

PEDSTED

PEDESTRIAN SAFETY THROUGH ENVIRONMENTAL DESIGN

BY MAYOR RICHARD J. KAPLAN
CITY OF LAUDERHILL, FLORIDA
FLORIDA LEAGUE OF CITIES
UPDATED AUGUST, 2017

STATISTICS

FLORIDA PEDESTRIAN DANGER INDEX (PDI)

PDI is a calculation of the share of local commuters who walk to work and the most recent data on pedestrian deaths

4th CONSECUTIVE YEAR AS FLORIDA BEING THE MOST DANGEROUS STATE

8.4 % WORSE THAN 2 YEARS AGO

2005-2014 THERE WERE 5142 DEATHS IN FLORIDA

PDI INDEX OF 177

ALABAMA 2nd WITH A PDI INDEX OF 136

NATIONAL AVERAGE OF 52

2014 - SOUTH FLORIDA IS RANKED NATIONALLY #11 AS MOST DANGEROUS PLACE FOR PEDESTRIANS

IMPROVE FROM #4, BUT WITH ONLY A DECREASE OF .02%

OTHER AREAS OF COUNTRY JUST BECAME WORSE

“NO SINGLE FACTOR IS COMPLETELY RESPONSIBLE FOR THE PROBLEM OF PEDESTRIAN-VEHICLES CRASHES RESULTING IN INJURIES AND FATALITIES. A COMBINATION OF UNSAFE PEDESTRIAN BEHAVIOR, VEHICLE AND DRIVER FACTORS, PROBLEMATIC PHYSICAL ENVIRONMENTS AND OTHER SPECIAL CONDITIONS ALL CONTRIBUTE TO THEM.”

Campbell, B.C. Zegeer, H. Husang and M. Cynecki (2004), A Review of Pedestrian Safety Research in the United States and Abroad. USDOT, FHA

“ IN A RECENT STUDY OF 7,000 PEDESTRIAN-VEHICLE CRASHES IN FLORIDA, RESEARCHERS DISCOVERED THAT PEDESTRIANS WERE AT FAULT IN 80% OF THESE INCIDENTS.”

Lee, C, and M. Abdel-Aty (2005) “Comprehensive Analysis of Vehicle-Pedestrian Crashes at Intersections in Florida.” Accident Analysis and Prevention.

- ▣ “THE WAY WE DESIGN STREETS IS A FACTOR IN THESE FATAL CONDITIONS. MANY OF THE DEATH OCCUR ON STREETS WITH FAST MOVING CARS AND POOR PEDESTRIAN INFRASTRUCTURE. PEOPLE WALKING ALONG THESE ROADS DESPITE THE CLEAR SAFETY RISKS – A SIGN THAT STREETS ARE NOT ADEQUATELY SERVING EVERYONE IN THE COMMUNITY.”

▣ Dangerous by Design 2016, Smart Growth America

Florida: Types of Pedestrian Crashes

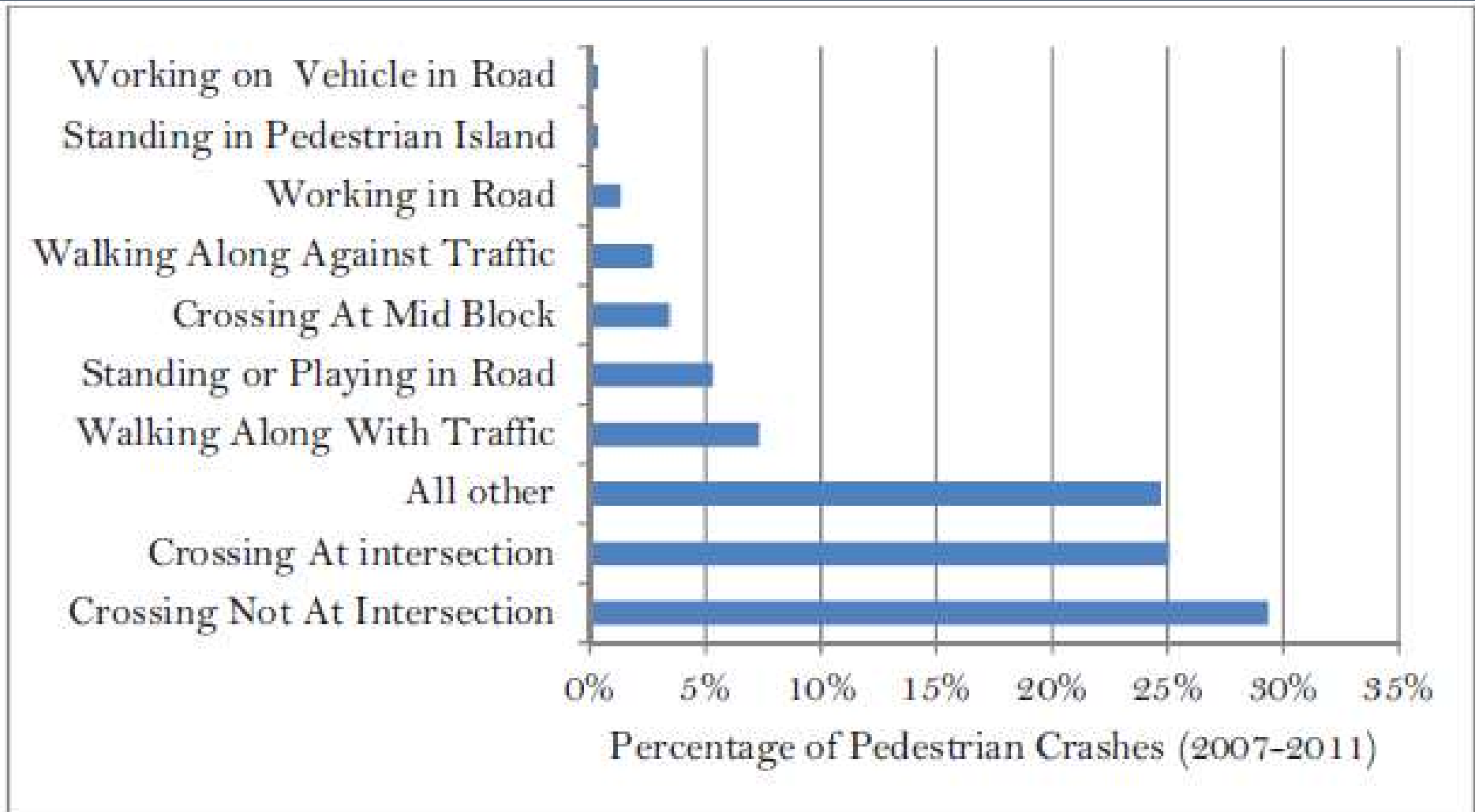


Figure 2-12. Statewide pedestrian crashes by pedestrian action.

Source: FDOT CAR System.



Jaywalker crossing on University Drive



“MIDBLOCK CROSSING IS IMPLICATED IN 55 PERCENT OF ALL FATAL PEDESTRIAN-VEHICLE CRASHES.”

Cui, Z., and S. Nambisan (2003). “Methodology for Evaluating the Safety of Midblock Pedestrian Crossings.” *Transportation Research Record*.

“IF CONVENIENT MIDBLOCK CROSSWALKS WERE AVAILABLE AT POPULAR CROSSING POINTS, PEDESTRIANS COULD CROSS THESE AREAS THAT WOULD OTHERWISE BE UNSAFE AND ILLEGAL.”

Heinonen, Justin A., and John E. Eck (2007). “Pedestrian Injuries and Fatalities Guide No. 51.” *Center for Problem-Oriented Policing*.

Median brick walkway located in area which is not designated for a midblock crossing on University Drive



NON PEDSTED APPROACH

METHODS OF IMPROVING PEDESTRIAN WALKING BEHAVIOR WITHOUT MAKING ENVIRONMENTAL CHANGES:

EDUCATION & ENFORCING JAYWALKING:

- 1) OFTEN A LOW PRIORITY OR POLICE, CREATING CONFLICTS BETWEEN RESIDENTS AND CITY OFFICIALS. CONSIDERED A NUISANCE TO ENFORCE.
- 2) LAUDERHILL CREATED PROGRAM:
6 MONTHS, 1046 PEDESTRIAN WARNINGS AND 87 TICKETS

A NEW APPROACH – PEDSTED

METHODS OF IMPROVING PEDESTRIAN
WALKING BEHAVIOR BY MAKING
ENVIRONMENTAL CHANGES:

PEDSTED - PEDESTRIAN SAFETY THROUGH
ENVIRONMENTAL DESIGN

(LIKE: CPTED – CRIME PREVENTION THROUGH
ENVIRONMENTAL DESIGN)

PART OF THE COMPLETE STREET PROGRAM

PEDESTRIANS CROSSING STREETS IN LOCATIONS OTHER THEN AT CROSSWALKS

SOLUTION #1: RAILING ALONG SIDEWALKS

RESULT: BY PREVENTING PEDESTRIANS FROM CROSSING IN DANGEROUS, UNDESIGNATED AREAS THEY WILL BE FORCED TO CROSS AT SAFER DESIGNATED PLACES.

SOLUTION #2: MID-CROSSING BARRIERS USING LANDSCAPING, FENCES AND HUMPS

Berger, in R. Retting, S. Ferguson and A. McCartt, (2003). "A Review of Evidence-Based Traffic Engineering Measures Designed to Reduce Pedestrian-Motor Vehicle Crashes." American Journal of Public Health



**SIMPLE BARRIERS.
BARRIER CAN BE
MOVED FORWARD TOO.**



A GOOD EXAMPLE OF A PEDSTED MIDBLOCK BARRIER PREVENTING PEDESTRIANS FROM CROSSING. ON HALLANDALE BEACH BLVD. IN HALLANDALE BEACH.



BUT NOTE







HOWEVER, AS PREVIOUSLY
STATED, EVEN IF PEDSTED
PRINCIPLES ARE APPLIED,
THERE ARE THOSE THAT WILL
IGNORE SAFETY MEASURES



GOOD PEDSTED BARRIER WITH BREAK IN LANDSCAPING. NOTICE THE PEDESTRIAN CROSSING ON HALLANDALE BEACH BLVD.



- ▣ LAUDERHILL'S FIRST PEDSTED PROJECT
- ▣ W. OAKLAND PARK BLVD. BETWEEN 55TH AND 56TH AVENUE



2014 FDOT STUDY COVERING
2008-2012 TRAFFIC INFO:
COLLISSIONS WITH
PEDESTRIANS = 23
FATAL CRASHES = 3

LAUDERHILL POLICE REPORTS
2015-2016
AVERAGES 2 to 3
COLLISSIONS/YEAR

WHEN CONSTRUCTION STARTED THE CITY
RECEIVED THIS EMAIL FROM THE SITE:

“Pedestrian traffic is out of control! I have triple the amount of cones delineating the construction zone. Pedestrians are cross mid block as if nothing is going on. They are walking in between and around active equipment, walking over landscape material that has been pulled out of the ground as part of the demolition, stepping over stacks of brick pavers that have been removed, etc.”

IN ONE HOUR ALONE 50 PEOPLE ENTERED
THE CONSTRUCTION AREA CREATING AN
IMMEDIATE SAFETY ISSUE









POSITIVE UNANTICIPATED SIDE EFFECTS:

- 1) DESIGN WAS SO POSITIVELY RECEIVED THAT FUTURE MEDIAN IMPROVEMENTS IN THE CITY WILL ADOPT THIS DESIGN
- 2) WHILE THE PROJECT WAS NOT DESIGNED TO ADDRESS CRIME, IT APPEARS THAT IT HAS REDUCED PANHANDLING IN THE AREA (A CPTED CONCEPT)

THE END

COMMENTS?



Saving Lives on Our Roads

Local Initiatives that Change Behaviors

Dr. Scott Paine
Director
Leadership Development and Education
Florida League of Cities



Does Florida Really Have a Problem?

Florida is the most dangerous state for pedestrians



Kristina Webb - Palm Beach Post Staff Writer
12:42 p.m Tuesday, Jan. 10, 2017 Filed in Local News

Florida home to seven most dangerous regions for pedestrians, study shows



Christopher O'Donnell, Times Staff Writer
Tuesday, January 10, 2017 5:30am

TRANSPORTATION

These are the most dangerous U.S. cities for pedestrians

Most of them are in Florida

BY ALISSA WALKER | @AWALKERINLA | JAN 10, 2017, 9:30AM EST



Smart Growth America
Improving lives by improving communities

DANGEROUS BY DESIGN 2016

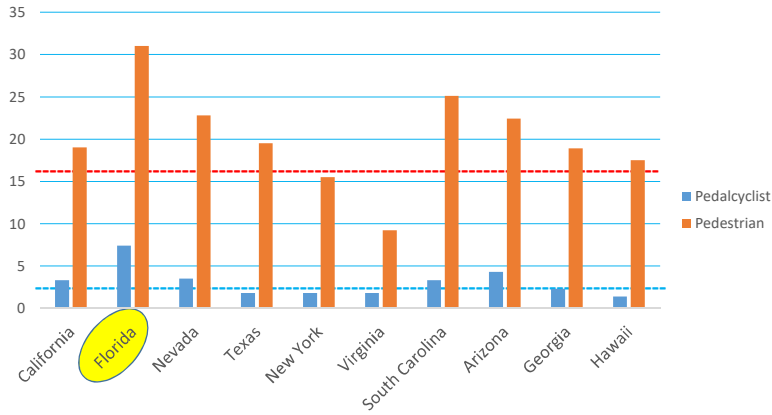
Based on PDI, the 20 most dangerous metro areas for walking in the United States are:

2016 rank	Metro area	2016 Pedestrian Danger Index
1	Cape Coral-Fort Myers, FL ←	283.1
2	Palm Bay-Melbourne-Titusville, FL ←	235.2
3	Orlando-Kissimmee-Sanford, FL ←	234.7
4	Jacksonville, FL ←	228.7
5	Deltona-Daytona Beach-Ormond Beach, FL ←	228.2
6	Lakeland-Winter Haven, FL ←	200.6
7	Tampa-St. Petersburg-Clearwater, FL ←	192.0
8	Jackson, MS	189.6
9	Memphis, TN-MS-AR	153.3
10	North Port-Sarasota-Bradenton, FL ←	148.2
11	Miami-Fort Lauderdale-West Palm Beach, FL ←	145.1



<https://smartgrowthamerica.org/dangerous-by-design/>

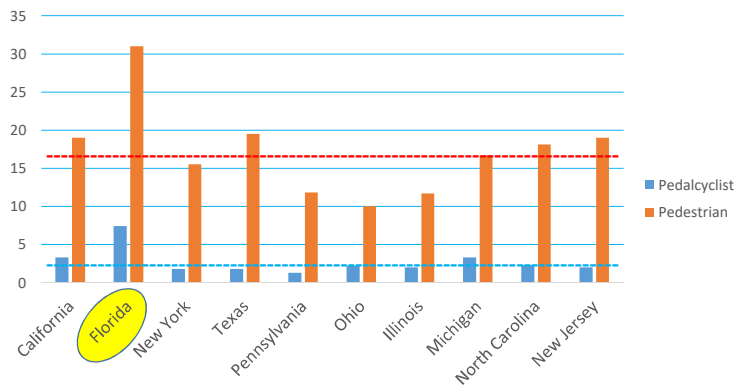
Fatalities per Million Population: States with largest # of tourists



<http://www.businessinsider.com/the-most-popular-us-states-for-tourism-2014-10>
<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812382>



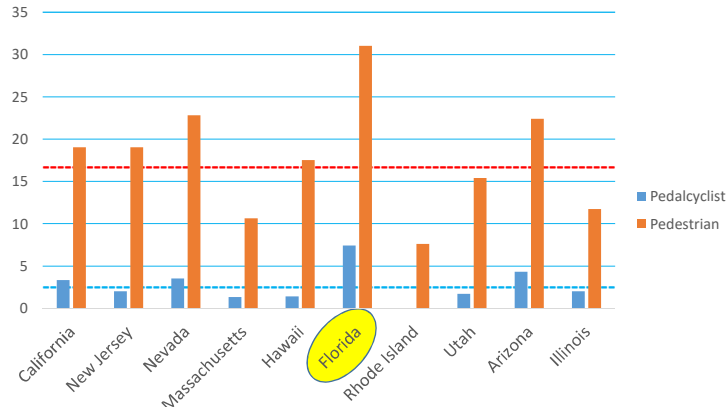
Fatalities per Million Population: States with highest % senior citizens



<https://www.census.gov/content/dam/Census/library/publications/2014/demo/p23-212.pdf>
<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812382>



Fatalities per Million Population: States with highest % urban residents



<http://www.newgeography.com/content/005187-america-s-most-urban-states>

<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812382>



Saving Lives on Our Roads **Local Initiatives that Change Behaviors**



8/18/2017






FDOT Florida Department of TRANSPORTATION

FDOT's Bicycle & Pedestrian Focused Initiative

SAFETY DOESN'T HAPPEN BY ACCIDENT.




**WHEN DRIVING, WALKING, OR BICYCLING...
PAY ATTENTION.
READ THE SIGNS.
LEARN THE RULES.**

AVOID DISTRACTIONS.   
STOP BEFORE TURNING RIGHT ON RED.
USE THE SIDEWALK AND CROSSWALKS.
BICYCLE PREDICTABLY, WITH TRAFFIC.


AlertTodayFL www.AlertTodayFlorida.com AlertTodayFlorida Funded by the Florida Department of Transportation

Brenda Young, PE
Passenger Operations Manager, FDOT District 5

Agenda



- Background of initiative, why it's needed
- What FDOT is doing
- Resources and what you can do



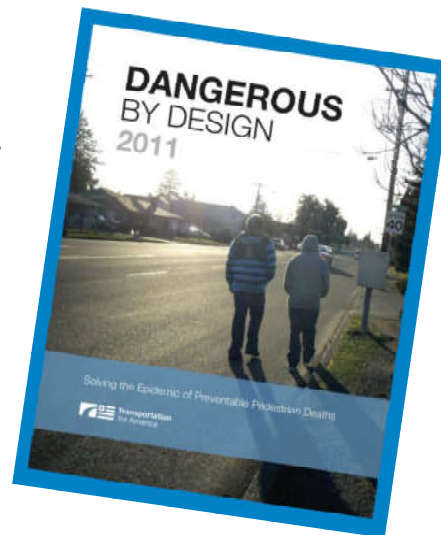
FDOT Florida Department of Transportation

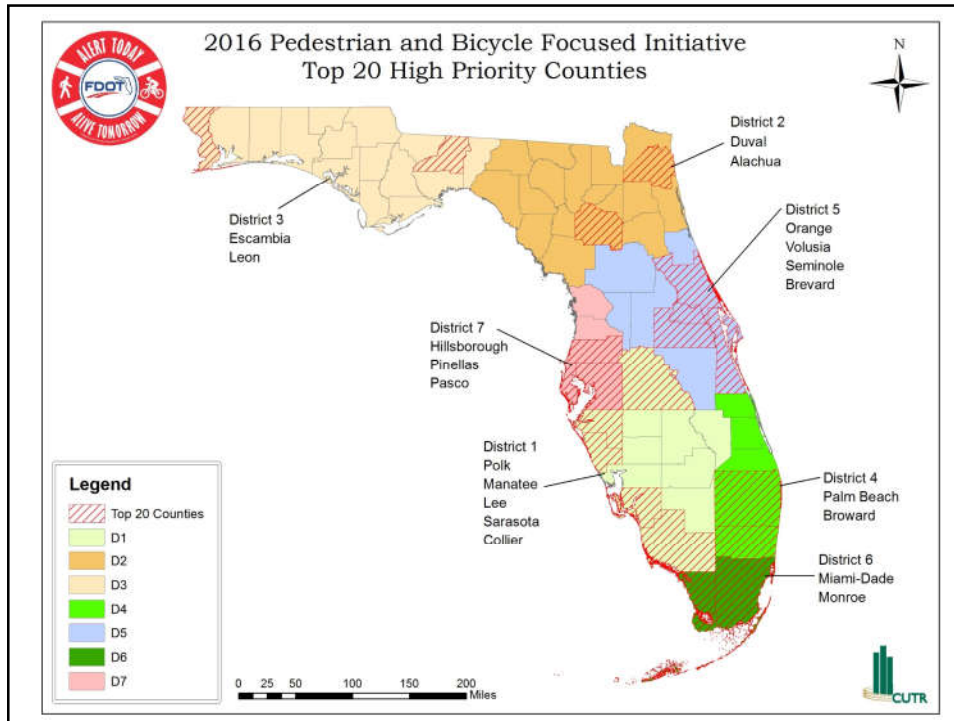
Background and Need

FDOT's Pedestrian Safety Initiative

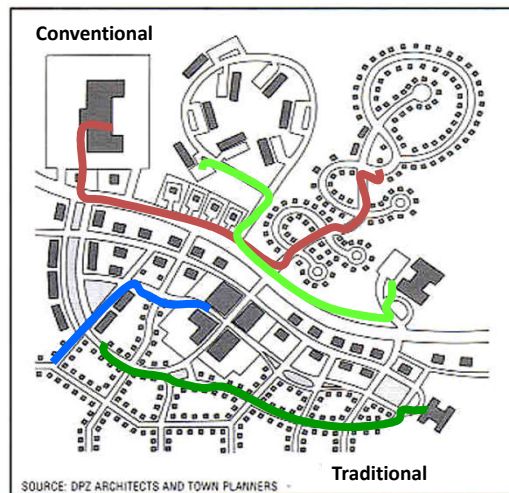


- Dangerous by Design National Publication
- Secretary Ananth Prasad...
"Being #1 in pedestrian fatalities and serious injuries is NOT where Florida wants to be."

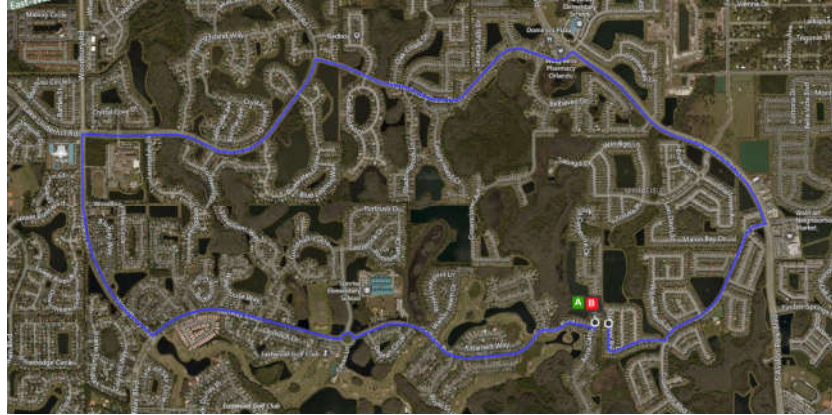




Land Development Patterns



Land Development Patterns



1585 Anna Catherine Dr, Eastwood Park, Orange County, FL
13415 Summer Rain Dr, Avalon Park, Orange County, FL
7.1 mile drive, yet only 70' apart

Development Patterns



Traditional - Small Blocks/Street Network



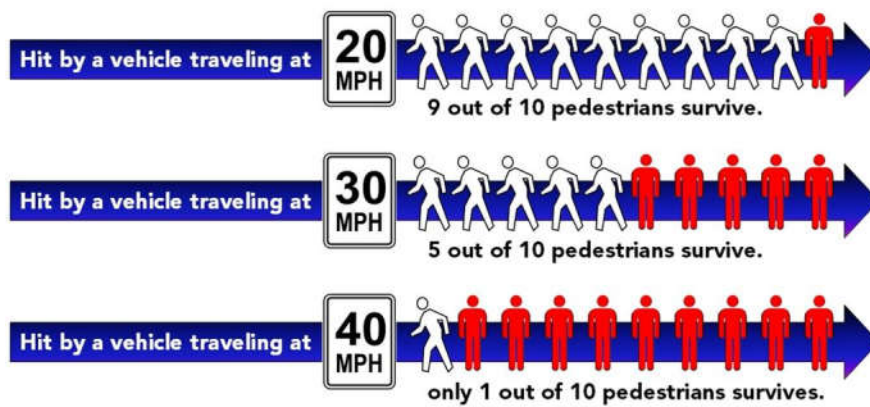
Land Development Regulations



Roadway Infrastructure



Speed and Pedestrian Fatalities



Speed Management and Driver Expectation

- The normal range of design lane width is 9-12’.
- Lane widths substantially less than 12 feet are considered adequate for a wide range of volume, speed and other conditions.
- There is less direct evidence of a safety benefit associated with wider lanes in urban areas.

AASHTO - A Guide for Achieving Flexibility In Highway Design

Speed Management



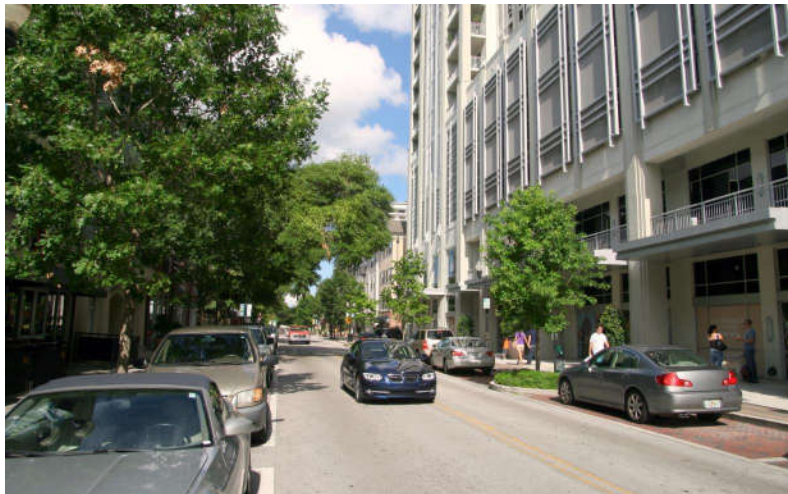
Robinson St, Orlando, FL

Speed Management



Robinson St, Orlando, FL

Speed Management



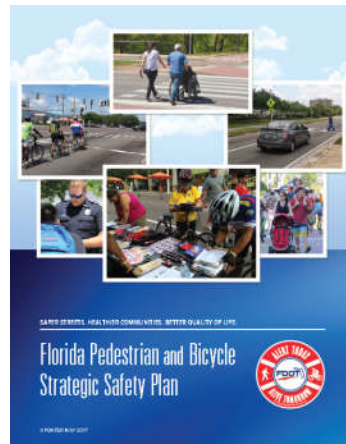
Central Ave, Orlando, FL

What FDOT is Doing

The Focused Initiative Launch



- National Highway Transportation Safety Administration: assessed Bike/Pedestrian Safety
- Began Statewide Focused Initiative
- Florida Pedestrian and Bicycle Strategic Safety Plan



Media Campaign



Alert Today/Alive Tomorrow Safety Campaign
<http://alerttodayflorida.com/>



Complete Streets Policy/Implementation

FDOT
 Florida Department of Transportation
 BILLY KOTT, Governor | 405 Suwannee Street, Tallahassee, FL 32399-0450 | ANANTH PRASAD, P.E., Secretary

POLICY Effective: September 17, 2014
 Office: Design Director
 Topic No.: 200-622-017-a

COMPLETE STREETS

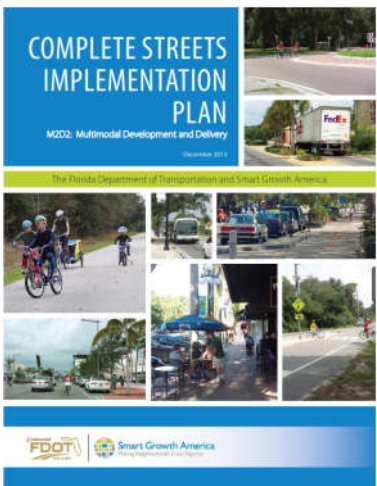
It is the goal of the Department of Transportation to implement a policy that promotes safety, quality of life, and economic development in Florida. To implement this policy, the Department will routinely plan, design, construct, reconstruct and operate a context-sensitive system of "Complete Streets." 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
- Freight handlers
- Motorists
- Pedestrians
- Transit riders

The Department specifically recognizes Complete Streets are context-sensitive and require transportation system design that considers local land development patterns and built form. The Department will coordinate with local governments, Metropolitan Planning Organizations, transportation agencies and the public, as needed to provide Complete Streets on the State Highway System, including the Strategic Intermodal System.

This Complete Streets Policy will be integrated into the Department's internal manuals, guidelines and related documents governing the planning, design, construction and operation of transportation facilities.

Ananth Prasad
 Ananth Prasad, P.E.
 Secretary

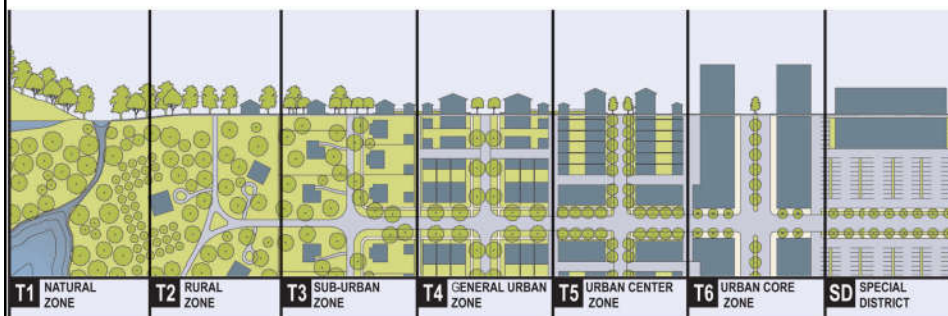


Complete Streets Implementation Plan

Five-part implementation framework:

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

Define the Context



Transect Zones, Smart Code

FDOT Draft Context Zones

FDOT Draft Land Use Context Zones

NCHRP Zones	FDOT Zones	Description
Rural	C1	Natural Zone
	C2	Rural Zone
Rural Town	C2T	Rural Town
Suburban	C3R	Suburban Residential Zone
	C3C	Suburban Commercial Zone
Urban	C4	General Urban Residential Zone
	C5	Urban Center Zone
Urban Core	C6	Urban Core Zone

Resources and What You Can Do

Complete Street– Land Use and Transportation



Training - Industry

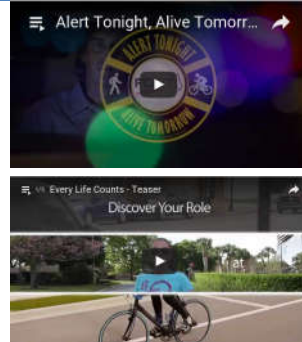
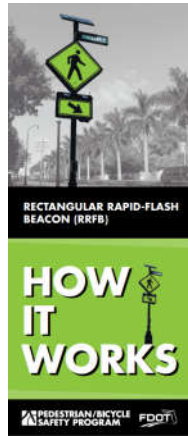


FHWA Focus State

- Conducting Road Safety Audits
- Designing for Pedestrian Safety
- Roundabout Design



Public Education Materials



<http://www.alerttodayflorida.com/>

FDOT Florida Department of Transportation

Enforcement



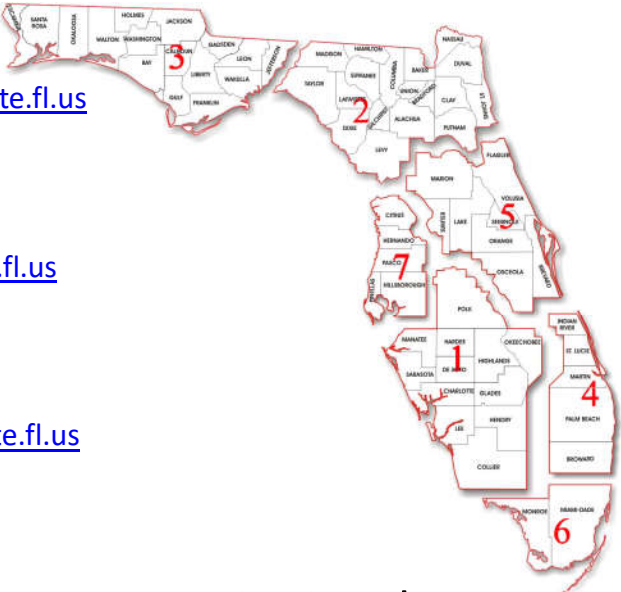
Providing High Visibility Enforcement Funding:

In high priority areas for bicycle and pedestrian safety



<http://www.alerttodayflorida.com/>

FDOT Florida Department of Transportation



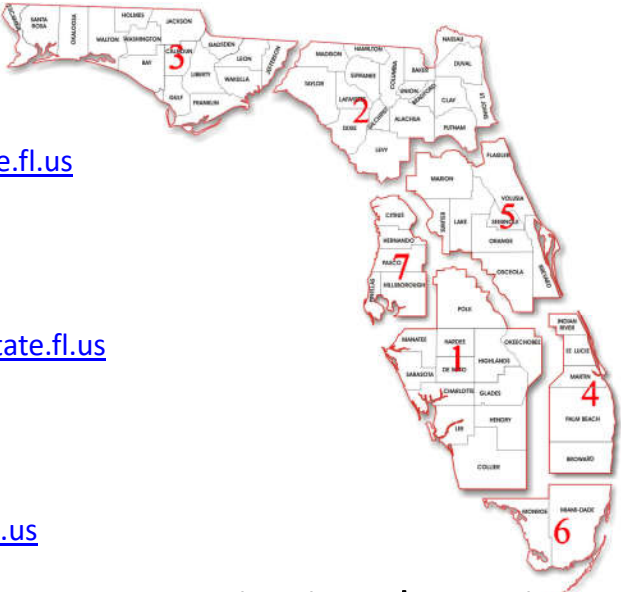
D1: David Wheeler
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863-519-2378

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904-360-5630

D3: Michael Lewis
Michael.Lewis@dot.state.fl.us
850-330-1266

D4: Lisa Maack
Lisa.Maack@dot.state.fl.us
954-717-2253

FDOT District Champions
Your connection to resources!



D5: Brenda Young
Brenda.Young@dot.state.fl.us
386-943-5195

D6: Elizabeth Stacey
Elizabeth.Stacey@dot.state.fl.us
305-470-5308

D7: Alex Henry
Alex.Henry@dot.state.fl.us
813-975-6256

FDOT District Champions
Your connection to resources!



Secretary Boxold...“Addressing the issue of bicycle and pedestrian safety requires a comprehensive approach. We have to change the way we design and engineer our roads, we have to improve our education efforts, and clarify our traffic laws.”

Brenda Young, PE

Passenger Operations Manager, FDOT District 5
Brenda.young@dot.state.fl.us 386-943-5195

Resources



- Alert Today/Alive Tomorrow
 - <http://alerttodayflorida.com/>
- Complete Streets Policy & Implementation
 - <http://www.flcompletestreets.com/>
- Context Based Bicycle/Pedestrian Facilities
 - <http://www.dot.state.fl.us/rddesign/BikePed/Default.shtm>
- Promotion of Modern Roundabouts
 - <http://www.dot.state.fl.us/rddesign/Roundabouts/Default.shtm>
- Guidance for Road Diets on State System
 - <http://www.dot.state.fl.us/rddesign/CSI/Files/Lane-Elimination-Guide-Part2.pdf>

FDOT Pedestrian Lighting Initiative

Top Twenty Signalized Intersections with Highest Nighttime Pedestrian Crashes:

- Crash Data from 2008 – 2012
- 95% of Intersections Had Some Form of Lighting
- 62% of Total Pedestrian Crashes Occurred at Night
- 42% of the Existing Lights Needed to be Relamped due to Age



Mid Block Crossings



Rectangular Rapid Flashing Beacon (RRFB)



Pedestrian Hybrid Beacon (HAWK)