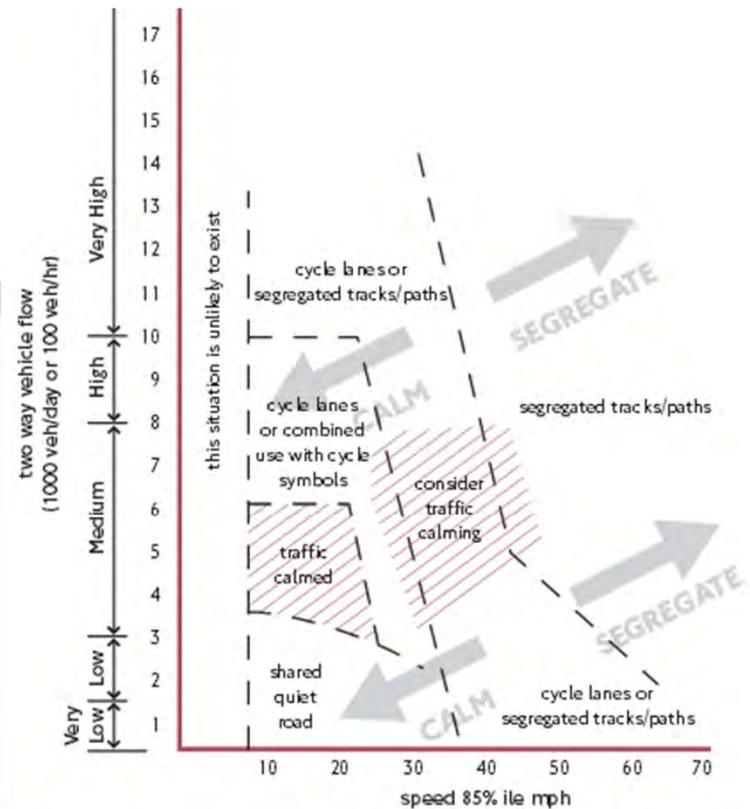
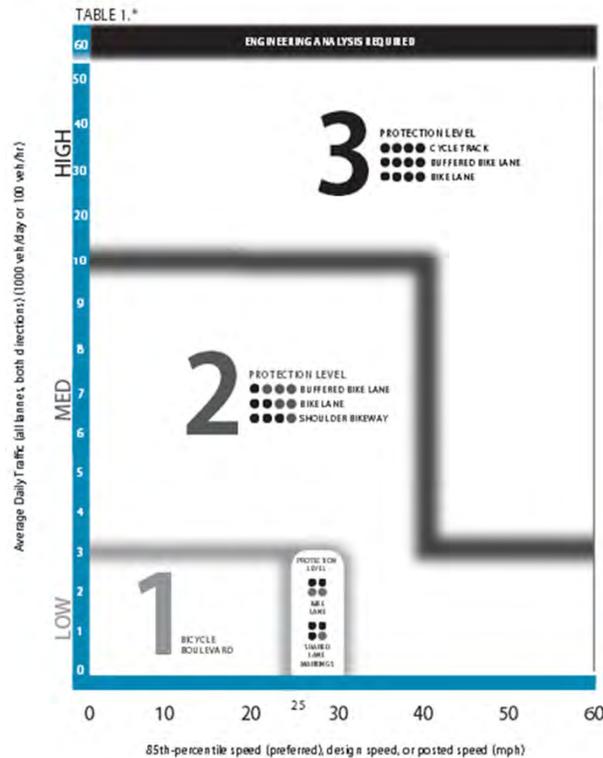
www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/guidance_2015.cfm



The screenshot shows the FHWA website page for the Bicycle and Pedestrian Program. The header includes the FHWA logo and navigation links. The main content area features a green banner with the title "Bicycle and Pedestrian Program" and a photograph of people using a bike path. Below the banner, there is a navigation menu with links for Legislation, Funding, Guidance, and Resources. The main text area displays the title "FHWA Guidance: Bicycle and Pedestrian Provisions of Federal Transportation Legislation" and a date "Updated September 10, 2015". A note indicates the page was revised on September 10, 2015, and lists three bullet points: "Update references to Federal surface transportation legislation.", "To make technical corrections and clarifications.", and "To include references and links to other policies or guidelines and to new links."

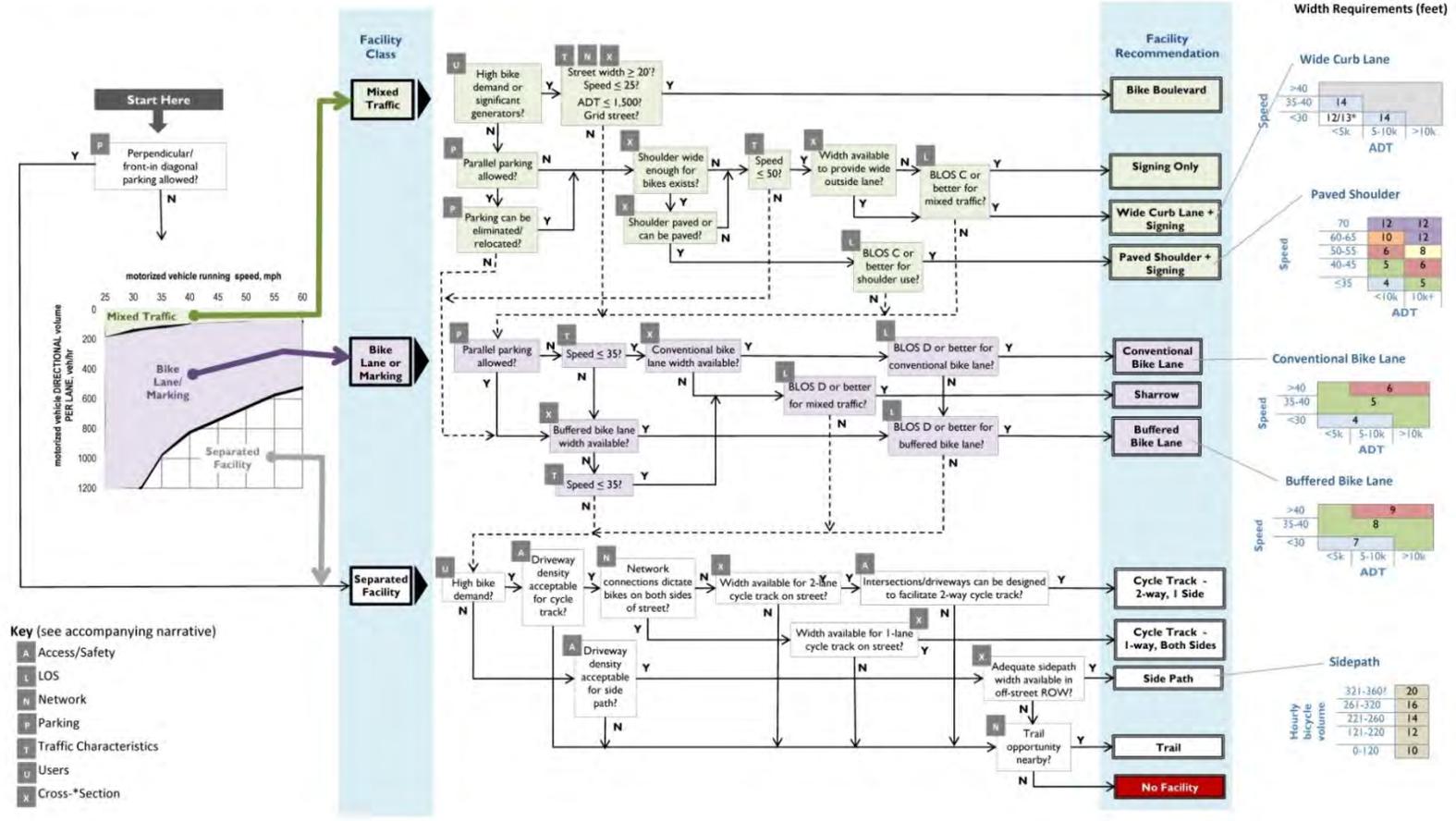
Innovative Tools

- Bicycle Facility Selection Tools



Bicycle Facility Selection Flowchart

8.Nov.2013



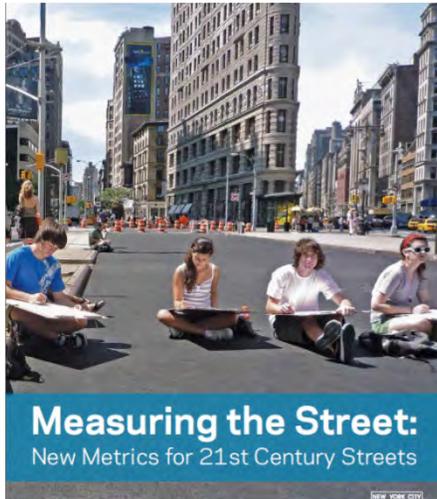


04 Case Studies



The Economic Benefits of Sustainable Streets

New York City Department of Transportation



Measuring the Street: New Metrics for 21st Century Streets

new york city



SAFER STREETS, STRONGER ECONOMIES

Complete Streets project outcomes from across the country



Evaluating Complete Streets Projects: A guide for practitioners



AARP Government Affairs, State Advocacy & Strategy
 William Geller, Smart Growth America
 Marianne Green, Smart Growth America
 Laura Searles, Smart Growth America

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 aarp.org/roads



PROTECTED BIKE LANES MEAN BUSINESS

How 21st Century
 Transportation
 Networks Help
 New Urban
 Economies Boom

A report from PeopleForBikes and
 Alliance for Biking & Walking



RETHINKING STREETS

An Evidence-Based Guide to 25 Complete Street Transformations

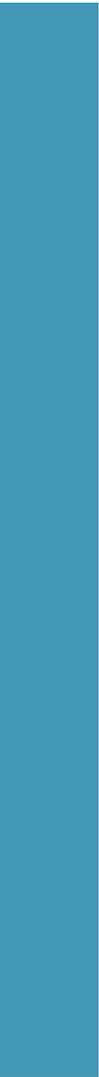


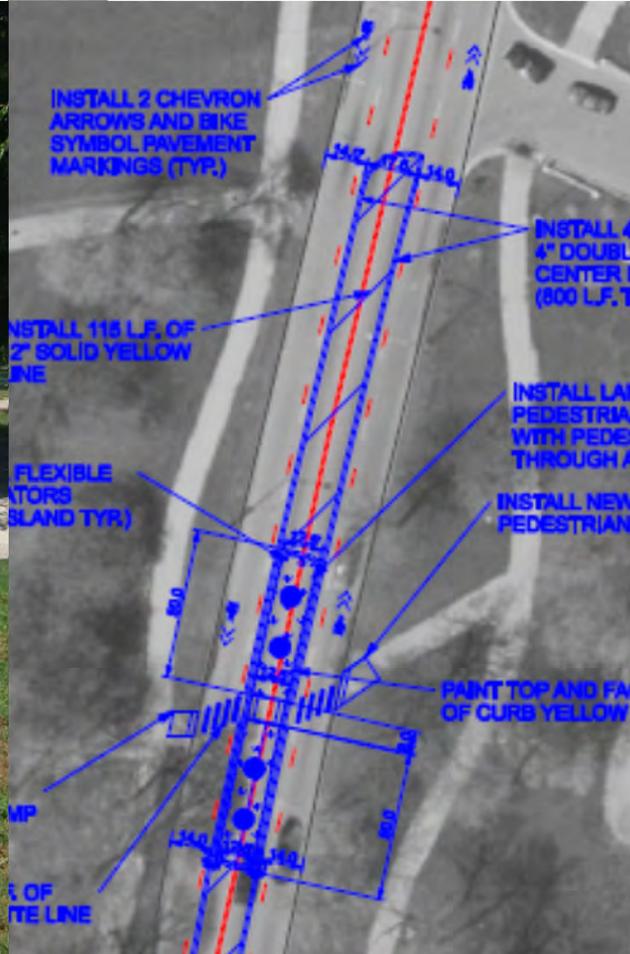
Marc Schlossberg, PhD
 John Rowell, AIA

Humboldt Drive Chicago, IL

- Pilot Road Diet











Bridgeport Way

University Place, WA

- Project Goals:
 - Address high crash history
 - Provide better access to town center
- Key Metrics:
 - Average speeds decreased 13%
 - Crashes reduced 60%
 - Sales tax revenue increased more compared to city-wide average
 - Spawned significant redevelopment





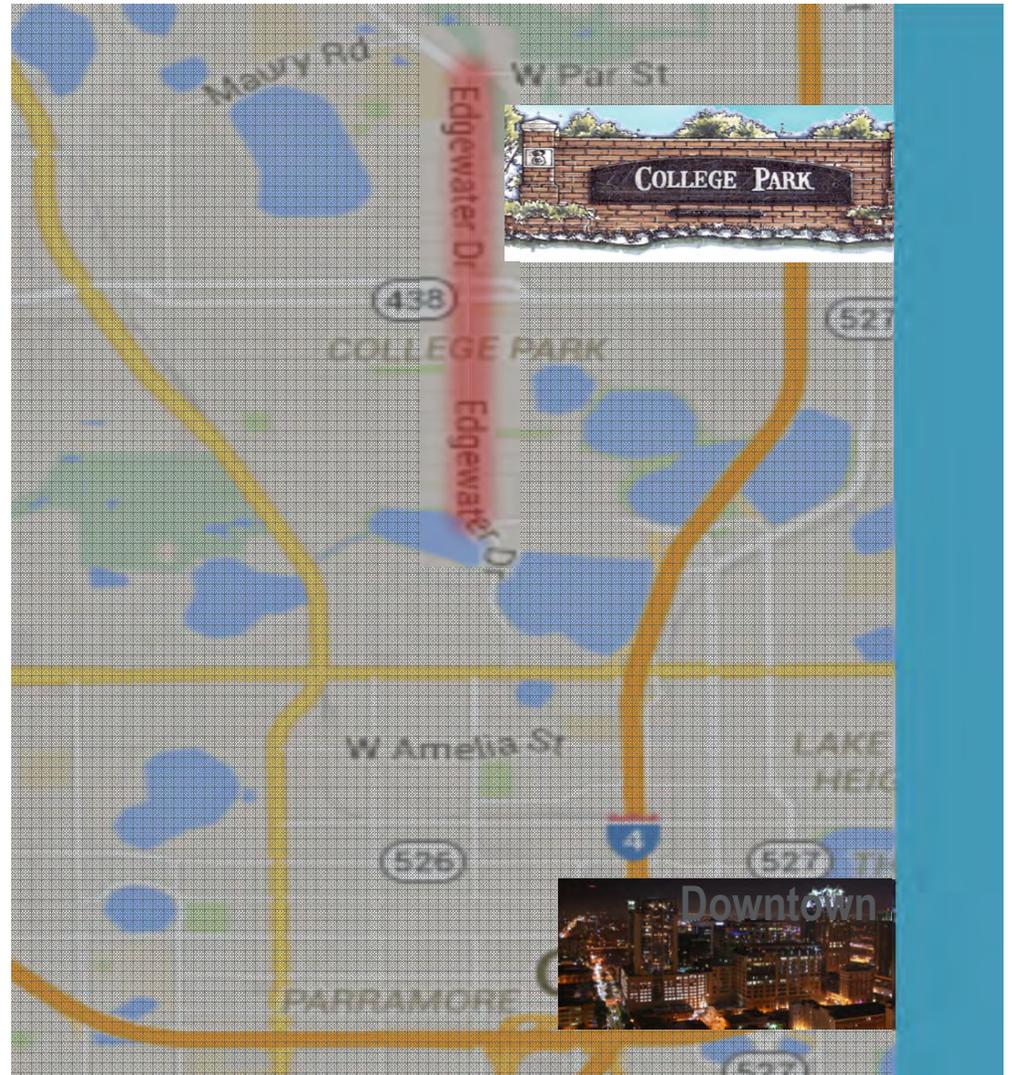
Edgewater Drive

13 Years After a Complete Street Change

Edgewater Dr - Background

Orlando, FL – 2 miles from
Downtown

- 1.5 mile minor arterial
- 9 Signals in 1-mile
(660' avg. spacing)
- Buildings address the
street
- 20,000 ADT



Edgewater Drive - Background

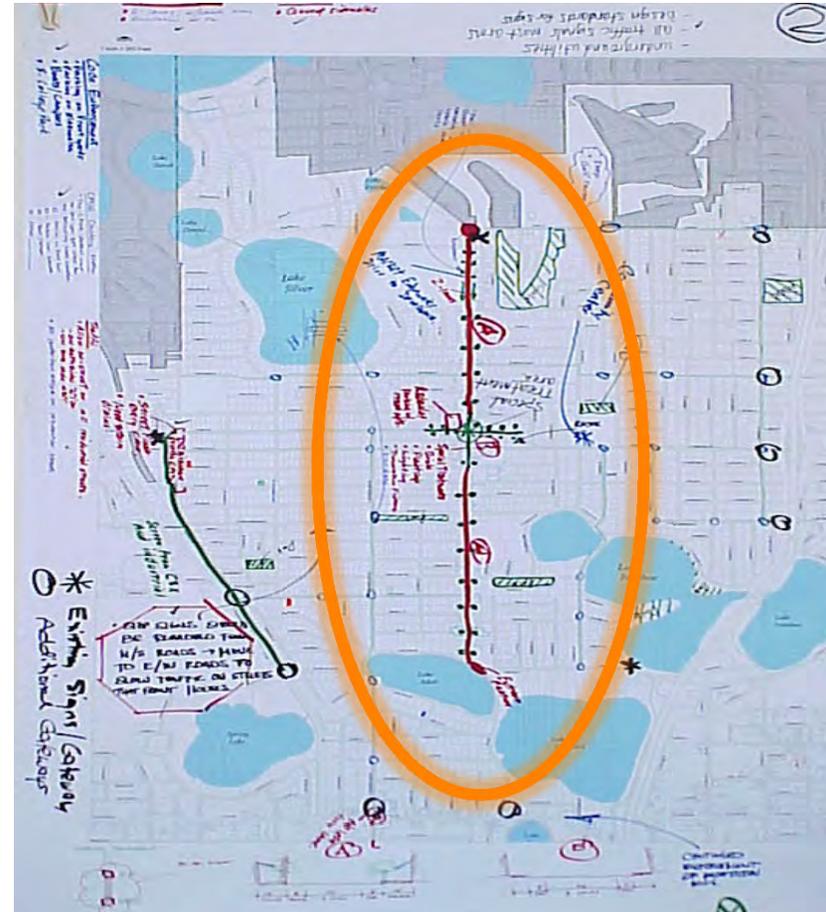
Edgewater Serves as the Main Street for College Park – Pre-WWII Neighborhood



Genesis of the Diet – 1999 Neighborhood Horizon Plan

Focused on Edgewater Dr.

- Village Center Vision
- Beautification
- Pedestrian Friendly
- Bicycle Friendly
- Less Speeding
- City Control of Road



Project Opportunity



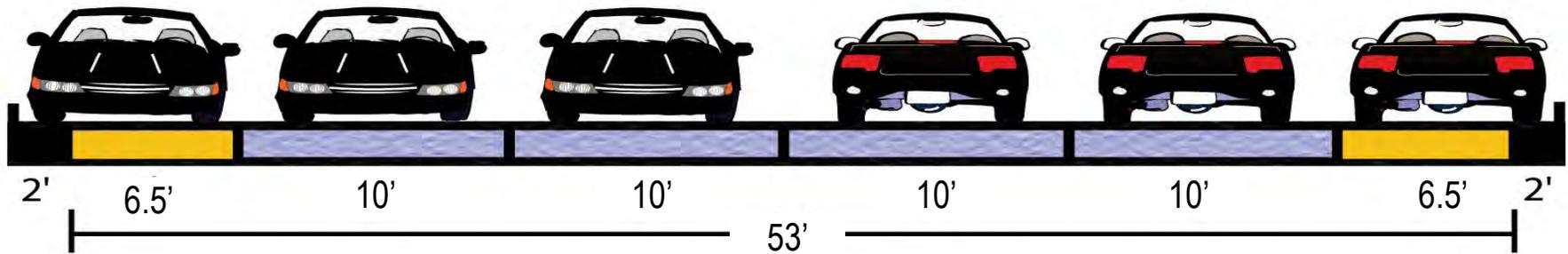
FDOT Resurfacing of Edgewater in Transportation Improvement Program (TIP)



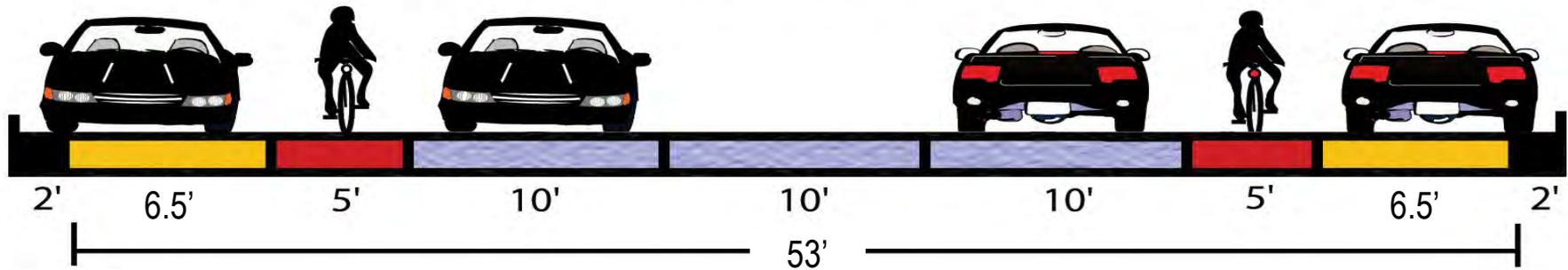
Early Main Street Organization requested a study of a potential road diet

Classic Road Diet

PREVIOUS CROSS SECTION



ROAD DIET



Only Resource at the time - Burden & Lagerway (1999), Road Diets Fixing the Big Roads

Public Process for Study

- Two public workshops, plus presentations to the Neighborhood Association
- Synchro traffic analysis
- Neighborhood Association: favored
- Merchants Association: mixed support



Project Direction



City agreed to take over the road from FDOT



City committed to trial road diet using temporary tape and a before & after analysis



Developed extensive Performance Measures & An Evaluation Matrix



Agreed to have Public Meetings to Discuss the after analysis

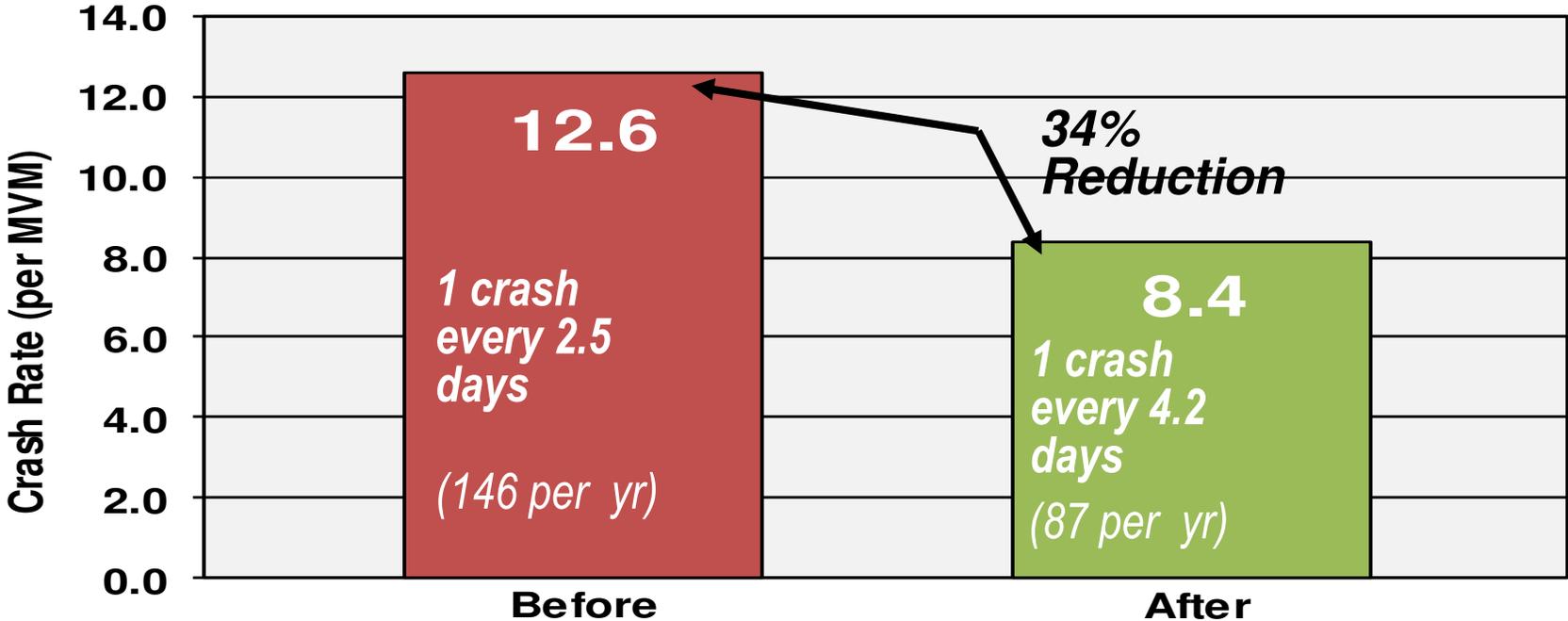
Before & After - Evaluation Criteria

- **Crash Rate**
- **Injury Rate**
- **Speeding Analysis**
- **Edgewater Drive Traffic Volumes**
- **Parallel & Sidestreet Traffic Volumes**
- **On-Street Parking Utilization**
- **Pedestrian Volumes**
- **Bicycle Volumes**
- **Corridor Travel Times**

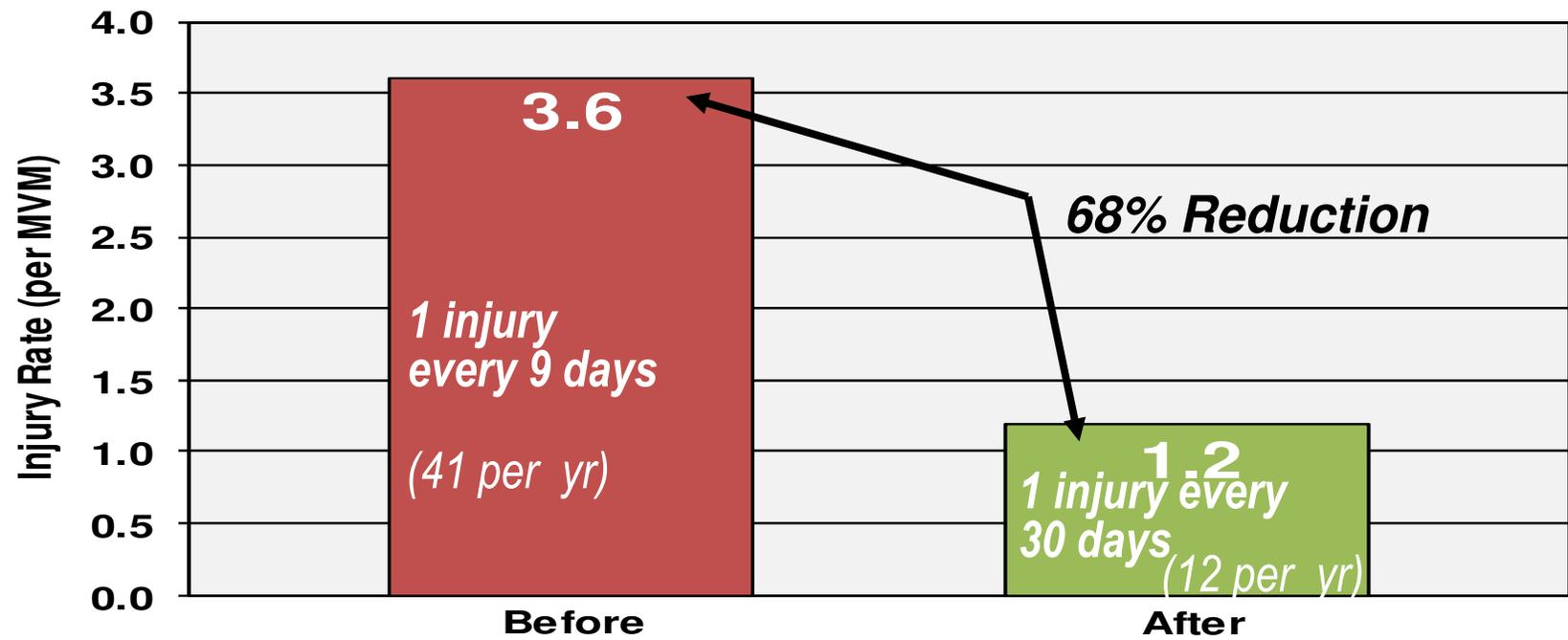
Before data based on three years & after based on four months



Crash Rate



Injury Rate

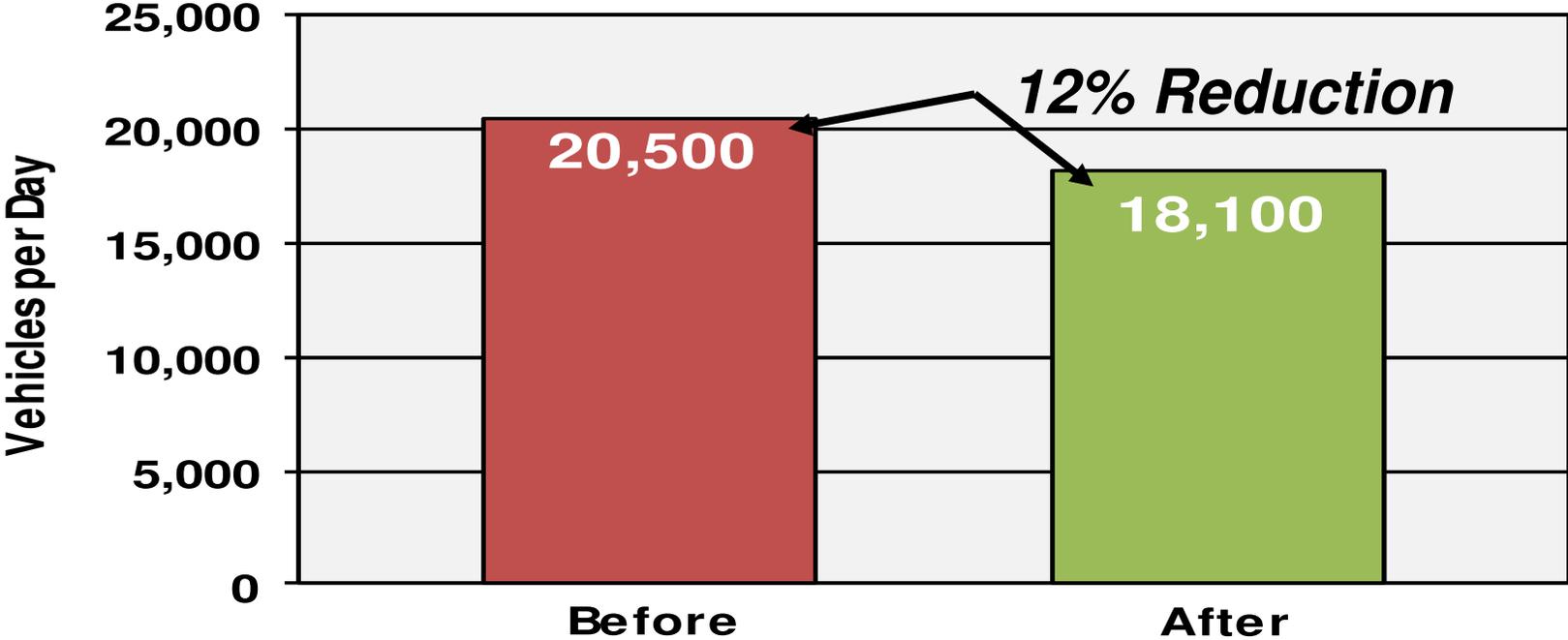


Speeding Analysis

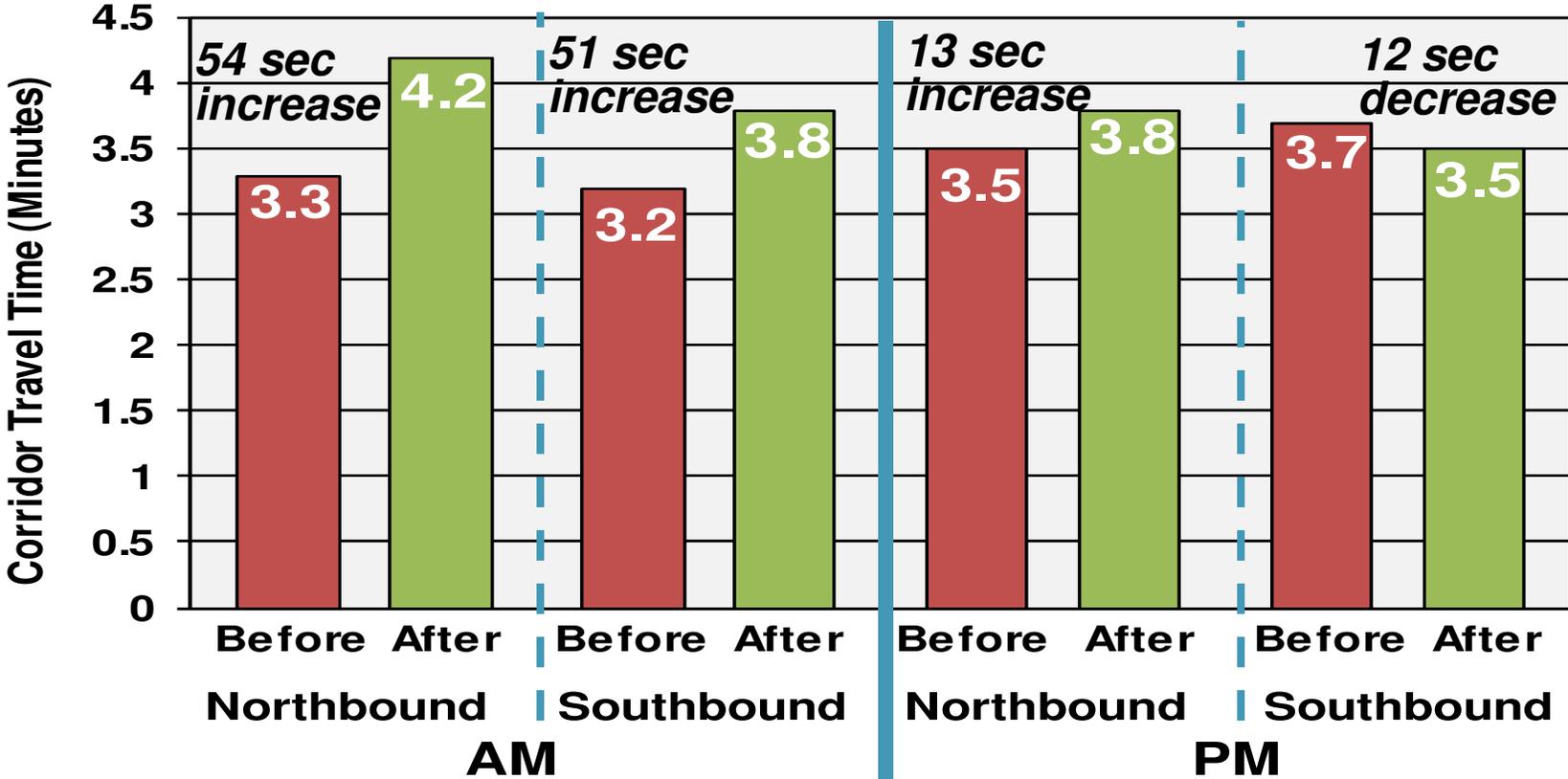


Speed Limit is 30 MPH

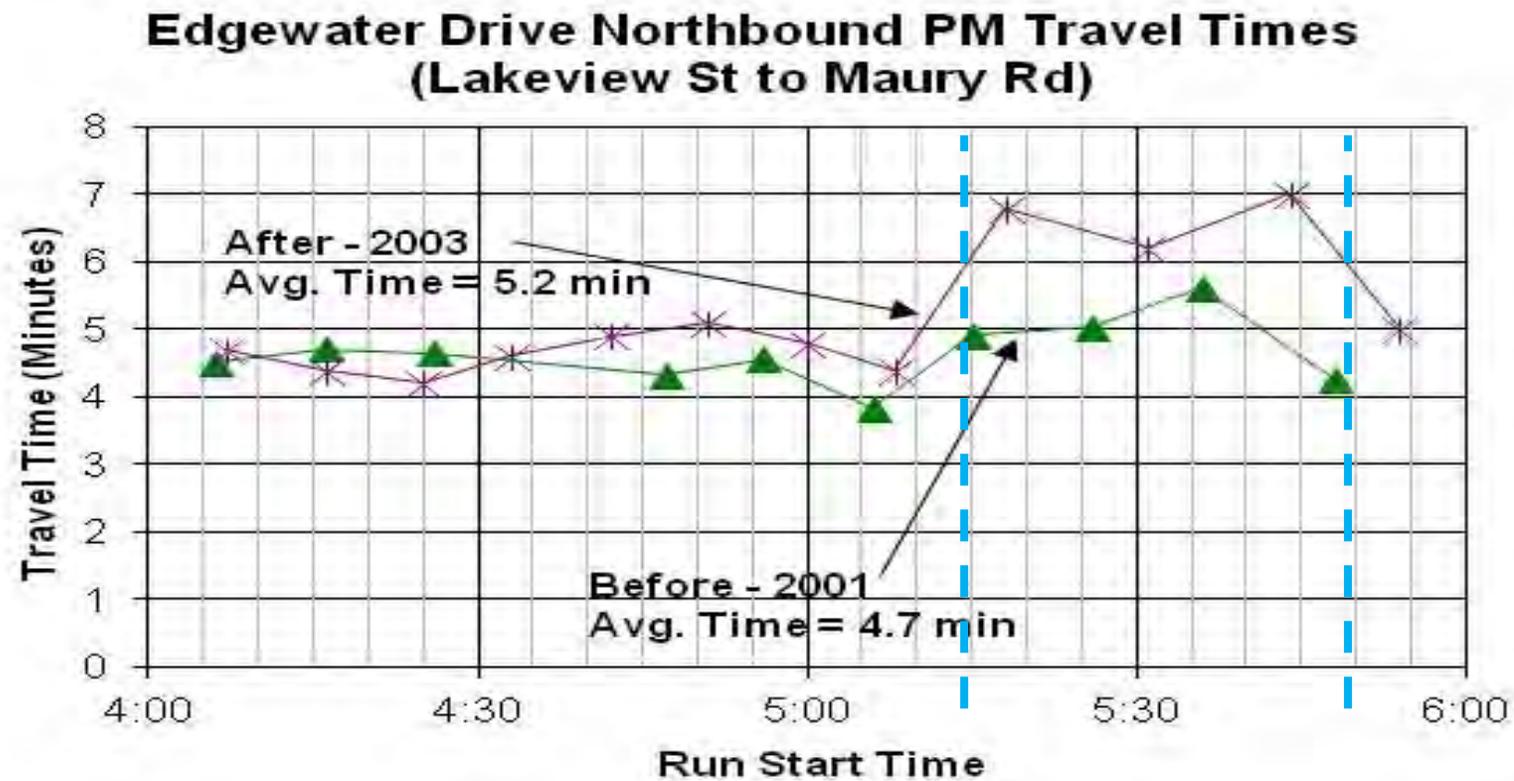
Edgewater Dr Traffic Volumes



Corridor Travel Times – Before Retiming



Travel Time Graphing



After Condition Reflects Signal Retiming in 2003

Project Outcomes

City placed permanent striping in Dec 2002



Project Outcomes

- Road was resurfaced again in 2012
- No one suggested to go back to four lanes



Lessons Learned while Dieting



Research – today there are extensive before and after results, studies & documentation



Analysis / simulation = powerful tool



Traffic signal spacing limited capacity



Public awareness key



Public surveys & comments – nonscientific– try not to give the impression there is a vote



Political support & timing is key



Results – Ten Years Later



7-Story Mixed Use Project Complete



Results – Ten Years Later



ACTIVE MAIN STREET ASSOCIATION



Photos courtesy of Orlando Main Streets

Results – Ten Years Later



Parcels Included	Percent Change In Taxable Value 2000 - 2012
Adjacent to Edgewater	80%
All Parcels within ½ mile of Edgewater	70%
Single Family within ½ mi of Edgewater	77%
Orange County	58%

7 story Development – Not on 2006 Tax Roll

Results – Ten Years Later



**Business District is thriving –
77 net new businesses & 560 new jobs since 2008**

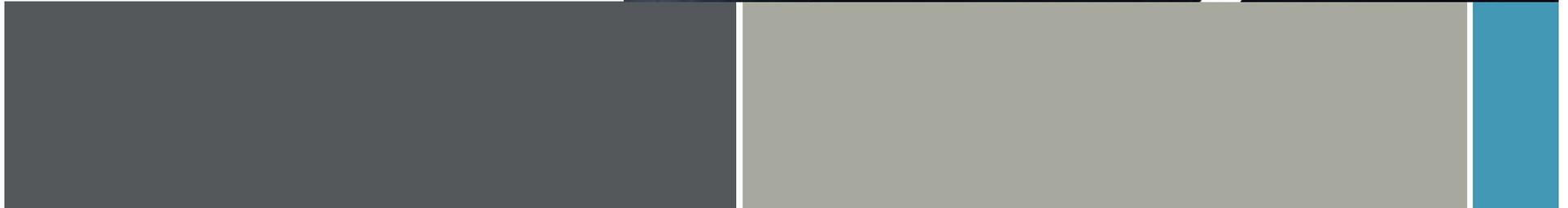
Results – Ten Years Later



Segment to the north (four divided & five lane) resurfaced with narrower lanes for bike lanes

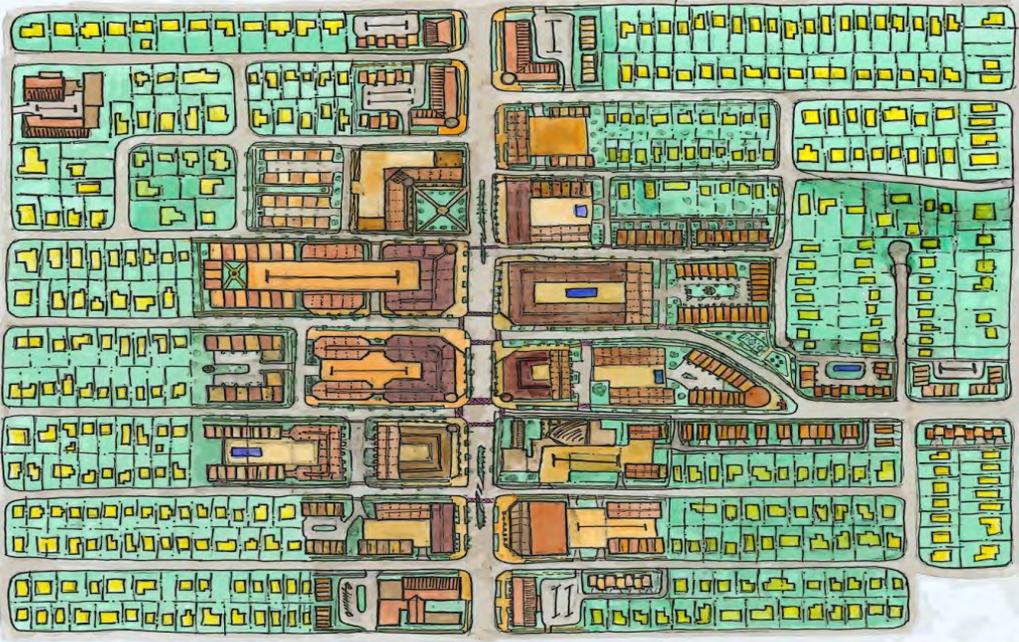
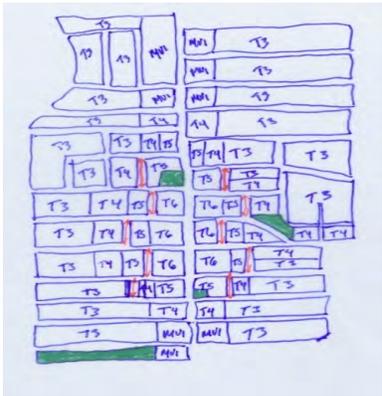
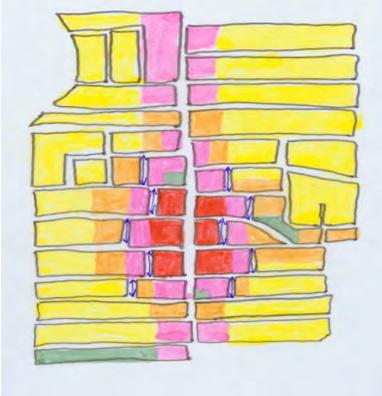
Results – Ten Years Later

Edgewater Vision Task Force –
Completed a Special Plan in
2008



Results – Ten Years Later

Special Plan includes the use of transects



Results – Ten Years Later



Streetscape & ADA upgrades are needed – current streetscape is 20 years old

Results – Ten Years Later



Bike lanes well used, but some concern about dooring

Results – Ten Years Later



Ped activity is high & ADT has increased back to 20,000

Results – Ten Years Later



Parallel street that saw volume increase has traffic calming & has dropped back to its previous level

Results – Ten Years Later



Bike & Pedestrian Crashes Remain Down

Performance Measure	Before ¹	After ²
Crashes Involving Bicyclists	3	1
Crashes Involving Pedestrians	3	1

1. Before Represents an average of 1999, 2000 & 2001 for Pedestrians and 2000 & 2001 for Bicycles (4 lanes)
2. After represents average of 2004-2010 (3 lanes)

Results – Ten Years Later



Crash & Injury Rates Remain Down

Performance Measure	Before ¹	After ²	% Change
Crash Rate (per MVM) ³	12.6	7.0	-45%
Injury Rate (per MVM) ³	3.6	2.0	-44%

1. Before Represents an average of 1999, 2000 & 2001 (4 lanes)
2. After represents average of 2004-2010 (3 lanes)

Results – Ten Years Later



Thank You





05

FDOT Complete Streets Update

A New Day at FDOT

- Complete Streets policy adopted Sept. 2014
- Bicycle & pedestrian focused safety initiative – top 15 high crash counties
- Currently finalizing CS Implementation Plan with Smart Growth America
 - Reviewing needed modifications to policies, guidance, manuals, procedure, and general practices – to put CS policy into action
 - Develop work plan to accomplish document modifications
- D2 Complete Streets ROI Tool



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

POLICY

Effective: September 17, 2014
Office: Design Director
Topic No.: 000-625-017-a

COMPLETE STREETS

It is the goal of the Department of Transportation to implement a policy that promotes safety, quality of life, and economic development in Florida. To implement this policy, the Department will routinely plan, design, construct, reconstruct and operate a context-sensitive system of "Complete Streets." While maintaining safety and mobility, Complete Streets shall serve the transportation needs of transportation system users of all ages and abilities, including but not limited to:

- Cyclists
- Motorists
- Transit riders
- Freight handlers
- Pedestrians



SAFETY DOESN'T HAPPEN BY ACCIDENT.

ALERT TODAY
ALIVE TOMORROW

Funded by the Florida Department of Transportation

A New Day at FDOT

- Five-part implementation framework:
 1. Revising guidance, standards, manuals, policies, documents
 2. Updating decision-making processes
 3. Modify approaches for measuring performance
 4. Managing internal & external communication & collaboration during implementation
 5. Providing ongoing education & training



STATEWIDE LANE ELIMINATION GUIDANCE



FLORIDA DEPARTMENT
OF TRANSPORTATION
TRANSPORTATION
STATISTICS OFFICE

DECEMBER 2014



06

MPO's Role & Examples

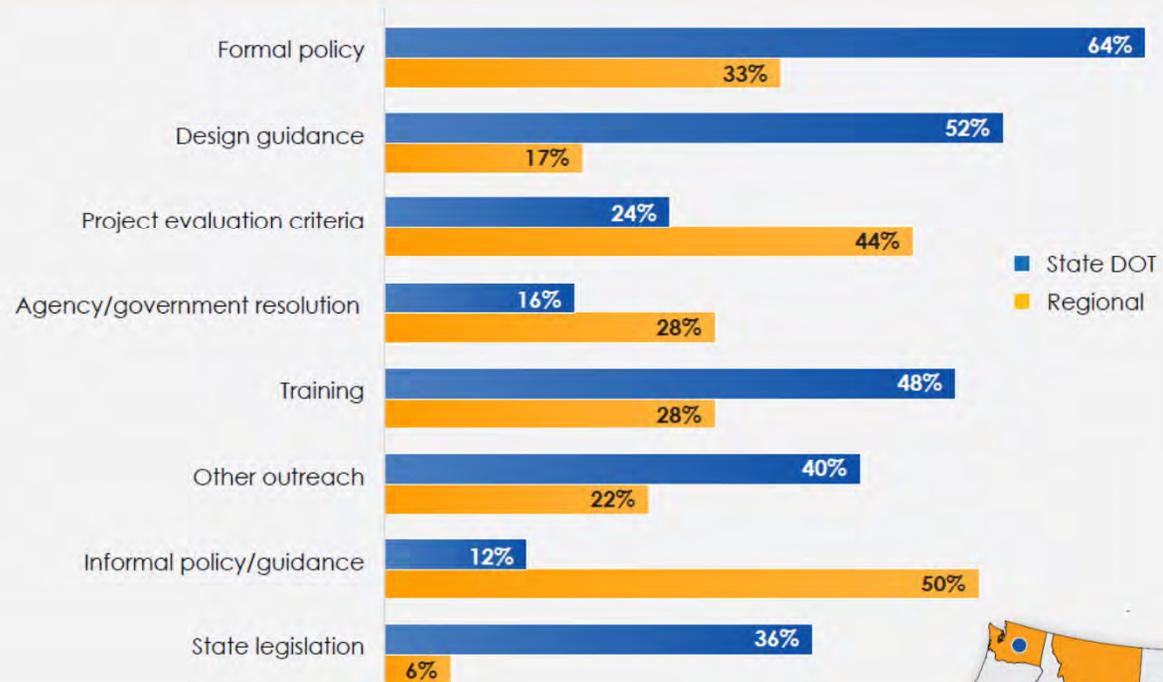
COMPLETE STREETS INITIATIVES ARE INCREASINGLY COMMON:
HOW IS YOUR COMPLETE STREETS APPROACH IMPLEMENTED?

88%

of responding state DOTs and

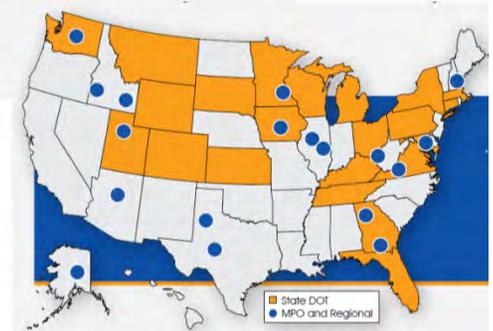
83%

of responding regional agencies address Complete Streets in some way



Survey of 22 state DOTs, 17 MPOs, 1 COG

<http://www.planningsnapshots.camsys.com/pdfs/snapshot6.pdf>



MPO Complete Streets Areas of Activity

- Authored a Complete Streets Guidelines or Handbook
- Adopted a Complete Streets Policy
- Prepared a Model Complete Streets Policy for Local Governments
- Have Specific Funding Program for Complete Streets Projects
- Include Complete Streets Elements in the Prioritization Process
- Include Complete Streets Projects in the LRTP
- Completed Complete Streets Corridor Studies

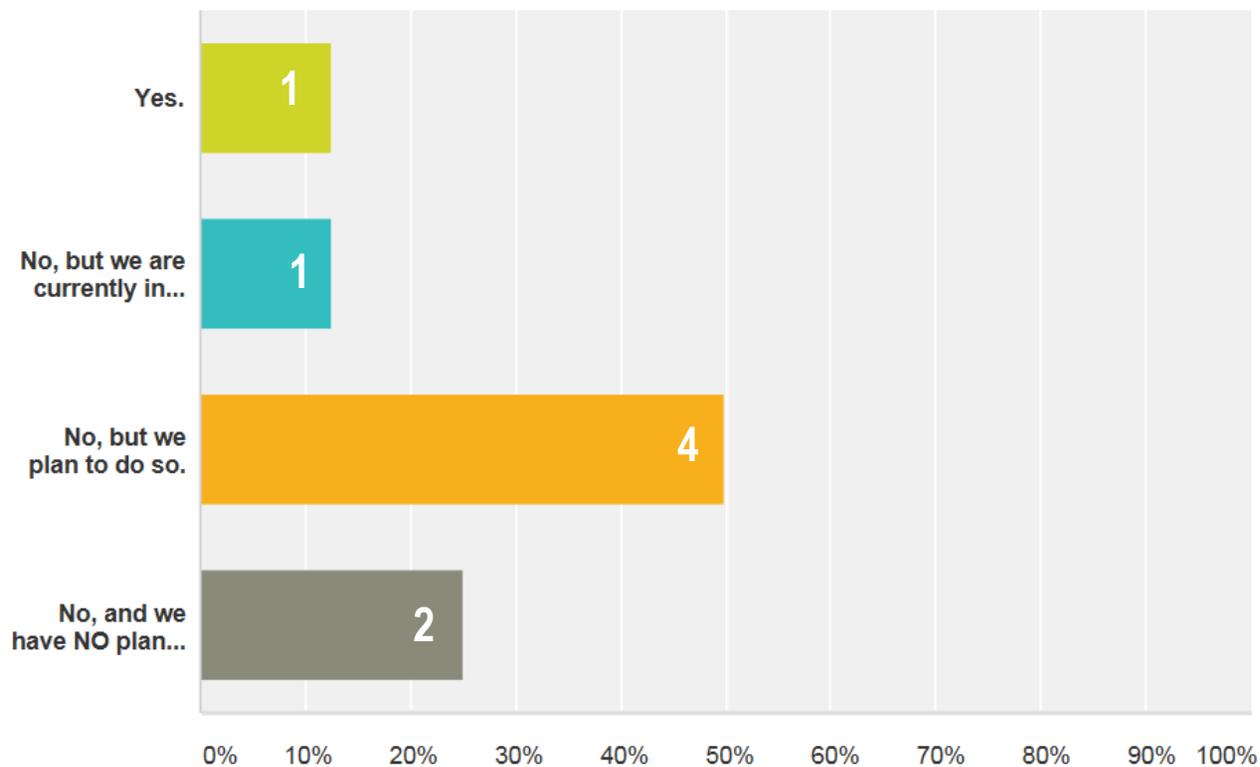


MPO/TPO Complete Streets Survey

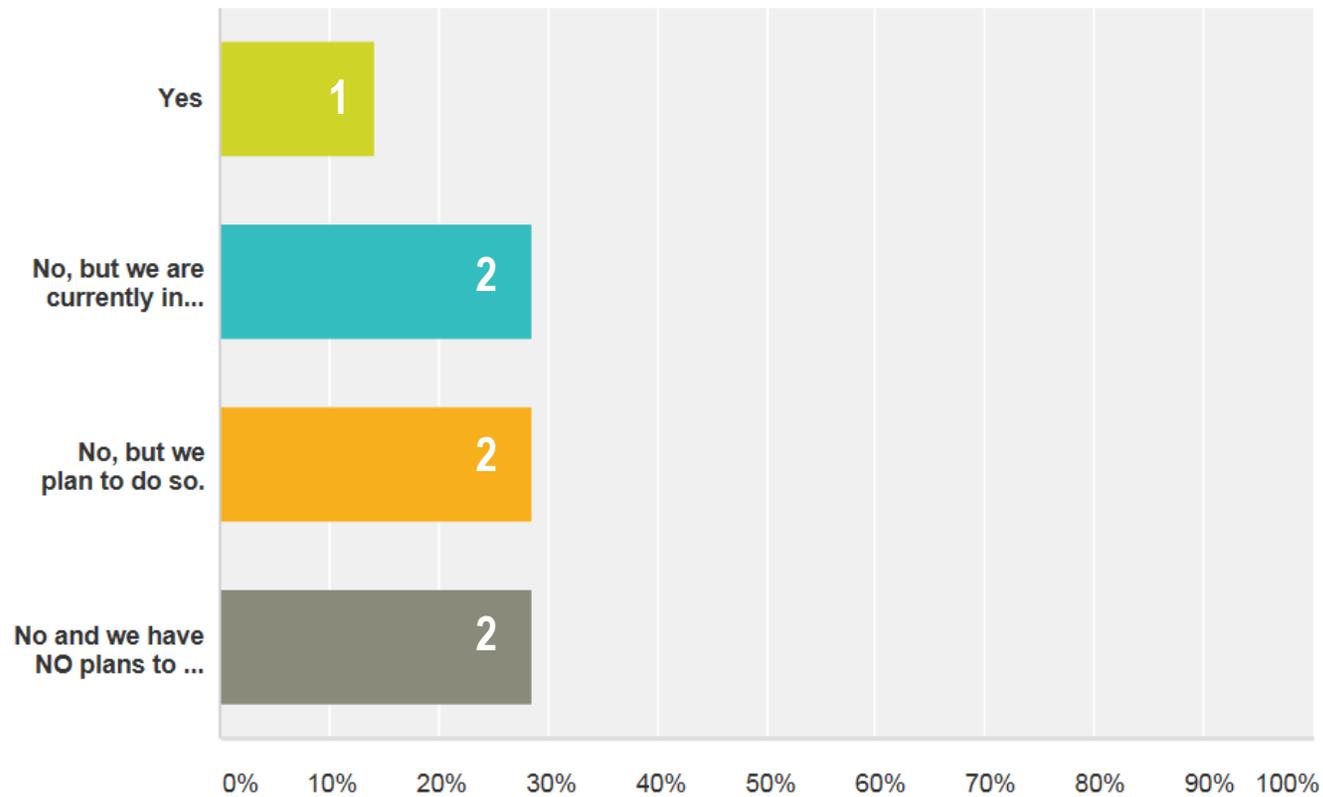
- Sent to 23 MPO/TPO Agencies in Florida
- Received 8 responses
- West Florida Regional Planning Council is staff to three TPOs (they responded)

MPO
St Lucie TPO
Charlotte – Punta Gorda MPO
Gainesville MTPO
Polk TPO
Pinellas MPO
Capital Regional TPA
MetroPlan Orlando
WFRPC – (Three TPOs)

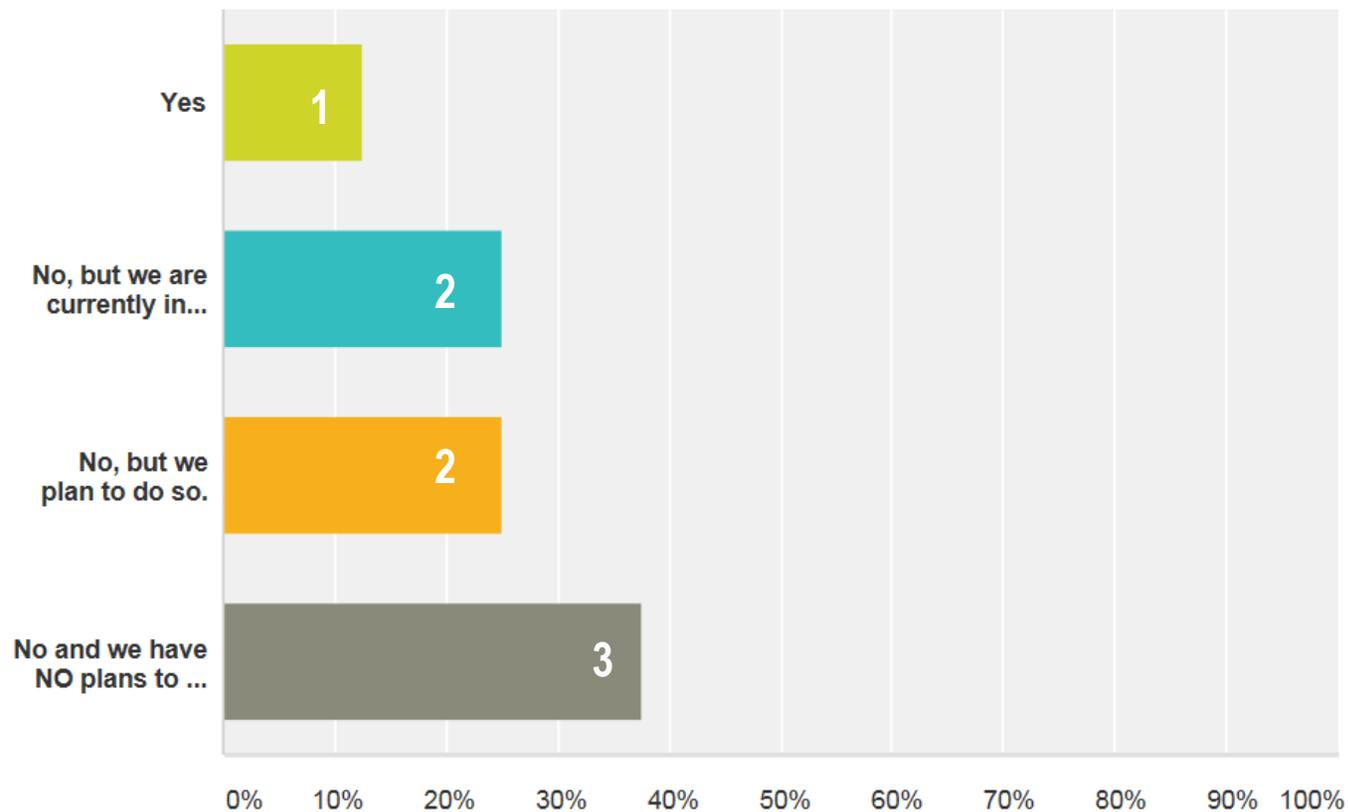
Q1: Has your MPO (or your Consultant for you) authored Complete Street Guidelines or a Complete Streets Handbook?



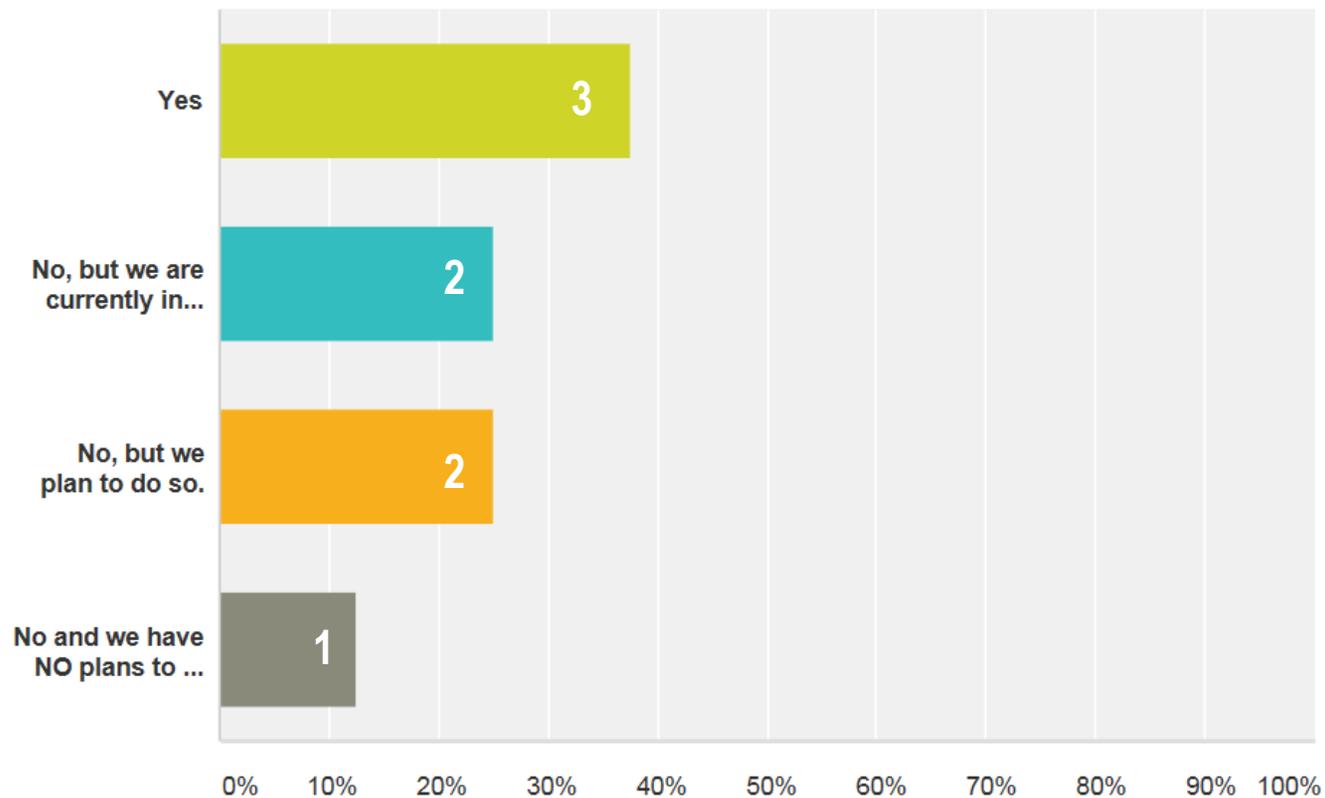
Q2: Has your MPO adopted a Complete Streets Policy or Resolution?



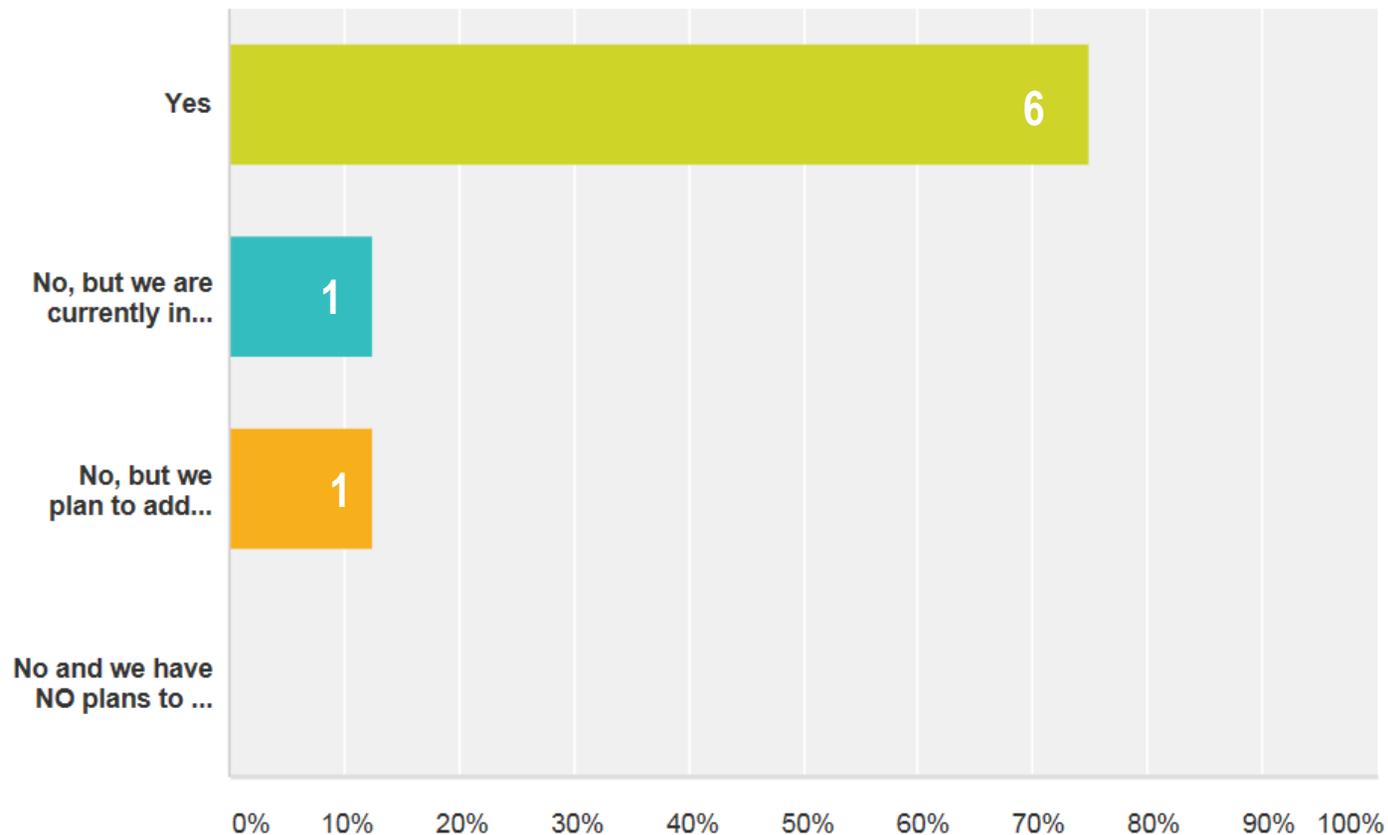
Q3: Has your MPO prepared a Model Complete Streets Policy for Local Governments to Adopt?



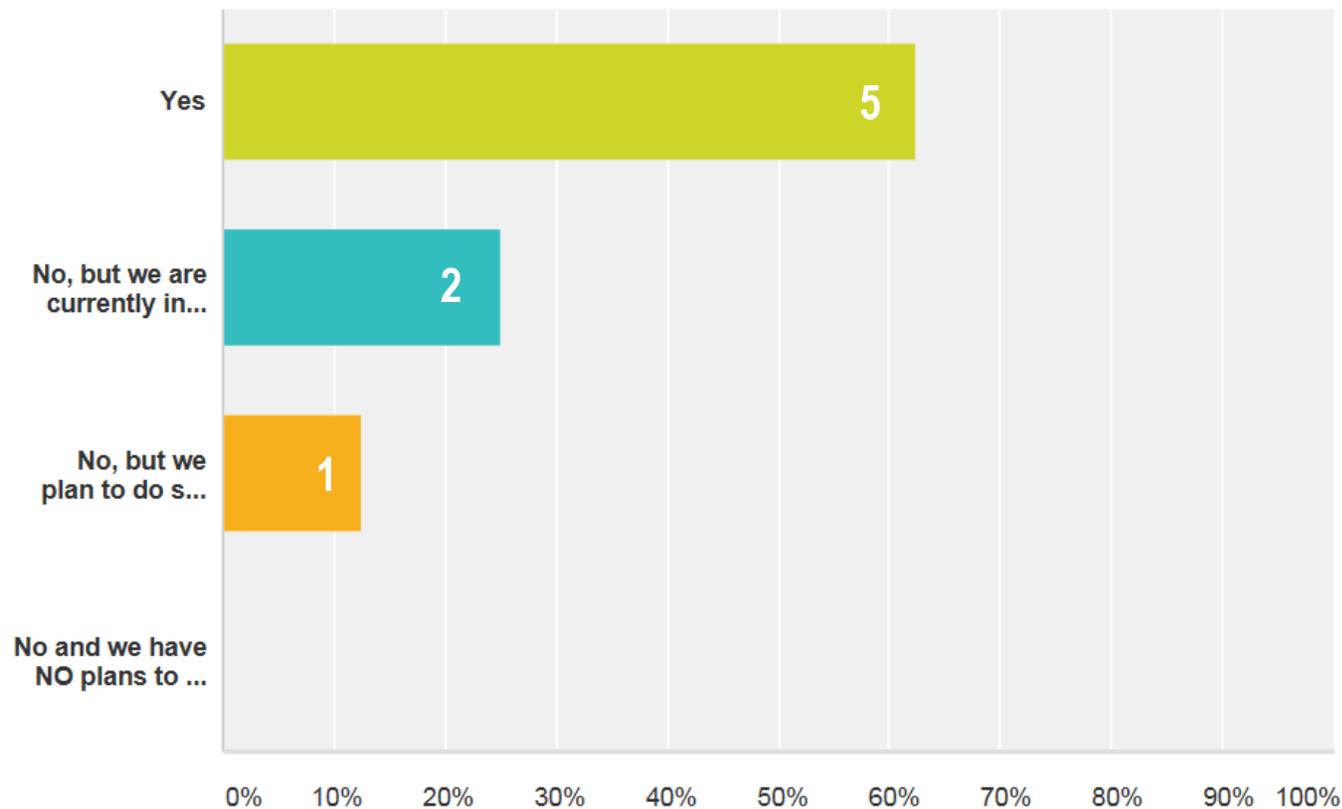
Q4: Does your MPO have a specific funding program or category for Complete Streets Projects?



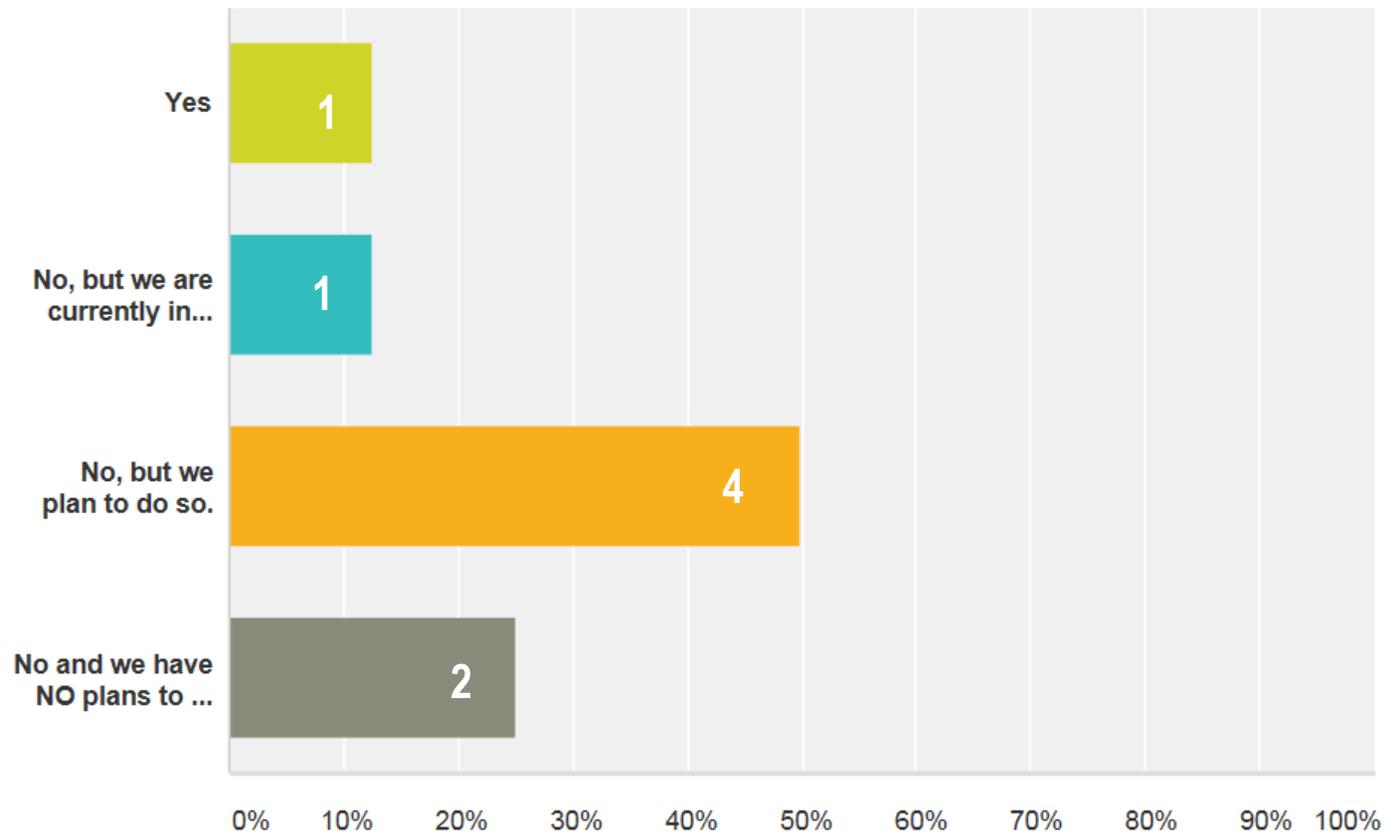
Q5: Does your MPO project prioritization process consider complete streets principles and elements?



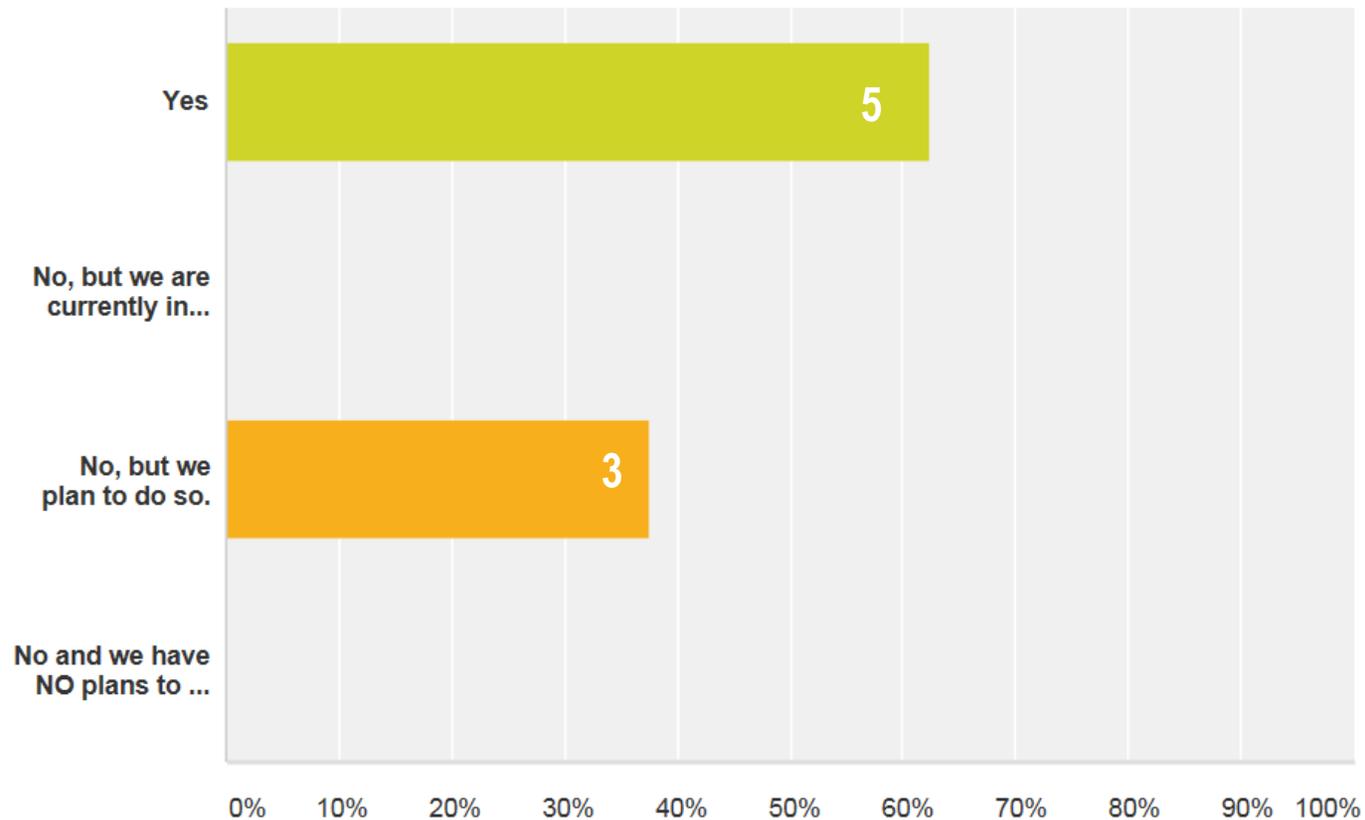
Q6: Does your Adopted Long Range Plan list specific Complete Streets Projects?



Q7: Has your MPO completed a Complete Streets Action or Implementation Plan?



Q8: Has your MPO (or your Consultant) led Complete Streets Corridor Planning for any Specific Corridors?





- Complete Streets Resolution in 2010
- Locally adopted complete street policies
- Funding: Surface Transportation Program allocated over three years to plan and implement Complete Street projects matched by local cities and redevelopment agencies
- 8 current complete street projects
- <http://spacecoasttpo.com/plan/complete-streets/>



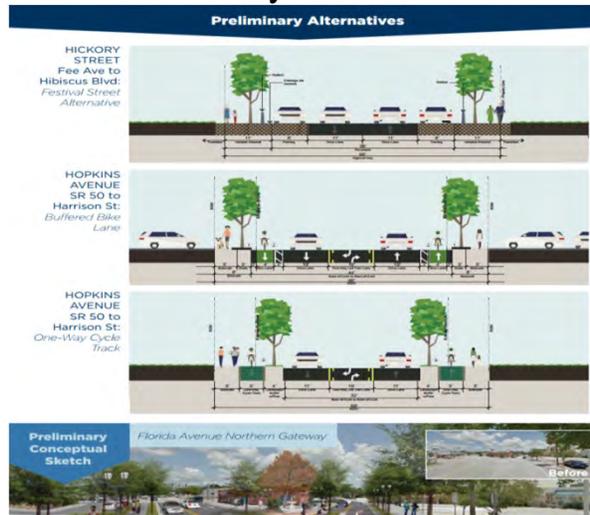
Minutemen Causeway





Complete Streets Evaluation Method

- Identify potential corridors
- Conduct Feasibility Analysis
- Recommend project for funding by Feasibility Analysis

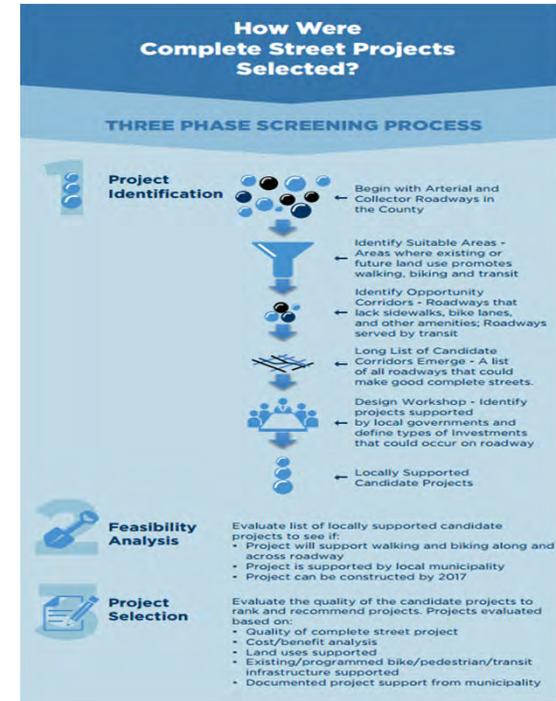


Complete Streets Evaluation Methodology Development and Project Screening Study

What is a complete street?
A roadway where the entire right-of-way is designed and operated to enable safe access for all users. Pedestrian, bicyclists, motorists, and transit riders of all ages and abilities are able to safely move along and across a complete street.

Why are complete streets important?
COMPLETE STREETS ARE SAFE, INVITING, ENGAGING PLACES

- Increase Safety for Pedestrians, Cyclists, and Motorists
- Support Economically Vibrant Communities
- Expand Ability to Move Around
- Support Healthy Communities





Polk Transportation
Planning Organization

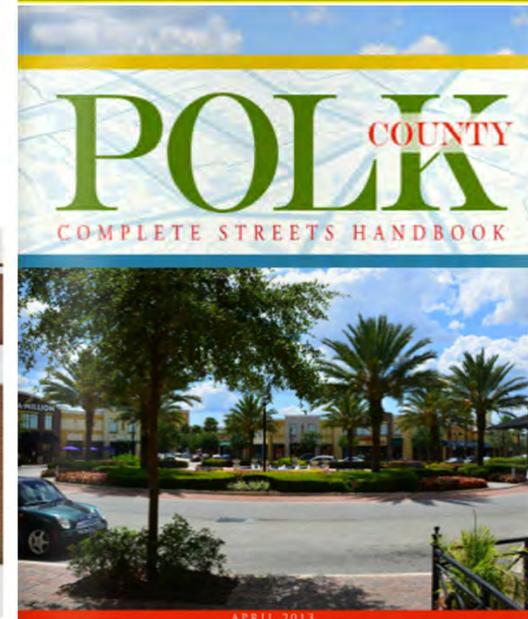
- TPO Complete Streets Policy 2012
- Support the provisions of Complete streets in its planning process
- Provided local government policy for adoption
- Complete Streets Handbook
- Approach and Policy adopted by local municipalities
- Complete Streets Action Plan for Corridors



Designing the Traveled Way

TRAVELED WAY STRATEGY CHECKLIST

- ✓ Road diets
- ✓ Medians
- ✓ Paving treatment
- ✓ Bicycle facilities
- ✓ Bicycle lanes
- ✓ Bicycles at signalized intersections
- ✓ Bicycle boxes
- ✓ Cycle tracks
- ✓ Transit strategies
- ✓ Bus stop location
- ✓ Transit prioritization at intersections
- ✓ Bus bulbs
- ✓ On-street parking
- ✓ Modern roundabouts



- Complete Streets Initiative Adopted in late 2011
- Evaluation Toolkit
 - Evaluate a roadway corridor for a Complete Street project before construction begins
- Training Manual
 - Inform users of the benefits of Complete Street initiatives
- Model Policy
 - Recognized in the 2014 AARP *Complete Streets in the Southeast* toolkit
- Guidelines
 - Unanimously endorsed by the MPO Board in July 2012
- Public Involvement Plan
 - Engage the community in a dialogue about the benefits of Complete Street projects





- Complete Streets Manual
- Complete Streets Toolkit
 - Utilizes five specific improvements for complete street treatments within the right-of-way
 - Pedestrian Improvements
 - Bicycle Improvements
 - Mixed Motor Vehicle and Parking Improvements
 - Green Improvements
 - Transit Improvements



Complete Streets Manual



- Hillsborough MPO Resolution for Complete Streets
- Pedestrian and Bicycle Safety Initiative
- Project: Fletcher Ave. Design: CrossSafe
- Funding: FHWA safety funds through FDOT



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 or call (813) 635-5400. Request a free pedestrian safety presentation for your community or organization at 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



Complete Streets Corridor Study – Leesburg, FL





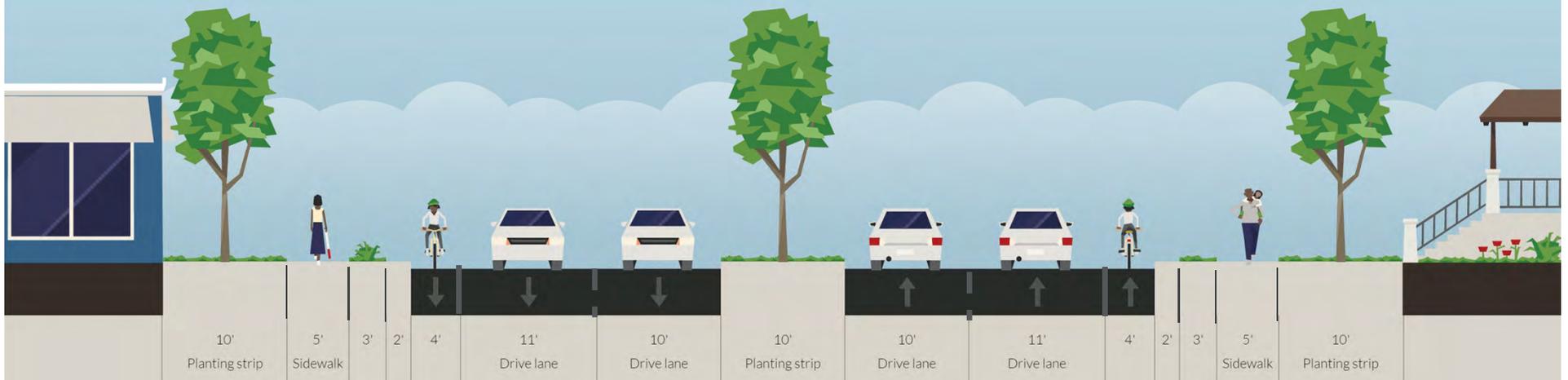
Significant Truck Traffic On the Corridor – Peds are close to trucks



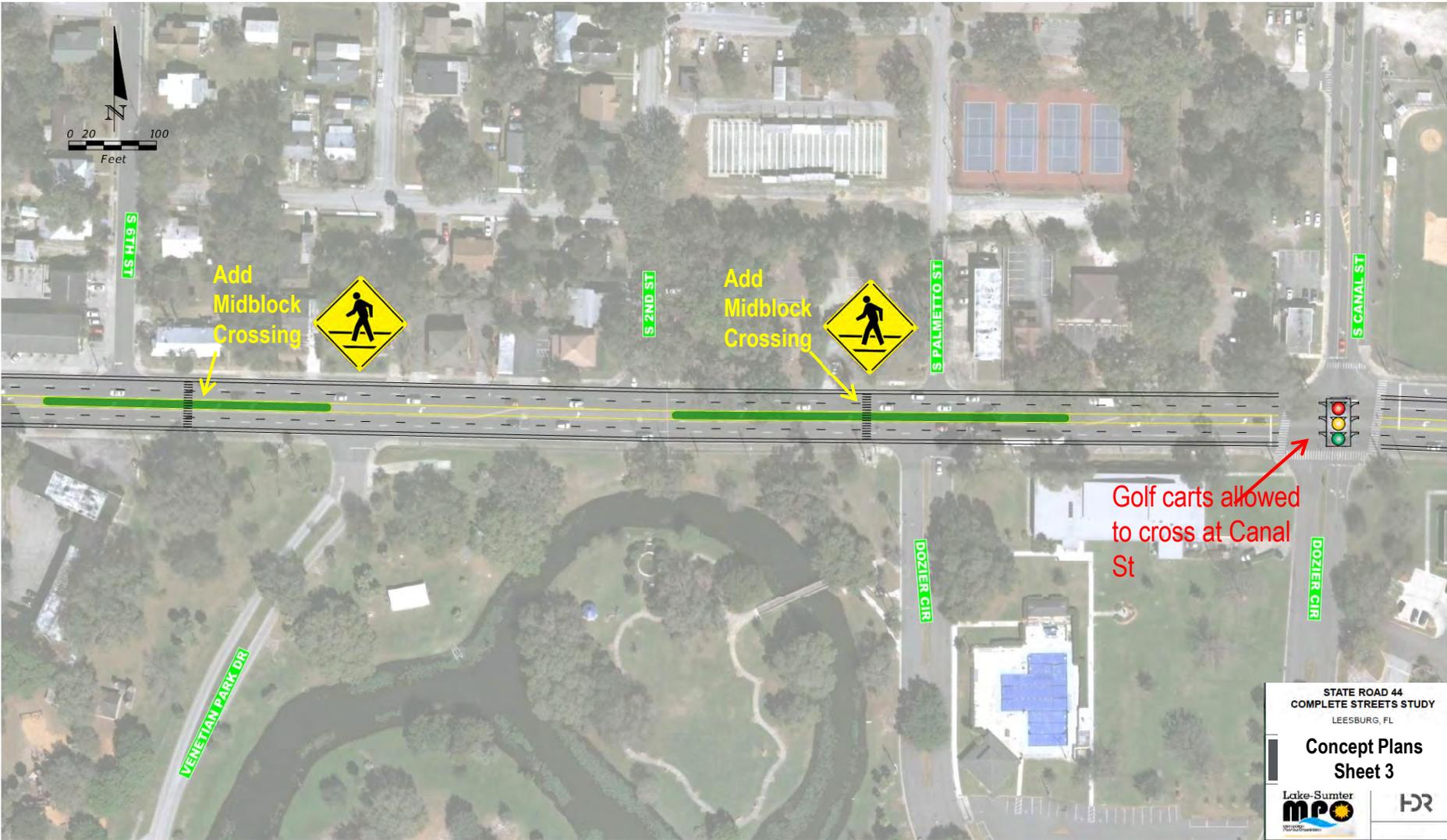
Pedestrians Crossing at Unsignalized Location

Dixie Ave Alt 1 (Island)

Recommended



Median islands to provide pedestrian refuge and landscaping to calm traffic.



Add
Midblock
Crossing



Add
Midblock
Crossing



Golf carts allowed
to cross at Canal
St

STATE ROAD 44
COMPLETE STREETS STUDY
LEESBURG, FL

**Concept Plans
Sheet 3**



07

Complete Streets Policy

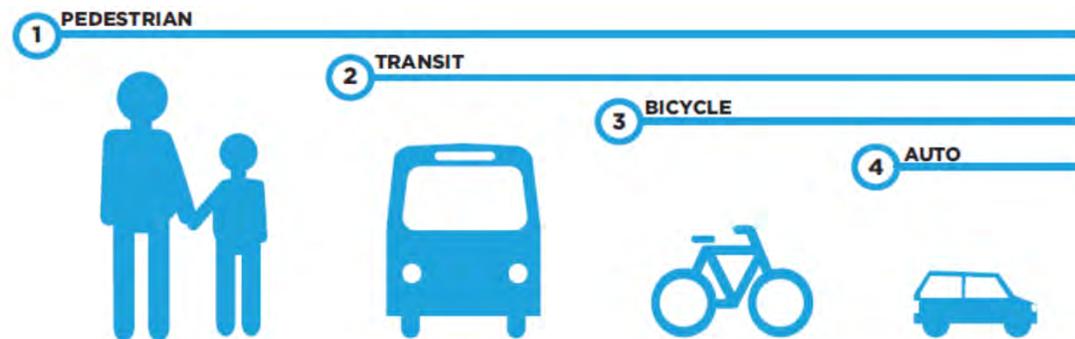
Ideal CS Policy Elements

1. Vision
2. All users & modes
3. All projects & phases
4. Clear, accountable exceptions
5. Network
6. Jurisdiction
7. Design
8. Context sensitivity
9. Performance measures
10. Implementation steps



CS Policy – Food for Thought

- Incorporate “comfort”
- Does “efficient” refer to resources and/or time/speed?
- Network vs. all streets
- Exceptions: not making streets complete should be difficult
- Best practice / design guidance should not conflict with the CS policy
- Policy should reprioritize the modal emphasis & hierarchy
- CS projects should not require “special” funding sources





Implementing Complete Streets Through the MPO

Jeff Arms, AICP, PE, PTOE, PMP
Jamie Krzeminski, PE, PTOE

