

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

## Annual Advisory Committee Meeting

# Agenda

**April 16, 2026**  
8:00 AM – 5:00 PM

**Florida's Turnpike Enterprise Headquarters**  
Turkey Lake Service Plaza  
Milepost 263, Bldg. #5315, Ocoee, Florida  
[\*\*MS Teams Link\*\*](#)

8:00 AM	Welcome and Meeting Overview
8:10 AM	Introductions
8:30 AM	Context-Based Design – History and Overview
9:00 AM	Rulemaking Process and Sunshine Law
9:30 AM	Summary of Draft 17 <sup>th</sup> Edition Updates <ul style="list-style-type: none"><li>• Chapter 4: Roadside Design</li><li>• Chapter 5: Pavement Design and Construction</li><li>• Chapter 12: Construction</li><li>• Chapter 18: Signing and Pavement Marking</li></ul>
10:00 AM	<b>Group Photo and Break</b>
10:30 AM	Summary of Draft 17 <sup>th</sup> Edition Updates <ul style="list-style-type: none"><li>• Chapter 8: Pedestrian Facilities</li><li>• Chapter 13: Public Transit</li><li>• Chapter 15: Speed Management*</li></ul>
11:00 AM	Break-Out Groups <ul style="list-style-type: none"><li>• Chapter 8: Pedestrian Facilities</li><li>• Chapter 13: Public Transit</li><li>• Chapter 15: Speed Management</li></ul>
12:00 PM	<b>Lunch – On your own</b>

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

1:00 PM	Summary of Draft 17 <sup>th</sup> Edition Updates <ul style="list-style-type: none"><li>• Chapter 3: Geometric Design</li></ul>
1:30 PM	Break-Out Groups (25 Minute Rotations) <ul style="list-style-type: none"><li>• Chapter 3: Geometric Design<ul style="list-style-type: none"><li>○ Design Speed, Design Vehicles</li><li>○ Travel Lanes, Medians, Border Width Criteria</li><li>○ Bicycle, Pedestrian, Parking Criteria</li></ul></li></ul>
3:00 PM	<b>Break</b>
3:30 PM	Achieving Zero Together – FDOT Target Zero
4:00 PM	Committee Discussion
4:45 PM	Closing remarks <ul style="list-style-type: none"><li>• Public Comment</li></ul>

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

## Annual Advisory Committee Meeting

### *Meeting Summary*

**April 16, 2026**  
8:00 PM – 5:00 PM

**Florida's Turnpike Enterprise Headquarters**  
Turkey Lake Service Plaza  
Milepost 263, Bldg. #5315, Ocoee, Florida  
and Virtual on Microsoft Teams

#### Attendees

Derwood Sheppard  
Anson Sonnett  
Richard Tornese  
Robert Behar  
DeWayne Carver  
Billy Hattaway  
Juvenal Santana  
Sage Kamiya  
Brian Singleton  
Michael Grzelka  
Ghulam Qadir  
Ryan Bell  
Kevin Ingle  
Adam Scurlock  
Will Potter  
Gail Woods  
Nik Patel  
Roxane Van Horn  
Jady Chen  
Rhonda Taylor  
Allan Urbonas

Kathy Thomas  
Gene Howerton  
Keith Krieger  
Ed Kestory  
Ben Gerrell  
Mark Musselman  
Jennifer Musselman  
Daniel Eichler  
Jacqui Morris  
Caitlin Ward  
Laura Hardwicke  
Brian Stanger  
Miguel Soria

#### **Online:**

Karina Fuentes  
Scott Chandler  
Kristin Larsson  
Robert Hatton  
Shane Parker  
Brian Vanorny

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

Gaspar Gomez  
Gregory Munson  
Scott Suto  
Todd Crosby  
Ignacio Sarasqueta  
Francisco Leon  
Chance Powell  
Jared Patsch  
Cailin Cerame

Min-Tang Li  
Robert Hideck  
Ashley Peacock  
Tanya Merkle  
Brenda Young  
Savannah Sams  
Randy Showers  
Allie Caldwell

Topic		
1	<p>Welcome and Introductions [Slide #1 – 6]</p>	<p>Derwood Sheppard</p>
	<p>Derwood opened the meeting at 8:12 am and provided an overview of the agenda. He then led introductions of the attendees in the room and online.</p> <p>Derwood also made a special announcement about the upcoming Roadway Design Guide, envisioned as a companion supplement to the Florida Greenbook. He encouraged the committee to think about guidance that would be helpful in the Guide.</p>	
2	<p>Context-Based Design – History and Overview [Slide #19-71]</p>	<p>Billy Hattaway</p>
	<p>Billy Hattaway provided a history and overview of the development of context-based design in Florida. Some of the critical points he covered included the following:</p> <ul style="list-style-type: none"> <li>• Previous design criteria and guidance encouraged designing as high a design speed as practical which often resulted in higher posted speeds</li> <li>• Updated approach is to select a design speed based on the built environment</li> <li>• Cities established after WWII tend to have more suburban development patterns. Cities built pre-WWII tend to have more grid networks.</li> <li>• Cul-de-sac style networks can lead to longer trips and create challenges for delivery services</li> <li>• Fewer children are now walking to school</li> </ul>	

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- Dangerous by Design – Florida accounted for 8 of the top 20 cities in U.S. (added by RRV)
- FDOT has a long history with safety improvement efforts including Safe Routes to School and the Bicycle and Pedestrian Safety Coalition
- As transportation professionals and road designers, we only have control over certain elements of safety, including designing safe roads and streets
- Education is helpful for safe users, such as remembering to use “crash” instead of “accident” to reinforce our ability to affect outcomes.
- Billy discussed the history of transportation funding, noting that at the federal level, we have been deficit spending regarding the highway trust fund since 2008.
- Billy walked through the history of context-based design including federal and state milestones over the last 40 years. Florida and FDOT remain national leaders.
- FDOT adopted a context classification system that builds on the concept of a natural transect and the new urbanist transect
- Context classifications allow more flexibility in design criteria
- Incapacitating injuries have huge costs to the individual and can have major changes to someone’s daily life
- Traditional approaches to safety may not be as effective in tackling safety concerns or challenges.
- The state of Florida doesn’t require folks to stay updated on driver laws, which could contribute to safety concerns
- Modal expectations vary throughout different context classifications. Design criteria vary as a result to accommodate such modal expectations (i.e. lane widths, sidewalk widths, etc.)
- Raised intersections are now acceptable treatments to improve safety on state roadways in certain contexts

Following the presentation, Richard Tornese described a challenge with developments being approved with no consideration of streets and safety. Billy agreed local development regulations are a hurdle. He recommended a parallel code approach.

Bob Behar pointed out that a lot of streets don’t have the R/W for a roundabout, so we end up with a circle that does not work as well as a

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

	<p>modern roundabout. Billy noted that he's seen single lane roundabouts in Colorado that work fine even for big trucks, and wondered if our roundabout criteria in Florida could be revised to accommodate smaller roundabouts?</p>	
4	<p>Rulemaking Process and Sunshine Law [Slide #72-76]</p>	Ashley Peacock
	<p>Ashley Peacock from the FDOT Office of General Council provided a presentation on the rulemaking process and the requirements of Florida's sunshine law. He described the four main phases of rulemaking under Section 120.54, FS. Ashley stated that all business of the Greenbook committee must take place at properly noticed meetings. He advised committee members to contact Jacqui directly if there is a need or desire to hold additional meetings or discussions, to ensure Sunshine requirements are met.</p> <p>Gail Woods asked if anything had changed since last year. Ashley noted that the law has not changed, but there have been refinements to the rulemaking process including the way edits should appear in the marked-up document. SB 108 also requires all agencies to do a five-year review of all of their rules.</p>	
5	<p>Summary of Draft 17<sup>th</sup> Edition Updates [Slide #77-106]</p>	Robert Behar, Kevin Ingle, Gene Howerton, Gail Woods
	<p>The subcommittee chairs made presentations on the status of edits to their respective chapters, summarized as follows:</p> <p><b>Chapter 4: Roadside Design</b></p> <ul style="list-style-type: none"><li>• Overview of feedback received from previous meetings including updating organization to more closely align with the upcoming update to the AASHTO Roadside Design Guide</li><li>• A new section has been added, "Keep Vehicles on the Roadway," including criteria for treatments such as rumble strips and horizontal curve safety.</li><li>• Sections were added for each longitudinal barrier type</li><li>• Additional clarification was added to lateral offset, clear zone, and border including definitions and applicability</li><li>• Minimum clear zones and lateral offsets were updated</li></ul>	

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- Figure styles were updated to avoid accidental swaps with FDM figures
  - Jacqui presented the updated figures. The committee did not have any comments or proposed changes to the figures.

### Chapter 5: Pavement Design and Construction

- Minor grammatical edits throughout, defined acronyms at first reference, and added references to the FDOT flexible and rigid pavement manuals
- Updated the language on skid resistance maintenance
- Updated requirement for adequate drainage from “should” to “shall”
- Shoulder grade also changed from “should” to “shall”

Following the presentation, there was additional discussion and questions, including:

- Bob Behar asked if cities and counties are using this chapter or if they use their own standards
- Richard Tornese shared they have a structural number they go by in coordination with their maintenance staff
- Miguel Soria shared majority of local roads have consistent volumes, so pavement design is also generally consistent. They have pavement design based on volumes. Major roads use guidance from the manuals referenced in the chapter.
- Jacqui shared that both FDOT manuals share criteria for how to meet AASHTO requirements.
- Orange County uses pavement design manuals
- City of Gainesville has a standard pavement design based on FDOT manual and provides option for developers to do their own calculation
- Martin County uses their own standards for arterials and collectors
- The committee expressed agreement with added the proposed amendment requiring use of the FDOT 2022 Rigid Pavement Design Manual and 2025 Flexible Pavement Design Manual

### Chapter 12: Construction

- All construction to comply with permits related to the work
- Minor edits overall

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

- Added language about personal protective equipment
- Added language about how work should be done in accordance with contract documents
- There were no committee comments on Chapter 12.

## Chapter 18: Signing and Pavement Marking

- Overarching language adding language directing readers to the MUTCD (i.e., street sign sizes, street names, etc.)
- Defined older drivers as 65+
- There were no committee comments on Chapter 12.

## 6 Group Photo and Break [Slide #107]

## 7 Summary of Draft 17<sup>th</sup> Edition Updates [Slide 7-18; 108-132] Ed Kestory, Juvenal Santana

FGB subcommittee chairs continued their updates on the 17<sup>th</sup> Edition edits, with Ed Kestory and Juvenal Santana presenting. (Note: Ed Kestory's presentation was conducted prior to Topic #2 to accommodate schedules.)

## Chapter 8: Pedestrian Facilities

- Integration of context classification, national practice/statutes, and modifications for flow.
- Introduction has been reworked
- A new concept called "Sidewalk Zones," has been introduced
- Criteria information has been streamlined, directing readers to other chapters for certain subjects to avoid redundancy
- Guidance for shared streets based on context has been added
- Guidance has been added for minimizing conflict by context classification
- Criteria for grade-separated crossings has been updated
- The definition of a crosswalk has been revised
- Guidance for midblock crosswalks in different contexts has been added

## Chapter 13: Public Transit

- Streamlined the introduction and objectives text
- Transit components renamed to transit facilities
- Added references to Chapter 4 for lateral offset of benches

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- Consolidated stop and station area criteria under one section
- Consolidated bus bay criteria under one heading
- Relocated lighting criteria
- Added new section for park-n-ride lots
- New section on mid-block crossings with references to MUTCD and Chapter 8
- Added new section on lane configurations including exclusive bus lanes, shared bus and bike lanes, and center running bus lanes
- Proposed additional edits
  - Expand definitions
  - B&A areas on not required on flush shoulders
  - Updated language to comply with Ch 14
  - Clarify circulation operation
  - Clarify preferred shared bus-bike lane width applies at bus stops
  - Currently exploring
    - Criteria bus boarding islands
    - Criteria for bus bays
    - Minimum transit lanes

Laura Hardwicke asked if there would be criteria for red bus-only lanes. Derwood clarified the MUTCD would guide this.

Richard Tornese asked how left turners would be addressed at intersections with center running bus lanes and requested additional guidance. This was noted as a topic for further exploration.

### **Chapter 15: Speed Management**

- Proposed Chapter 15 name change form Traffic Calming to Speed Management
- Proposed discussion on speed transition zones
- Shared draft list of potential strategies to include in the chapter
- Additional topics to explore:
  - Non infrastructure strategies
  - Strategies for higher speed facilities
  - Elements that can't be used for speed management

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

Following the presentations on updates to the Florida Greenbook for the 17<sup>th</sup> edition, the Committee engaged in a series of break-out groups for Chapters 8, 13, and 15. The break-out group format included the online participants. Participants were allowed to change breakout groups, if desired, to provide all participants with an opportunity to participate in all the breakout groups. A summary of the discussions is provided below.

## Chapter 8: Pedestrian Facilities

- Explore adding more succinct language for midblock crossing guidance and whether a warrant is needed, so that local agencies can easily respond to locals' requests.
- Revise language to *not* require stop bar/signage at every marked crossing. Consider providing guidance clarifying that a stop bar/signage is optional on lower-volume residential streets. Agreement that AADT guidance on this would be helpful as well (<2,000 AADT, for example).
- Lack of guidance on trail crossings/signage.
- Request to add spacing requirements for shared street elements (i.e., planter boxes, etc.).
- Request to add language for sidewalk spacing with railroad crossings.
- Concerns related to proposed 12' minimum for overpass/underpass due to it being potentially cost-prohibitive. Agreement that 12' should be recommended based on expected bike/ped activity.

## Chapter 13: Public Transit

- Bus Boarding Islands
  - Add guidance on the length of a raised crosswalk in the bike lane. Suggest recommending only raising at the pedestrian crosswalk. Need to include appropriate tactical surfaces. The modular islands have the bike lanes raised for the full length. Preserving the option to do so would be helpful. Add a reference to the bike chapter sidewalk separated bike lanes.
  - Include signage guidance for bikes to yield to pedestrians – what sign and where to put it so it doesn't get hit by the bus
  - Crossing should be aligned with the bus doors. Placement will vary based on bus type/size

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- Minimum island width should address ADA requirements. Preferred dimensions will vary based on island use/amenities.
- Bus Bays
  - Still requires coordination with transit agencies on typical bus size
  - Include guidance on separated bike lane transition at bus stops that do not have a full bus bay
- Minimum Transit Lane Widths
  - Only allow 10' when there is buffer space on both sides
  - Potential language: 10' lanes may be used if not adjacent to a vehicular travel lane and if 10' vertical clearance above adjacent bike lanes can be preserved or a buffer is present between the bus lane and bicycle lane
- Center Running Bus Lane
  - Consider requiring separation but not curb
  - . Consider allowable buffer treatments in FDM for separated bike lanes
  - Keep 11' minimum lane width
  - Painted double line should be minimum standard
- Reference rule (potentially 14.20.0032) for offset requirements

### Chapter 15: Speed Management

- How should speeds be set on yield street with sidewalks?
- Include signal synchronization as a speed management tool
- Review alignment with ITE minimum block lengths for traffic calming
- Explore using design vehicles to pre-address emergency services and transit vehicle concerns
- Can issues with curb radius and intersection clearance be addressed with better design vehicle guidance?
- Make the role of context classification and network more apparent when choosing speed management tools
- Need guidance on horizontal clearance requirements for things like football islands and mini roundabouts
- Boat traffic is also an issue
- Fire departments do not always accept mountable curbs

Lunch [Slide #134]

# Florida Greenbook

Manual of Uniform Minimum Standards for Design,  
Construction and Maintenance for Streets and Highways

10	Summary of Draft 17 <sup>th</sup> Edition Updates [Slide #135-151]	Nikesh Patel, Jacque Morris, Jennifer Musselman
<p>Nikesh Patel provided an overview of proposed changes to Chapter 3, and Jennifer Musselman provided a more detailed review of the proposed edits.</p> <p><b>Chapter 3: Geometric Design</b></p> <ul style="list-style-type: none"><li>• Nik provided an overview of the subcommittee meetings thus far and the direction that Chapter 3 is going, integrating context-based design and moving away from “one size fits all.”</li><li>• Context-based design is about applying standards more appropriately for community character.</li><li>• Chapter 16 and Chapter 19 are integrated throughout the chapter.</li><li>• Functional classification and context classifications provide helpful guidance in determining guidance.</li><li>• The goal is not to replace sound engineering design guidance but to provide more specific instances to utilize guidance.</li><li>• Jennifer presented the differences between proposed and existing chapter sections. Chapter 3 will have consolidated section headers. Relying on context classification allows integration of the design criteria for low volume streets.</li><li>• Driveways have been pulled out as their own section.</li><li>• Jennifer showed the draft context-based tables and proposed a starting point for design speed ranges per context.</li><li>• Providing design vehicle guidance but locals will still have final determination of their design and control vehicles.</li><li>• Cross section criteria have been reorganized by context and additional criteria added for 30-, 45-, and 60-degree parking</li></ul>		
11	Break-Out Groups [Slide #152-153]	All
<p>Key notes from Chapter 3 break-out groups are included below.</p> <p><b>Design Speed, Design Vehicles</b></p> <ul style="list-style-type: none"><li>• Design Speeds<ul style="list-style-type: none"><li>○ C1/C2 arterials may need to go up to 60 mph</li></ul></li></ul>		

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- 35 mph may be too high for unpaved roads. Most agencies are not building new unpaved roads. Consider removing unpaved roads from the table.
- May need to allow 45 mph on suburban arterials for resurfacing projects. Consider a footnote to encourage the low end of the range when there is high multimodal activity.
- Near recreation, trail, or conversation areas short segments of 25 mph can be helpful in rural/natural contexts.
- 35 mph may be too low for rural towns, but is likely ok for off-system roadways
- Consider lowering C4 collector to 20 mph
- There may be existing downtown (C6) arterials operating at 30-35 mph
- C4 arterials – it is easier to get speeds to 40 mph than 35 mph. It would be helpful to allow 40 mph for resurfacing projects.
- Concerns expressed about adding 60 mph to rural arterials. Many rural arterials transition between high and low speed frequently as they pass through towns, so drivers aren't traveling at the higher speeds for long distances. Consider 60 mph for resurfacing only.
- Footnotes are a helpful way to share resurfacing criteria.
- Design Vehicles
  - In downtowns, large vehicles often encroach on opposing lanes, but the volumes are very low
  - Trucks often have flexibility to shorten wheelbases but there may be limitations based on weight
  - The control vehicle for C3R does not need to be as large as C3C, especially for non-freight routes.
  - Some cities are using fire trucks as their design vehicle in urban areas.

### **Travel Lanes, Medians, Border Width Criteria**

- Group discussed minimum versus desirable lane widths -- minimum is R/W constrained, desirable is more inclusive.
- Group discussed pros and cons requiring R/W from developers for street elements, noting the more roadway R/W taken from the

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

developer, the less the developer can build of their development program

- Some cities allow donated R/W to count toward their unit counts
- Some cities use easements and city maintains the easement. City may pick how to do the maintenance.
- Can also do in-between widths, e.g. 10.5' lane widths actually work for buses. Include specific language to allow uneven numbers.
- Group discussed how pavement markings affect widths, noting some low-speed residential streets don't have pavement markings. Possibly use functional class to determine striping. Possibly use volume to determine if striping is needed -- low volume and speed no striping. 400 vpd/30mph or less -- optional
- Minimum turn lanes could be 9' with 10' desirable, allowing 9' on existing to remain. Number of lanes makes a difference; type of traffic makes a difference.
- Median widths 19.5' at 45 mph, existing 15.5'-16.5' is more common. 16.0' might be a better minimum
- For a low-speed flush median TWLTL, some are using 10' width
- For a traffic separator, 4' minimum.
- Gail suggested starting with the TDOT street design standards and was supported by the rest of the group in this suggestion.
- Daniel Eichler suggested there should be a note to talk about truck traffic and bus traffic.
- Consider off-tracking for narrower lanes on low radius curbs
- Bob Behar suggested border width of 12' is hard to meet in most urban areas and suggested it be 8' in most places. 8' minimum 12' desirable. Consider a narrower border width for right turn lane.

### **Bicycle, Pedestrian, Parking Criteria**

- Sidewalks:
  - Minimum range is typically 5' or 6' and goes up to 10'. 5' is a good starting point
  - Some existing 4' sidewalks are kept for single-family residential contexts
  - Folks want to see minimum sidewalk width in the table
  - The pedestrian "zone" has helped more in C4 contexts, but maybe not as much in C3C or C3R
  - There are some cases where sidewalk requirements would encroach on shade trees/driveways, etc. which is important

# Florida Greenbook

## Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

to the community, so City of Sarasota might keep the 4' sidewalk for example

- Some instances there are 5' sidewalk right up to where the R/W ends, 6' could be a challenge, even if the agency wants to.
- In the C3 context for the buffer zone, ideally at least 3' buffer
- State the preferred width with a caveat, noting you can go down in width if R/W constraints are tough.
- City of Orlando often hears constrained R/W as an excuse. They mentioned an example where they extended the curb. It was expensive, but it was on HIN, so they did it.
- Minimizing the taking of R/W is important
- Consider combining the total width of facility and buffer to allow local agencies to adjust if necessary
- Shared Use Paths (SUP)
  - A compromise is sometimes putting an SUP on one side and having a 6' sidewalk on the other side
  - Folks prefer 12' minimum SUP widths, with the exception of trees. It could be helpful to include a range of SUP widths (10' minimum -12' preferred). 8' was agreed to be constrained
- Bike Lanes
  - More requests for separated bike lanes, rebranded sharrows, and bike boulevards.
  - Where you have wider R/W and can reduce travel, incorporate separated bike lanes.
  - Delineators are a maintenance concern, and the armadillos are more favorable
  - Consider including guidance specific to milling and resurfacing and seeing if you can go ahead and reduce travel lane widths to give more of a buffer for bicyclists.
  - Recurring discussion about wanting to encourage the preferred but also listing the minimum with certain caveats to avoid not building *anything*.
  - For new construction folks should strive for buffered bike lanes
  - Add guidance on whether to do a SUP or a separated bike lane

# Florida Greenbook

Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- Discussion about a raised bicycle facility adjacent to sidewalk to potentially reduce conflicts
- Mixed reviews about including ranges, because people might always use the minimum.
- Guidance will be framed in a way that says, “IF you decide to put in \_\_\_ facility, here is what you do”, versus telling people where to put what
- C4 Urban Context (Local)
  - Consider waste facilities, ADA impacts, etc.
  - For C4, group agreed 6’ sidewalk if adjacent to curb, otherwise 5’. In table notes address a certain condition where older existing sidewalks that are only 4’ are exempt
- Parking
  - Miami, City of Orland strictly does parallel parking
  - Typical width for local agencies in group is 8’
  - Comment on the numbers for R/W impacts of parking should be rounded (aka 8.8 and 8.9 is confusing)
  - Are we using ranges on these width dimensions?
  - Miami uses 30’ as minimum distance of parking from intersection
  - It was mentioned that in the FDM, 35 mph is the highest speed with on-street parking allowed. Local agencies would like to see parking guidance for different design speeds (although some locals don’t have that many high-speed roads)
- Refuge Island Width
  - Current recommendation is 6’-8’ width
  - Group had no comments

12	<b>Break [Slide #154]</b>	
13	Achieving Zero Together – FDOT Target Zero [Slide #155-169]	Brenda Young

Brenda Young, FDOT State Safety Engineer, made a presentation to the committee describing FDOT’s new Target Zero Policy and programs.

- Five-year trends are showing a decline in fatal and serious injury crashes.

# Florida Greenbook

Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

- Target Zero has three target areas: lane departures, pedestrian and bicyclists, and intersections. Approximately 90% of serious injury and fatal crashes occur within these categories.
- FDOT is currently evaluating additional safety countermeasures to further reduce fatal and serious injury crashes.
- Brenda shared a map of other Florida agencies that are aiming for Target Zero, and where funding has been distributed
- FDOT's new policy "Achieving Target Zero" entails evaluating overall success to isolate what is working within this process
- A reactive and proactive approach is key. FDOT is looking at (1) where crashes already occur, (2) statewide proactive initiatives, and (3) criteria for resurfacing and capacity projects. FDOT is currently working to expand safety countermeasures list

14

Committee Discussion and Next Steps  
[Slide #170]

Advisory Committee

Jacqui and Derwood opened the floor for committee comments, feedback, and general discussion. Comments included the following:

- Richard shared this was a productive meeting. He appreciates the format and the subcommittee prep meetings to share updates back with the full committee.
- Bob shared having the intermediary subcommittee meetings made this meeting more efficient and the committee meeting can focus on finding agreement.
- Derwood thanked everyone for the attention through long update processes and expressed excitement for the upcoming Roadway Design Guide.
- Gail shared this is the smoothest meeting the committee has had in a while.
- Jacqui reiterated that subcommittee meetings are effective because of the active participation and thanked the committee for their commitment.

15

Public Comments [Slide #171]

Derwood Sheppard

- There were no public comments. The meeting was adjourned at 3:53 PM.

# Florida Greenbook

Annual Advisory Committee Meeting

*Florida's Turnpike Enterprise Headquarters  
Ocoee, Florida*

April 16, 2026

8:00 AM – 5:00 PM



**Public Meeting**

*Welcome*

**Derwood Sheppard, PE**

State Roadway Design Engineer

# Agenda

6 PDHs

DBPR Meeting # 2763

\*Must attend the full meeting.

April 16, 2026

8:00 AM	Welcome and Meeting Overview
8:10 AM	Introductions
8:30 AM	Context-Based Design – History and Overview
9:00 AM	Rulemaking Process and Sunshine Law
	Summary of Draft 17 <sup>th</sup> Edition Updates
9:30 AM	<ul style="list-style-type: none"><li>• Chapter 4: Roadside Design</li><li>• Chapter 5: Pavement Design and Construction</li><li>• Chapter 12: Construction</li><li>• Chapter 18: Signing and Pavement Marking</li></ul>
10:00 AM	<b>Group Photo and Break</b>
	Summary of Draft 17 <sup>th</sup> Edition Updates
10:30 AM	<ul style="list-style-type: none"><li>• Chapter 8: Pedestrian Facilities</li><li>• Chapter 13: Public Transit</li><li>• Chapter 15: Speed Management*</li></ul>
	Break-Out Groups
11:00 AM	<ul style="list-style-type: none"><li>• Chapter 8: Pedestrian Facilities</li><li>• Chapter 13: Public Transit</li><li>• Chapter 15: Speed Management</li></ul>
12:00 PM	<b>Lunch – On your own</b>

## Online Attendees Meeting Logistics



The chat feature can be used to ask questions to the presenters or share resources.



Be sure to mute your microphone unless you are asking a question.



You may turn on or off your video camera accordingly.



Raise your virtual hand to ask a live question.

# Agenda

## April 16, 2026

6 PDHs

DBPR Meeting # 2763

\*Must attend the full meeting.

1:00 PM	Summary of Draft 17 <sup>th</sup> Edition Updates <ul style="list-style-type: none"><li>• Chapter 3: Geometric Design</li></ul>
1:30 PM	Break-Out Groups (25 Minute Rotations) <ul style="list-style-type: none"><li>• Chapter 3: Geometric Design<ul style="list-style-type: none"><li>○ Design Speed, Design Vehicles</li><li>○ Travel Lanes, Medians, Border Width Criteria</li><li>○ Bicycle, Pedestrian, Parking Criteria</li></ul></li></ul>
3:00 PM	<b>Break</b>
3:30 PM	Achieving Zero Together – FDOT Target Zero
4:00 PM	Committee Discussion
4:45 PM	Closing remarks <ul style="list-style-type: none"><li>• Public Comment</li></ul>

## Online Attendees *Meeting Logistics*



The chat feature can be used to ask questions to the presenters or share resources.



Be sure to mute your microphone unless you are asking a question.



You may turn on or off your video camera accordingly.



Raise your virtual hand to ask a live question.

# Introductions

- ✓ Name
- ✓ Role
- ✓ Company

## Online Attendees:



### Chapter Subcommittee Members & Technical Advisors

Please turn on your camera and unmute your microphone to introduce yourself.



### Guests and Members of the Public

Type your name and e-mail address in the chat.

# Florida Greenbook Roadway Design Guide



- Expand TND Handbook
- Incorporate context classification
- Provide similar guidance for all chapters
- Starting with **Chapter 1 – Planning and Land Development**

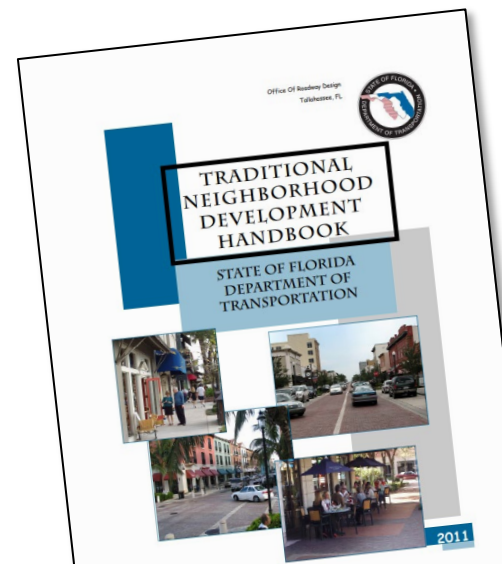


Table # 625-000-015  
Manual of Uniform Minimum Standards  
for Design, Construction and Maintenance  
for Streets and Highways  
May - 2011

CHAPTER 19	
TRADITIONAL NEIGHBORHOOD DEVELOPMENT	
A	INTRODUCTION ..... 19-1
B	APPLICATION ..... 19-2
C	PLANNING CRITERIA ..... 19-3
C.1	LAND USE ..... 19-3
C.2	NETWORKS ..... 19-3
D	OBJECTIVES ..... 19-6
E	DESIGN ELEMENTS ..... 19-8
E.1	Design Controls ..... 19-8
E.1.a	Design Speed ..... 19-8
E.1.b	Movement Types ..... 19-8
E.1.c	Design Vehicles ..... 19-8
E.2	Sight Distance ..... 19-8
E.2.a	Stopping Sight Distance ..... 19-8
E.2.b	Passing Sight Distance ..... 19-8
E.2.c	Intersection Sight Distance ..... 19-8
E.3	Horizontal Alignment ..... 19-9
E.3.a	Minimum Intersection Sight Distance ..... 19-9
E.3.b	Minimum Centerline Radius ..... 19-10
E.4	Vertical Alignment ..... 19-10
E.5	Minimum Curb Return Radius ..... 19-10
E.5.a	Cross Section Elements ..... 19-10
E.5.b	Introduction ..... 19-11
E.5.c	Lane Width ..... 19-11
E.5.d	Medians ..... 19-11
E.5.e	Turn Lanes ..... 19-11
E.5.f	Parking ..... 19-11
E.6	Clearances and Turnarounds ..... 19-11
E.6.a	Turning Area ..... 19-12
E.6.b	Pedestrian Considerations ..... 19-13
E.7	Future Considerations ..... 19-13
E.7.a	Futuristic ..... 19-13

# **Chapter 8: Pedestrian Facilities**

**Ed Kestory, PE**

FDOT District 5 Design Engineer

# Change/Update Types

- Context Classification
- New/Updated Information (National practice, statute)
- Changes requested by committee or FDOT
- Updated references
- Simplify/combine/move to appropriate chapter

# Updated Introduction

Pedestrian facilities are an integral part of the transportation system and should be considered standard components of roadway planning and design. Use context classification to inform appropriate implementation of pedestrian facilities such as sidewalks, shared use paths (see Chapter 9 – Bicycle Facilities), crossing treatments, and supporting elements like curb ramps and median refuges. For more information on context classification, refer to **Chapter 1 – Planning and Land Development**.~~Pedestrian facilities shall be given full consideration in the planning and development of transportation facilities, including the incorporation of such facilities into state, regional, and local transportation plans and programs under the assumption that transportation facilities will be used by pedestrians. Pedestrian facilities should be considered in conjunction with the construction, reconstruction, or other significant improvement of any transportation facility. Special emphasis should be given to projects in or within 1-mile of an urban area. Examples of pedestrian facilities sidewalks, shared use paths, and over and under passes based on context classification. Provide c, curb ramps, median refuges, and crosswalks as indicated to support the context based pedestrian facilities.~~

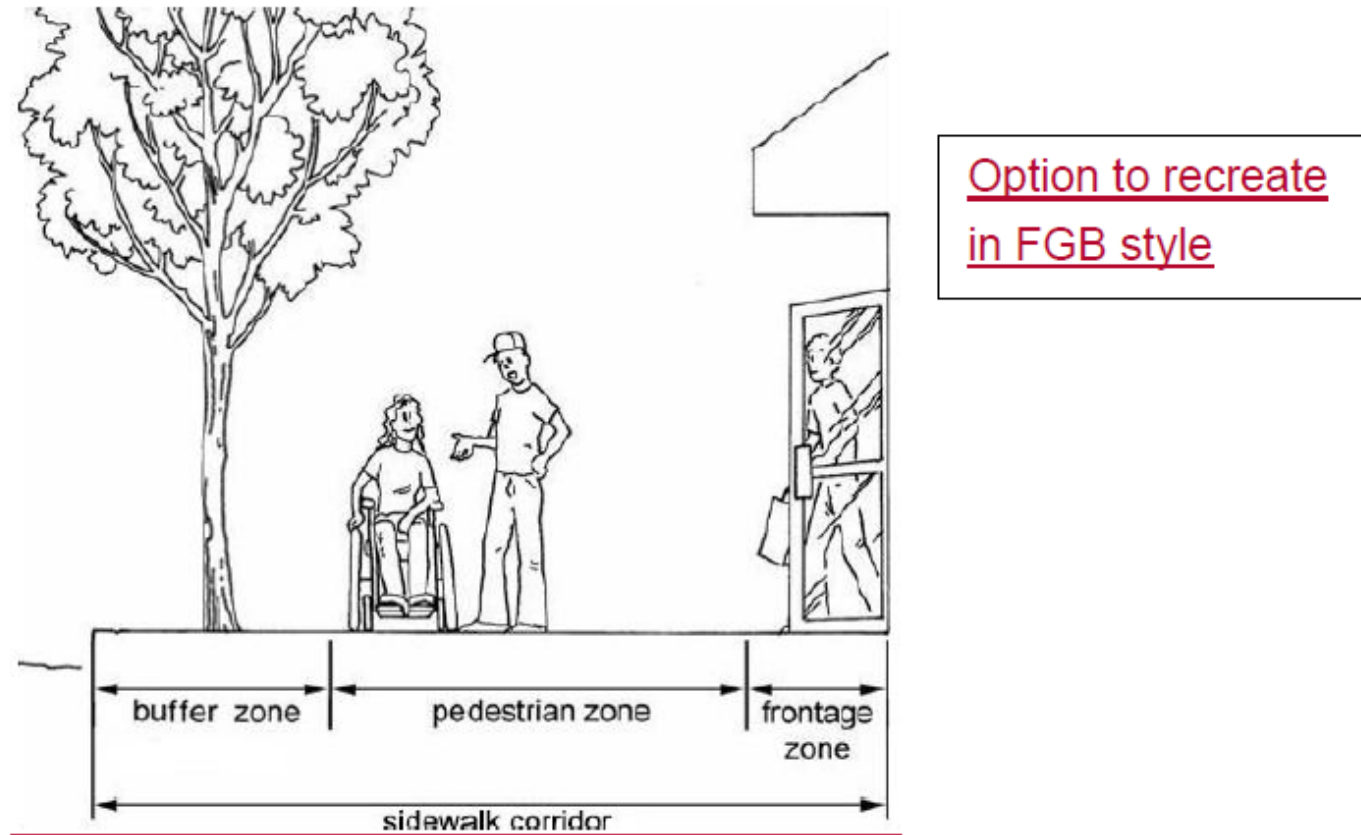
# Added MUTCD Reference

In addition to the design criteria provided in this manual, the following documents provide criteria and guidance in the design of pedestrian facilities:

- *United States Department of Transportation ADA Standards for Transportation Facilities (2006)* and as required by *49 C.F.R 37.41 or 37.43*.
- *United States Department of Justice ADA Standards (2010) as required by 28 C.F.R 35 (title II) and 36 (title III)*.
- *Public Rights-of-Way Accessibility Guidelines (PROWAG)* provides additional information for the design of pedestrian facilities.
- *Manual on Uniform Traffic Control Devices (MUTCD)*, which establishes national standards for traffic signs, signals, markings, and other devices to regulate, warn, and guide pedestrians and motorists.

# New Concept: “Sidewalk Zones”

**Figure 8-1** Sidewalk Zones and Pedestrian Access Route



This is a working document that has not been adopted.

# Streamlining Criteria Information

zone adjacent to the right of way or building face. Consider prioritizing the pedestrian zone first, using as much of the sidewalk width as necessary, as described in **Chapter 3 – Geometric Design**. Assign any remaining width to the frontage zone, next, and then to the buffer zone. Elements like trash bins, signage, benches, or bike parking outside of the pedestrian zone should be placed in the buffer zone, consistent with any lateral offset criteria (see **Chapter 4 – Roadside Design** for lateral offset criteria). Non-transportation uses of the sidewalk, such as for shopping

adjacent to the main roadway may be used in place of a sidewalk. For [additional information concerning the design of shared-use paths design criteria](#), refer to **Chapter 9 – Bicycle Facilities**.

# Shared Streets Based on Context

## 8.2.3 Shared Streets

~~Shared uses of a street for people walking, bicycling, and driving are referred to as shared streets. These are usually specially designed spaces such as pedestrian streets which are local urban streets with extremely low vehicle speed.~~ Shared streets support walking, bicycling, and driving in the same physical space. These streets operate at very low speeds. They are often narrow, may not have traditional curbs and sidewalks, and use features such as trees, planters, and parking areas to naturally slow down traffic.

Shared streets are primarily intended for local streets in C4 (Urban General), C5 (Urban Center), C6 (Urban Core), and C2T (Rural Town) contexts. They are best suited for areas where vehicle speeds are 20 mph or less, and where pedestrian and bicyclist activity can be routinely expected. In limited circumstances, a target speed of 25 mph may be appropriate, but only where

pedestrian and bicyclist activity, land use patterns, and design elements can still support a high level of comfort and safety for all users.

Consider the availability of additional street networks when planning shared streets, to provide adequate access is provided for emergency services and larger control vehicles.

# How to Minimize Conflicts by Context

## 8.3 Minimizing Conflicts

Planning and designing streets and highways using context-based criteria can help minimize pedestrian and bicyclist conflicts with vehicles. The appropriate context classification should be identified early in the planning phase to support the application of user-focused design elements. ~~The planning and design of new streets and highways shall include provisions that support pedestrian travel and minimize vehicle-pedestrian conflicts. These may include:~~

### 8.3.2.1 General Criteria

The following criteria is intended to provide general guidance on the preferred placement of new sidewalks. However, actual placement should respond to site-specific constraints and context.

This is a working document that has not been adopted.

**Table 8-1. Strategies to Minimize Pedestrian Conflicts**

Context	Strategies to Minimize Conflicts
<b>C5 Urban Center &amp; C6 Urban Core</b>	<ul style="list-style-type: none"><li>• <u>Select appropriate design speed based on the expected level of multimodal activity. See Chapter 3 – Geometric Design for more information.</u></li><li>• <u>Wide sidewalks separate users and integrate activities (e.g., outdoor dining).</u></li><li>• <u>Medians, refuge islands, and curb extensions reduce crossing exposure.</u></li><li>• <u>Signal timing strategies such as leading pedestrian intervals, protected left-turn phasing, and right turn on red restrictions can separate users in time.</u></li><li>• <u>Right turn lanes should be avoided when possible.</u></li></ul>
<b>C4 Urban General</b>	<ul style="list-style-type: none"><li>• <u>Select appropriate design speed based on the expected level of multimodal activity.</u></li><li>• <u>Sidewalks separate modes.</u></li><li>• <u>Marked crossings define predictable conflict points.</u></li><li>• <u>Medians and refuge islands reduce crossing exposure.</u></li><li>• <u>Signal timing strategies such as leading pedestrian intervals, protected left-turn phasing, and right turn on red restrictions can separate users in time.</u></li><li>• <u>Right turn auxiliary lanes should be avoided when possible.</u></li></ul>
<b>C3 Suburban</b>	<ul style="list-style-type: none"><li>• <u>Sidewalks separate pedestrians from traffic. Shared use paths may be appropriate but may introduce conflicts with bicyclists.</u></li></ul>

# Grade- Separated Crossings

## 8.5 Grade Separation

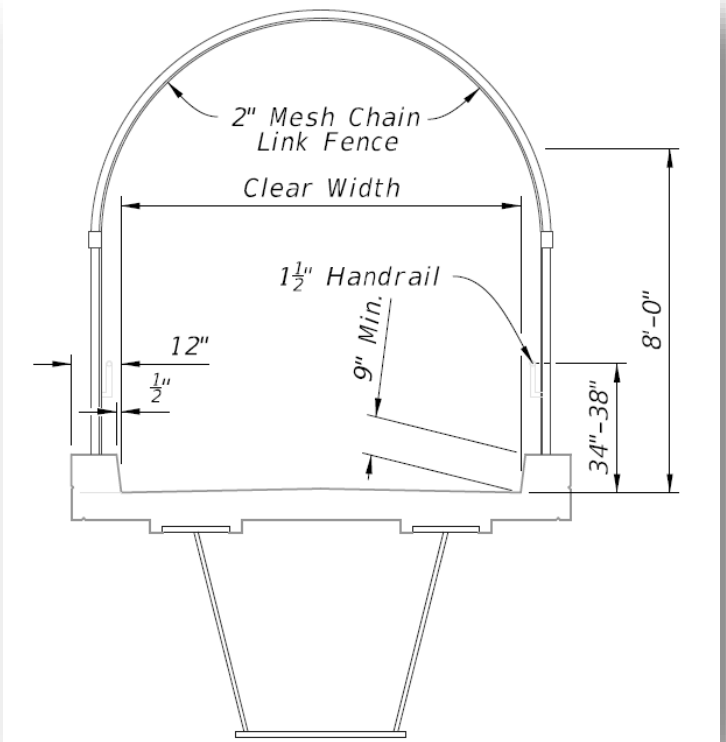
Grade separation may be appropriate when at-grade crossings are inadequate, such as where speeds exceed 45 mph or major pedestrian generators create sustained demand. These crossings are most common in rural and suburban contexts. Grade separation may be selectively utilized to support the crossing of large pedestrian volumes across highways where

In rural and suburban contexts, overpasses or underpasses may be considered to connect trails, parks, shopping centers, sports and amusement facilities, transit centers, or schools across high-speed arterials when context-sensitive at-grade options (i.e., signals, refuge islands, curb extensions) are infeasible.

In urban contexts, overpasses and underpasses should generally be avoided, except where they directly serve adjacent land uses (e.g., a bridge between a parking structure and the building it serves).

The recommended width of an overpass or underpass should follow the criteria for shared use paths found in **Chapter 9 – Bicycle Facilities**. The minimum clear width of any stand-alone pedestrian overpass or underpass on a pedestrian accessible route is 12<sup>8</sup> feet. However, if the contiguous sidewalk or path is greater than 12<sup>8</sup> feet wide, the clear width of the overpass or underpass should match that width. The minimum clear height of a pedestrian overpass or underpass is 8 feet. See **Figure 8 – 3 Pedestrian Bridge Typical Section** for an example of a pedestrian bridge typical section.

**Figure 8-3 Pedestrian Bridge Typical Section**  
[Redraw dimensions to show where the 8' is capped]



# Crosswalk Definition Update

## 8.7.1 Crosswalks

Under Section 316.003(17), Florida Statutes, crosswalks exist at most intersections—whether marked or unmarked—as part of the legal definition of a crosswalk. The following guidance applies specifically to marked pedestrian crosswalks, which may be located at intersections or at midblock locations. Do not install curb ramps at mid-block locations without a marked crosswalk.

The design of pedestrian crosswalks ~~shall~~ should be based on the following requirements:

- Crosswalks ~~should~~ shall be placed at locations with sufficient sight distances.
- At crossings, the roadway should be free from changes in alignment or cross section.
- The entire length of a crosswalk shall be visible to drivers at a sufficient stopping sight distance to allow a stopping maneuver.
- Stop bars or yield markings, in conjunction with the appropriate signing, shall be provided at all marked crosswalks.
- Crosswalks shall be easily identified and clearly delineated, in accordance with the *Manual on Uniform Traffic Control Devices (MUTCD)* and *Rule 14-15.010, F.A.C.*

# Midblock Crosswalks in Different Contexts

## 8.7.1.2 Midblock Crosswalks

~~Midblock crosswalks facilitate crossings to places that people want to go but that are not well served by the existing sidewalk or path network. These pedestrian crossings commonly occur at schools, parks, museums, waterfronts, and other destinations. Designers should study both existing and projected pedestrian volumes in assessing warrants for midblock crossings to account for latent demand.~~

~~Midblock crossings are located according to a number of factors including pedestrian volume, traffic volume, roadway width, traffic speed and type, desired paths for pedestrians, land use, and \_\_\_\_\_ to \_\_\_\_\_ accommodate \_\_\_\_\_ transit \_\_\_\_\_ connectivity.~~

Midblock crosswalks are marked crosswalks located away from intersections and are often used to connect destinations such as schools, parks, museums, waterfronts, and commercial districts. In higher -intensity contexts (C2T, C3C, C4, C5, and C6), frequent midblock crossings are justified by land use and pedestrian activity, regardless of measured pedestrian volumes. In lower -intensity contexts (C1, C2, and C3R), pedestrian demand should be evaluated to determine both the need and the appropriate location.

Placement should consider proximity to significant pedestrian generators and attractors on opposite sides of the street, including transit stops, schools, senior housing, and other key destinations. They should align with the natural path pedestrians are likely to take, and sight distance and visibility requirements should follow **Section 8.7.8.**

When transit stops are present, the stop should be located downstream of the crossing so pedestrians cross behind the bus, increasing visibility for approaching vehicles.

This is a working document that has not been adopted.

# Currently Exploring...

- Guidance on crosswalk placement from edge of parallel travel way
- Justification for wider curb ramps
- Research on stop bar distances and vehicular size
- Sign requirements for marked crosswalks on local neighborhood streets
- Shared street design best practices
- Sidewalk width criteria for underpass crossings
- Maintenance concerns with 2' buffer behind curbs

# Context-Based Design – History and Overview

**Billy Hattaway, PE, MBA, RSP1**

England-Thims & Miller, Inc.

# Agenda

- How we got here.
  - Design Speed
  - Land Development Patterns
  - The Results
- Transportation Safety Issues
  - Dangerous by Design
  - The Impacts
- Vision Zero/Safe System
- Funding
- FDOT Response
- Greenbook Direction
- Where Do We Go From Here?

# How we got here.

---



# Design Speed

---

“Every effort should be made to use as high a design speed as practical to attain a desired degree of safety, mobility and efficiency.”

American Association of State Highway Transportation Officials  
(AASHTO)

VS.

Picking a desired speed based on the built environment (compact urban, suburban, rural)

# Speed/Exposure/Visibility

IF HIT BY A PERSON DRIVING AT

**20**  
MPH



DEATH RISK

**10%**

**30**  
MPH



DEATH RISK

**50%**

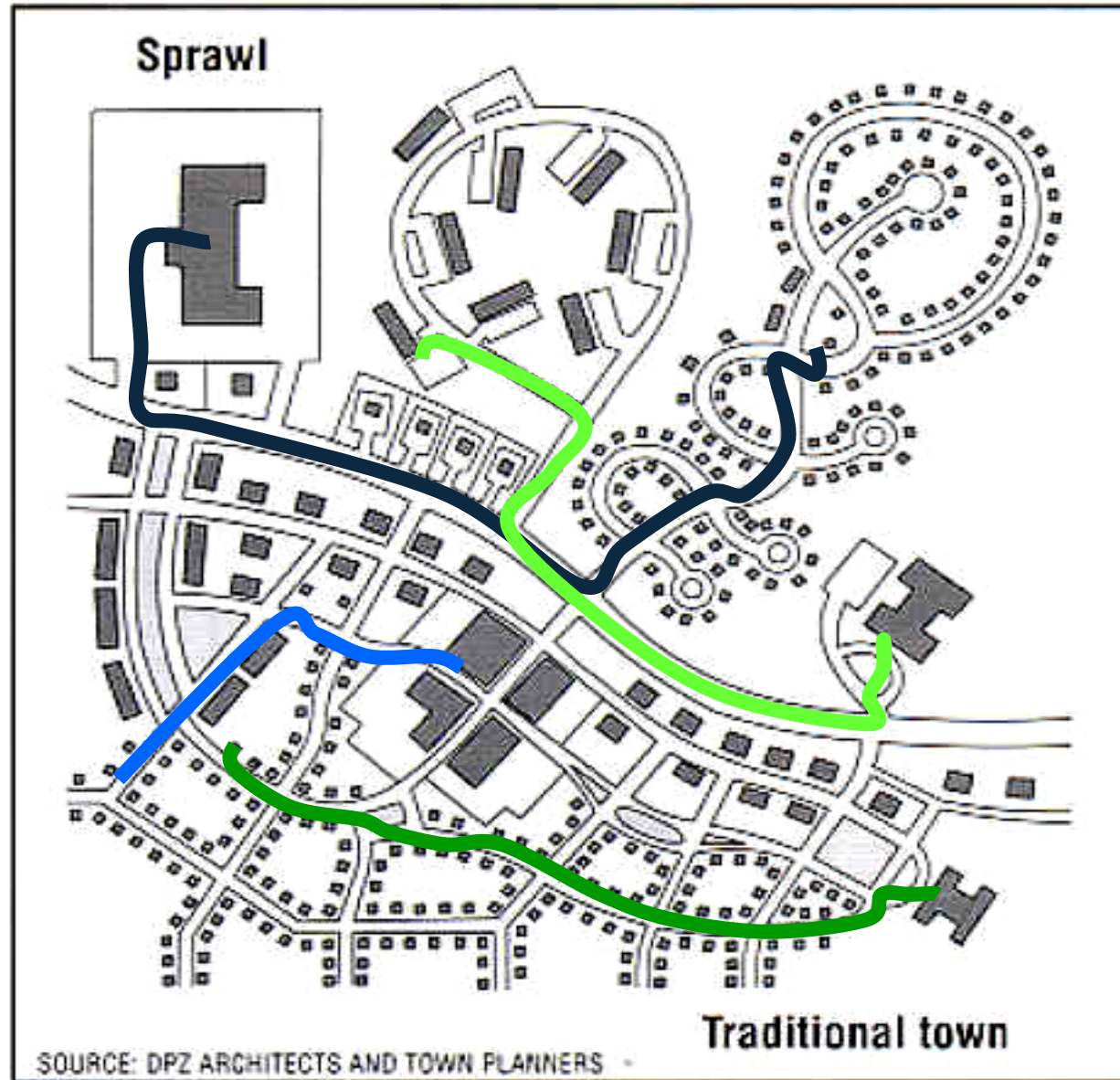
**40**  
MPH



DEATH RISK

**90%**

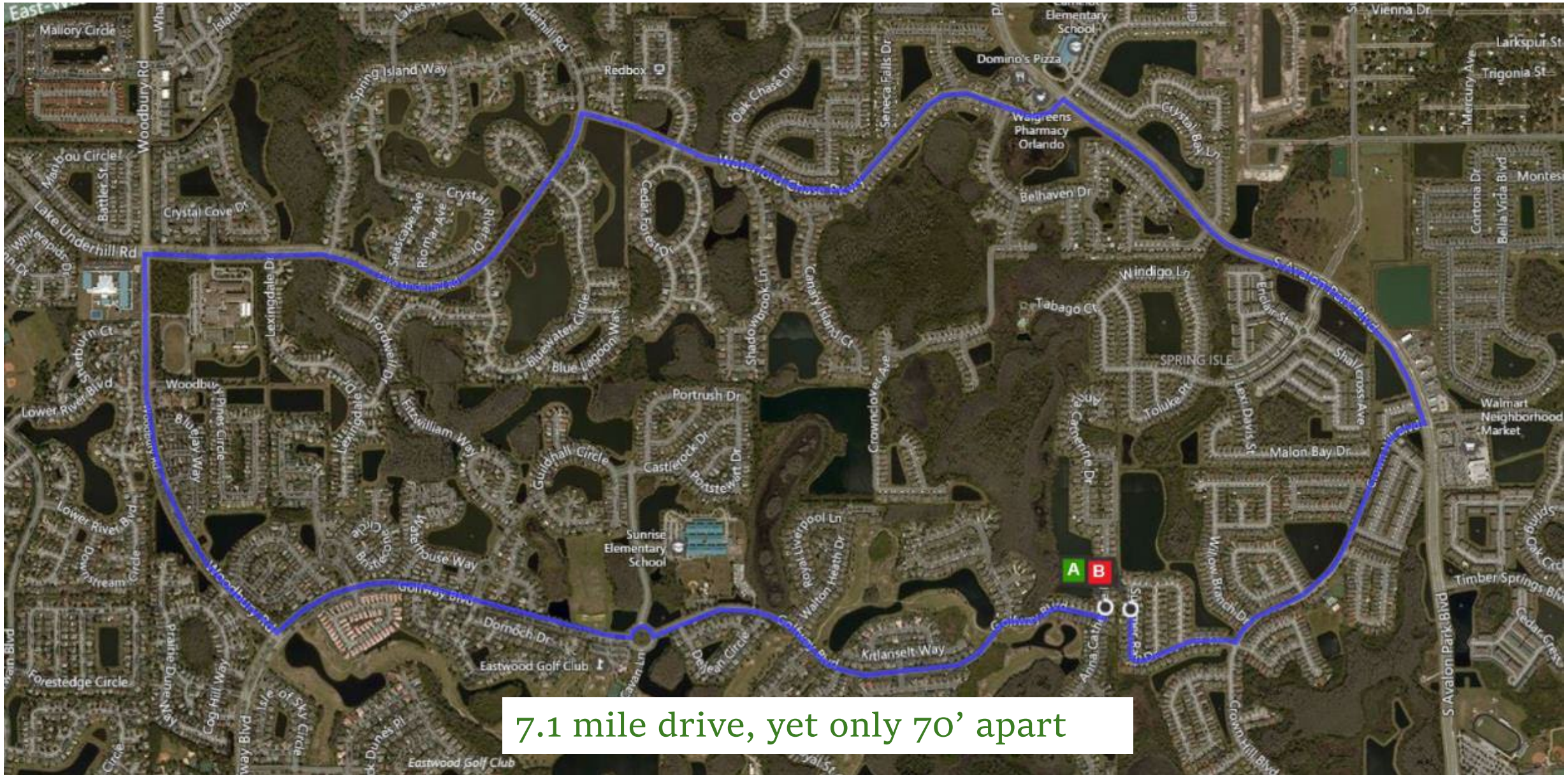
# Separated Land Uses



# Disconnected Development



# The Results



7.1 mile drive, yet only 70' apart

# The Results

---



Orange County, FL  
Elementary School  
830 Students

- 1969 - 48% of students walk or bike to school
- 2009 - less than 13% of students walk or bike to school
- 2022 - less than 11% walk or bike to school
  
- Since World War II, the number of schools declined 70% while average school size grew fivefold, from 127 to 653 students.
- 92% of parents cite distance and traffic safety concerns as why their children don't walk to school.

# The Results

---

THERE IS TOO MUCH TRAFFIC  
FOR BILLY TO WALK TO SCHOOL;  
SO WE DRIVE HIM.



*Ian Lockwood, PE*

# The Results – Safe Route to School?

---



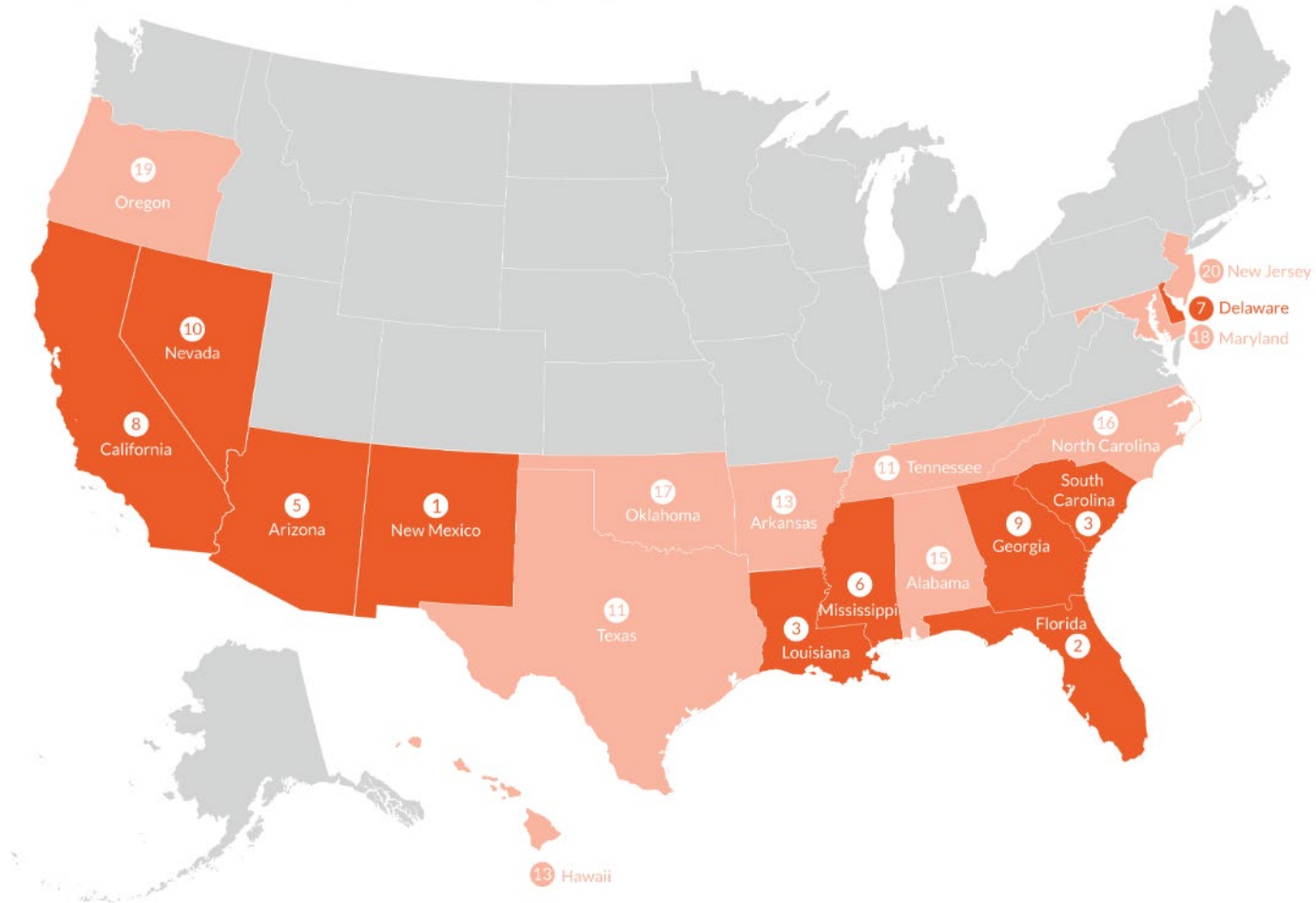
# Dangerous by Design, 2011-2024



# Dangerous by Design, 2011-2024

## The top 20 most deadly states for people walking

By number of deaths per 100,000 people, 2018-2022

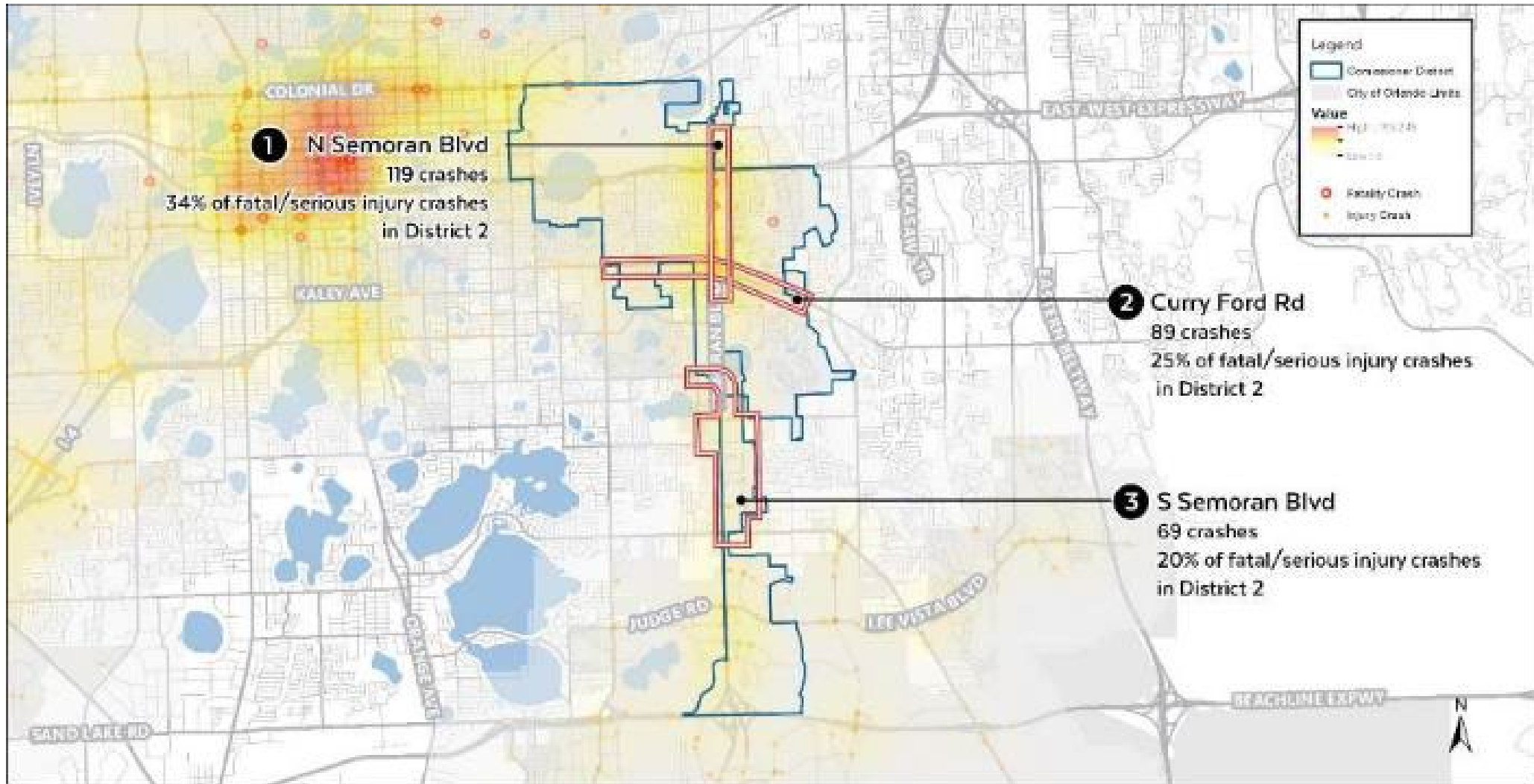


Source: National Highway Traffic Safety Administration. (2024). Fatality Analysis Reporting System.

# 8 out of top 20 Nationally

Rank	↕ Metro Area	↕ Avg. annual pedestrian fatality rate per 100k people (2018-2022)	↕ Pedestrian deaths (2018-2022)	↕ Pedestrian deaths (2013-2017)	↕ Long term trend in fatality rate
1	Memphis, TN-MS-AR	5.14	343	186	2.37
2	Albuquerque, NM	4.83	221	138	1.78
3	Tucson, AZ	4.16	217	105	2.08
4	Bakersfield, CA	3.99	181	151	0.55
→ 5(t)	Deltona-Daytona Beach-Ormond Beach, FL	3.96	134	107	0.53
5(t)	Baton Rouge, LA	3.96	172	99	1.57
7	Fresno, CA	3.89	196	111	1.60
→ 8	Tampa-St. Petersburg-Clearwater, FL	3.75	599	500	0.39
9	Charleston-North Charleston, SC	3.66	147	97	1.05
10	Little Rock-North Little Rock-Conway, AR	3.63	136	62	1.93
→ 11	Palm Bay-Melbourne-Titusville, FL	3.47	106	107	-0.30
12(t)	Columbia, SC	3.46	144	94	1.14
12(t)	Riverside-San Bernardino-Ontario, CA	3.46	797	572	0.90
→ 14	Miami-Fort Lauderdale-Pompano Beach, FL	3.44	1054	851	0.61
→ 15	Jacksonville, FL	3.40	274	260	-0.20
→ 16	Cape Coral-Fort Myers, FL	3.29	127	91	0.69
→ 17	North Port-Sarasota-Bradenton, FL	3.27	138	111	0.38
→ 18	Orlando-Kissimmee-Sanford, FL	3.26	437	370	0.17
19	Stockton, CA	3.23	126	89	0.78
20	Sacramento-Roseville-Folsom, CA	3.15	377	238	1.05

# City of Orlando - High Injury Network



79% of fatalities and serious injuries

# Cost of Collisions

## Average Comprehensive Cost by Injury Severity, 2019

Death (K)	\$11,148,000
Disabling (A)	\$1,219,000
Evident (B)	\$336,000
Possible injury (C)	\$155,000
No injury observed (O)	\$51,000

Source: National Safety Council, 2019

### Cost Includes:

Wage and productivity losses

Medical expenses

Administrative expenses

Motor vehicle damage

Employers uninsured costs



Motor-Vehicle Crashes Cost

**\$463.0 Billion**

Florida per licensed driver cost of traffic collisions is about \$2,800 – 40% higher than the national average.

Source: Fehr & Peers

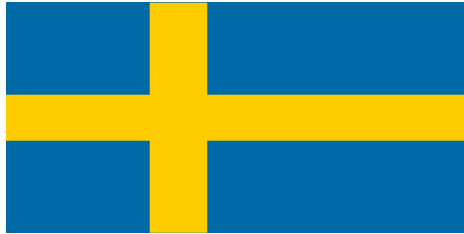
# FHWA Definition of Incapacitating Injuries

---

- Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
- Broken or distorted extremity (arm or leg)
- Crush injuries
- Suspected skull, chest, or abdominal injury other than bruises or minor lacerations
- Significant burns (second and third degree burns over 10% or more of the body)
- Unconsciousness when taken from the crash scene
- Paralysis

# Vision Zero Internationally

---



## Sweden

Vision Zero – 1995 Launch

**60-70%**

Fatality Reduction 1994-2015

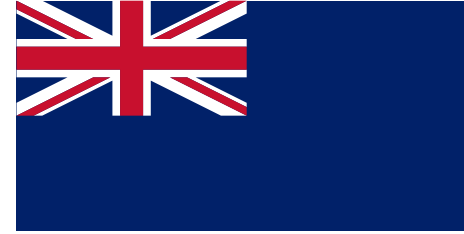


## Netherlands

Sustainable Safety

**50-60%**

Fatality Reduction 1994-2015

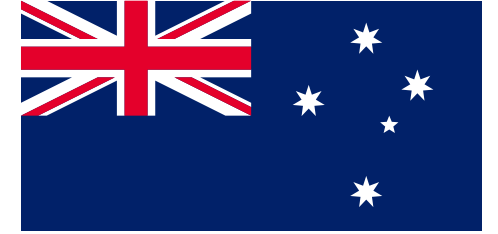


## Australia

Safe System

**50-60%**

Fatality Reduction 1994-2015



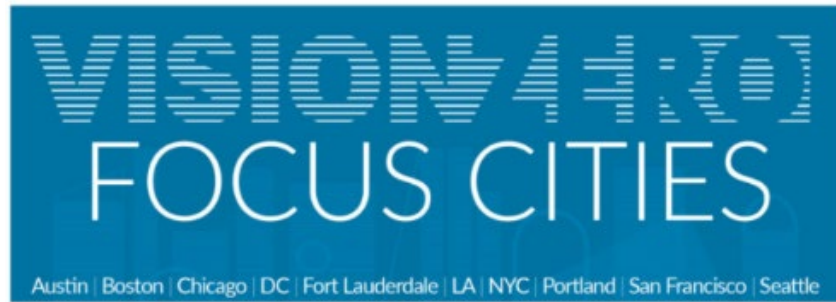
## New Zealand

Safer Journeys

**50-60%**

Fatality Reduction 1994-2015

# Vision Zero in the U.S.

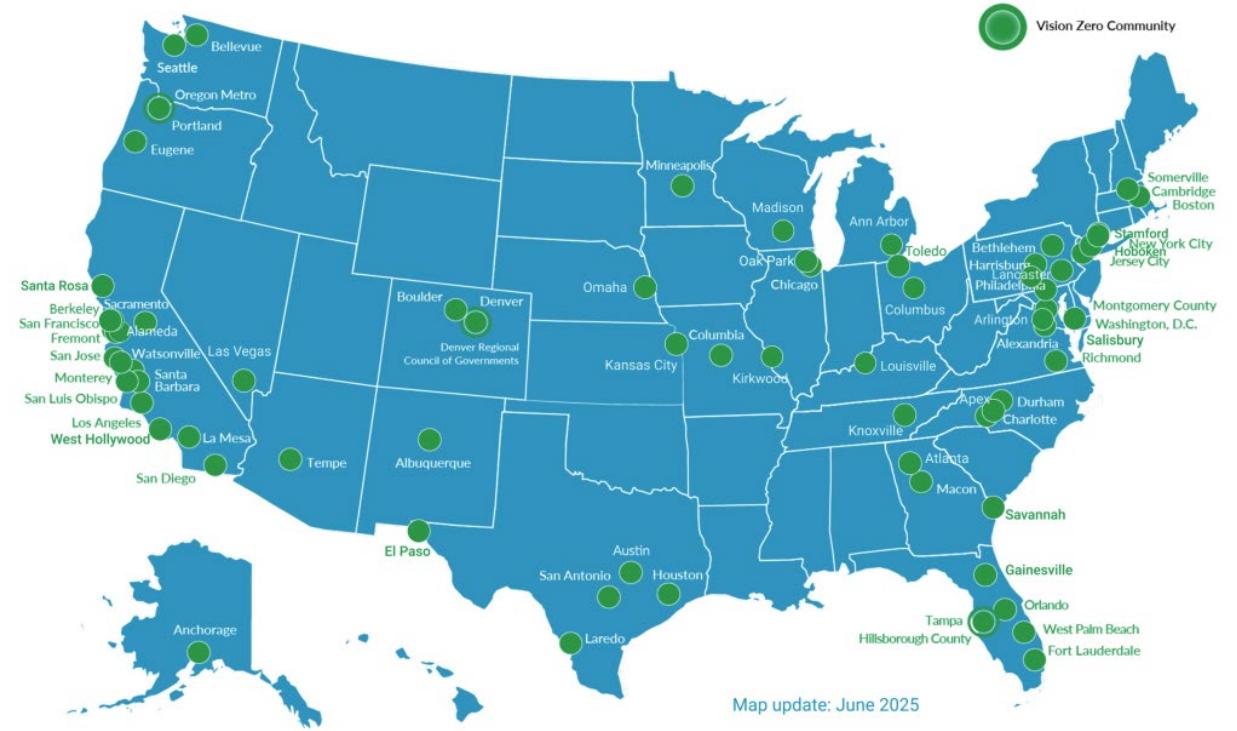


2015 Launch



2022 Launch

## VISION ZERO NETWORK



Gainesville  
Hillsborough County  
Orlando  
Tampa  
Ft. Lauderdale \*

W. Palm Beach \*

# Vision Zero in the U.S.

---

## **TRADITIONAL APPROACH**

Traffic deaths are **INEVITABLE**

**PERFECT** human behavior

Prevent **COLLISIONS**

**INDIVIDUAL** responsibility

Saving lives is **EXPENSIVE**

**VS**

## **VISION ZERO**

Traffic deaths are **PREVENTABLE**

Integrate **HUMAN FAILING** in approach

Prevent **FATAL AND SEVERE CRASHES**

**SYSTEMS** approach

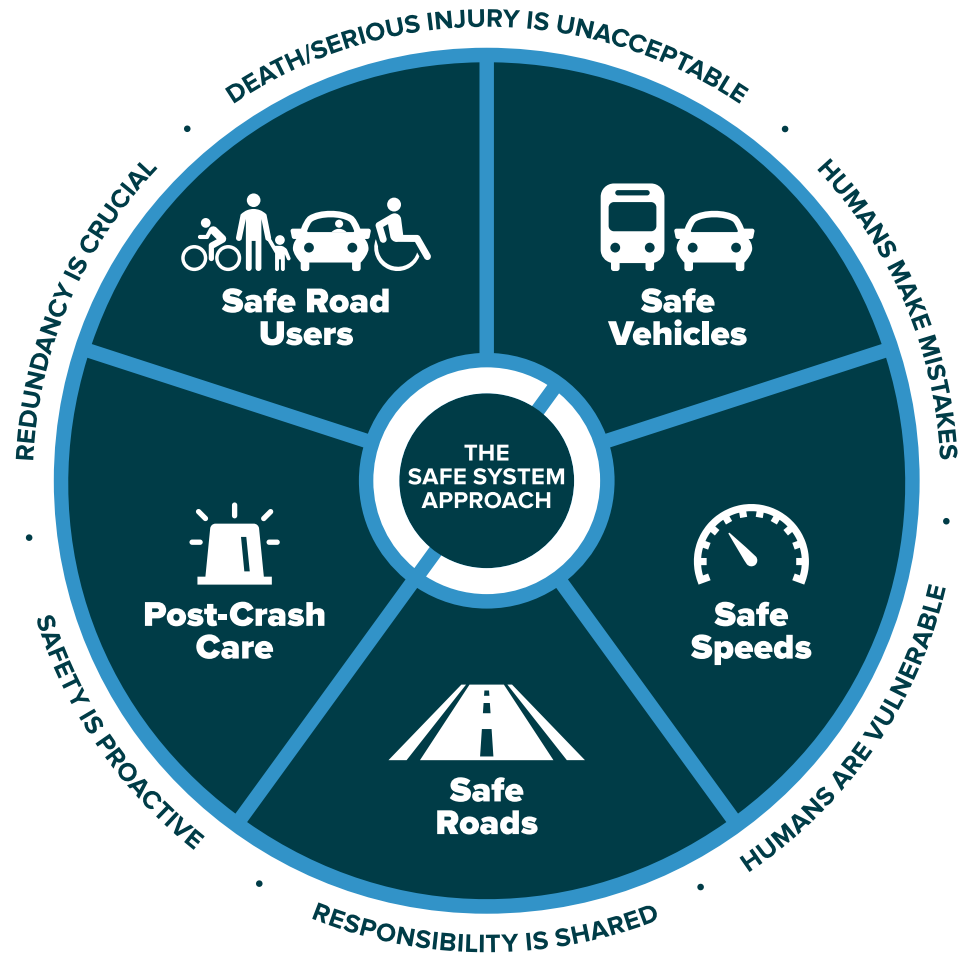
Saving lives is **NOT EXPENSIVE**

# Safety Efforts at Florida DOT



# Safe System

Zero is our goal. A Safe System is how we will get there.

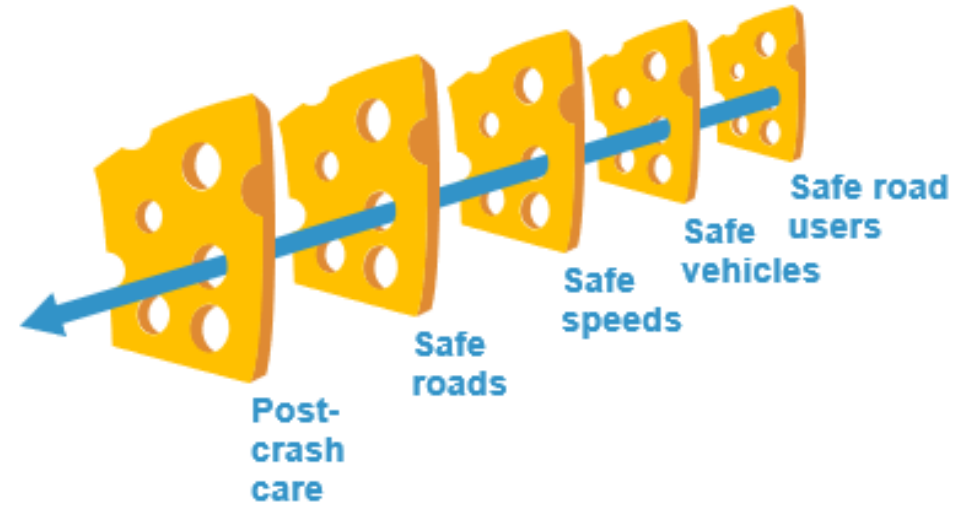
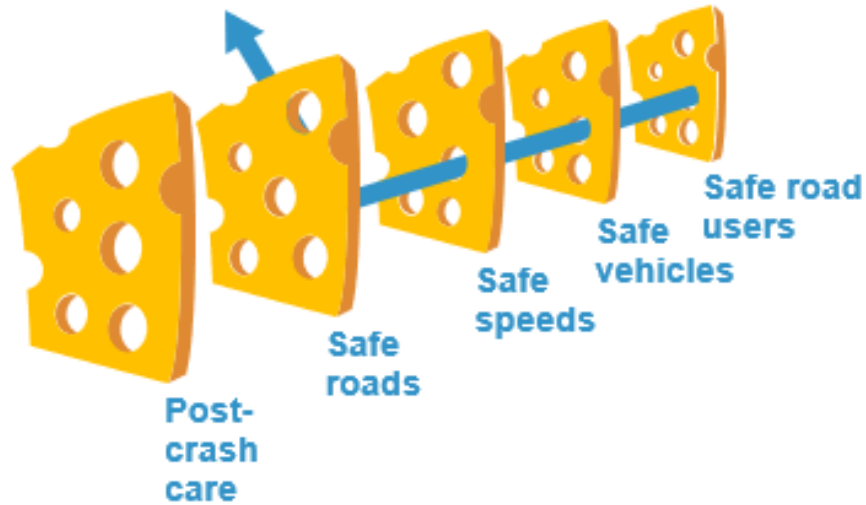


U.S. Department of Transportation  
Federal Highway Administration

# Redundancy is Critical!!

The "Swiss Cheese Model" of redundancy creates layers of protection

Death and serious injuries only happen when all layers fail



**Safe road users**



**Safe vehicles**



**Safe speeds**



**Safe roads**



**Post-crash care**

# Safe Speed

---



“Speed is at the heart of a forgiving roadway system. It transcends all aspects of safety:”



“Without speed there can be no movement, but with speed comes kinetic energy and with kinetic energy and human error come crashes, injuries, and even deaths.”

# Safe Roads/Streets

---

Safe roads/streets are designed and operated to:

- Prevent Crashes
- Keep impacts on the human body to tolerable levels



Separate users in space



Separate users in time



Increase awareness

# FHWA Proven Safety Countermeasures

---

## Speed Management



[Appropriate Speed Limits for All Road Users](#)



[Speed Safety Cameras](#)



[Variable Speed Limits](#)

## Pedestrian/Bicyclist



[Bicycle Lanes](#)



[Crosswalk Visibility Enhancements](#)



[Leading Pedestrian Interval](#)



[Medians and Pedestrian Refuge Islands in Urban and Suburban Areas](#)



[Pedestrian Hybrid Beacons](#)



[Rectangular Rapid Flashing Beacons \(RRFB\)](#)



[Road Diets \(Roadway Reconfiguration\)](#)



[Walkways](#)

# FHWA Proven Safety Countermeasures

---

## Roadway Departure



[Enhanced Delineation for Horizontal Curves](#)



[Longitudinal Rumble Strips and Stripes on Two-Lane Roads](#)



[Median Barriers](#)



[Roadside Design Improvements at Curves](#)



[SafetyEdge<sup>SM</sup>](#)



[Wider Edge Lines](#)

## Intersections



[Backplates with Retroreflective Borders](#)



[Corridor Access Management](#)



[Dedicated Left- and Right-Turn Lanes at Intersections](#)



[Reduced Left-Turn Conflict Intersections](#)



[Roundabouts](#)



[Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections](#)



[Yellow Change Intervals](#)

# Meeting Design Standards = Safe Streets??

---

## Normative Safety

- Normative safety is achieved when a design meets applicable standards for design and construction regardless of the systems actual safety history.

## Substantive Safety

- Substantive or objective safety occurs when the real-world safety history is favorable, whether or not standards are met.

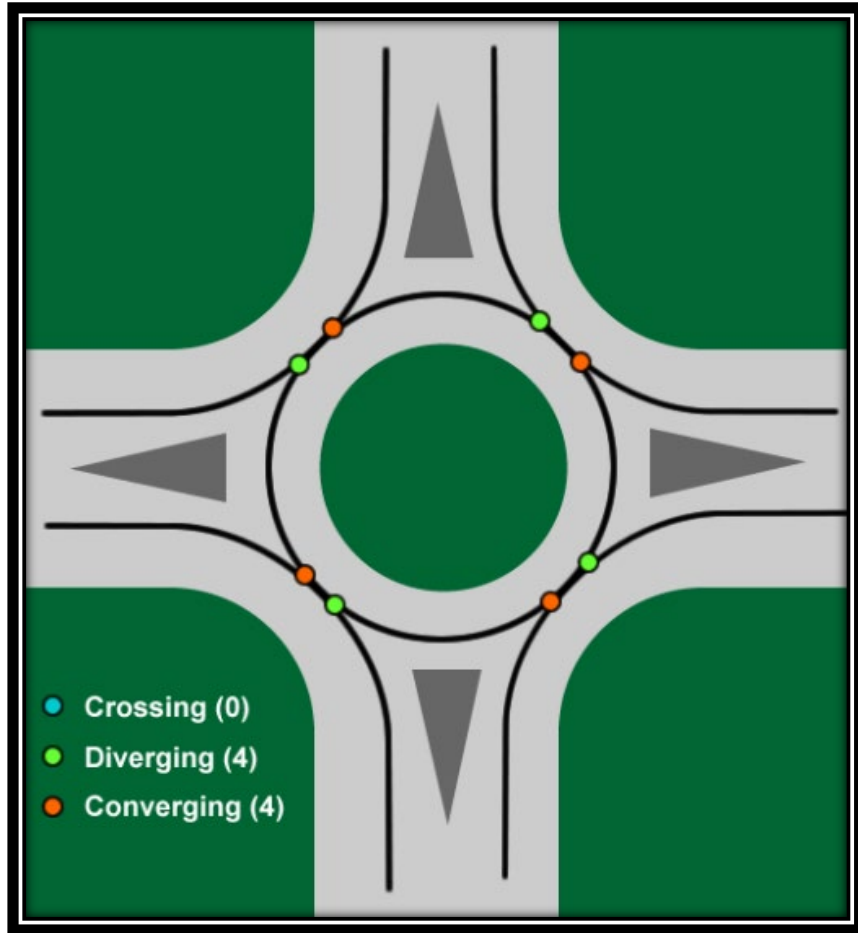
## Perceived Safety

- Perceived or subjective safety refers to the users' level of comfort and perception of risk, without consideration of standards or safety history.

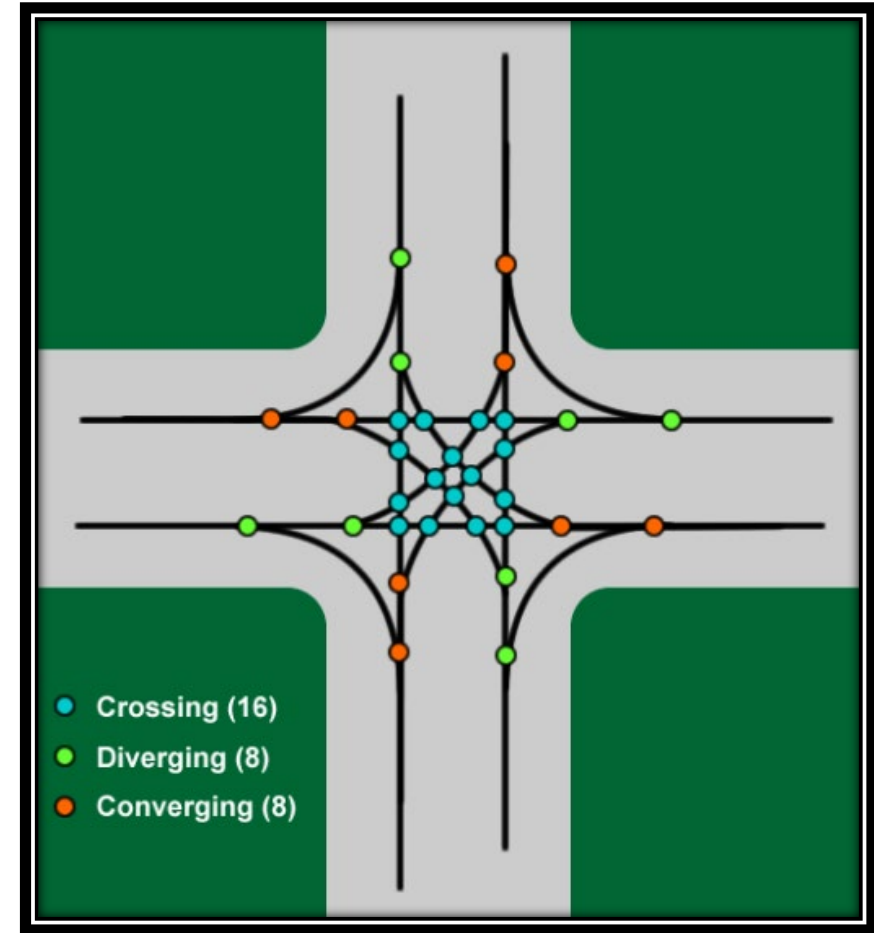
Example: Traffic signals are perceived as safe, yet they can increase traffic crashes at an intersection. Modern roundabouts are significantly safer than signals, yet often make inexperienced drivers nervous

# Modern Roundabouts

Managing speed/crash angles/points of conflict



8 Conflict Points



32 Conflict Points

## Improve Safety

- 82% Less fatal and injury crashes – Two way stop (two lane roads)
- 78% Less fatal and injury crashes – Signalized intersection (two lane roads)

## More Efficient/Reliable

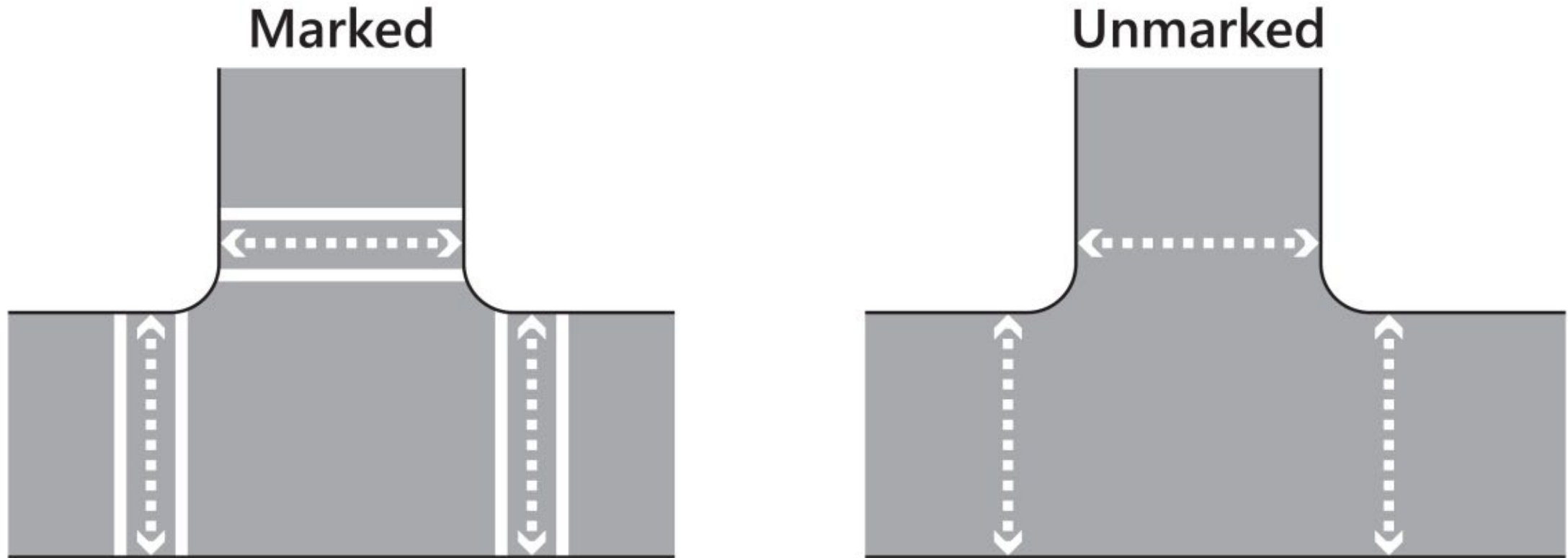
- Less delay (Lost time)
- Reduced stopping (reduced emissions)
- Function during loss of power

## Cost Effective

- Installation, maintenance and operations (no signals)
- Reduced pavement
- Reduced right of way (single lane)

# Education

---



<https://www.flhsmv.gov/pdf/handbooks/englishdriverhandbook.pdf>

# Education

---



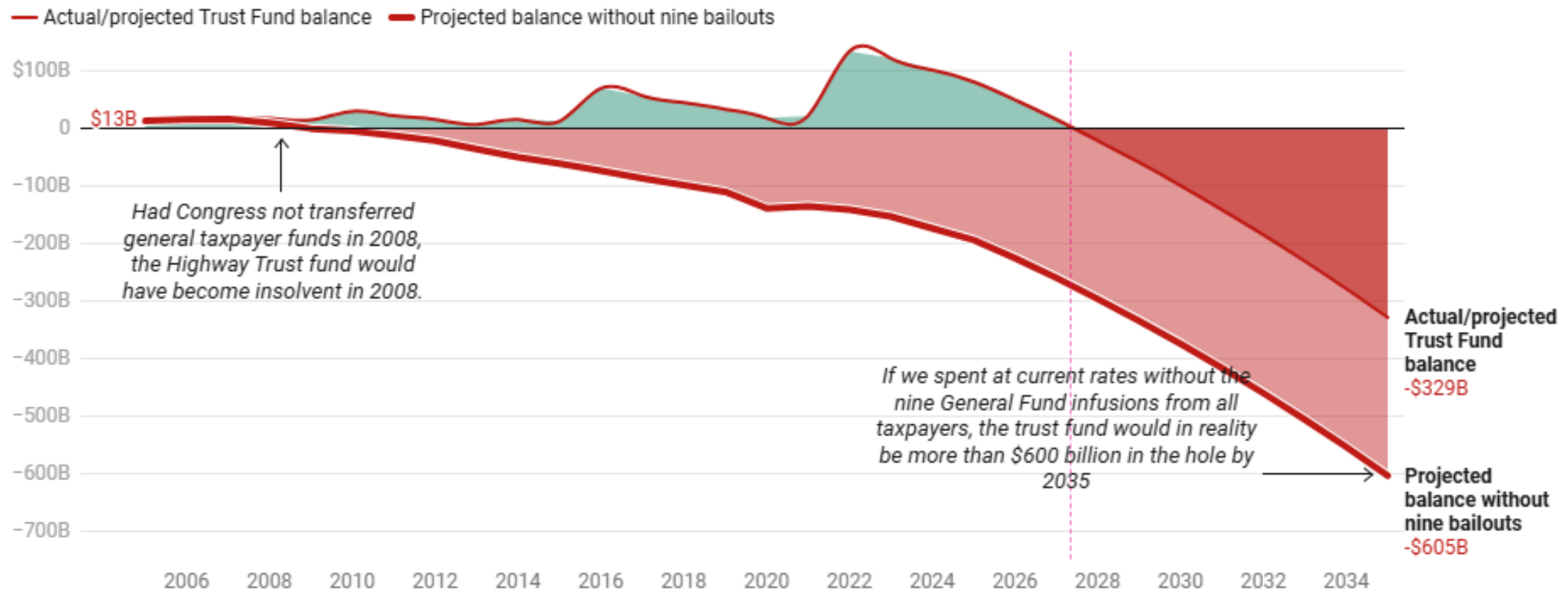
# Education: Transparency

---



# What About Funding?

## The Highway Trust Fund balances *without* nine bailouts



Source: Bureau of Transportation Statistics (<https://data.bts.gov/stories/s/Transportation-Economic-Trends-Government-Transportor/6bdc-i7mh/>) and Congressional Budget Office (<https://www.cbo.gov/system/files/2025-01/51300-2025-01-highwaytrustfund.pdf>)

Source: [Transportation for America](#) • [Get the data](#) • Created with [Datawrapper](#)

# What About Funding?

---

The United States is rapidly accelerating toward a definitive tipping point in its financial history, the Committee for a Responsible Federal Budget (CRFB) wrote in response to the latest 10-year outlook from the Congressional Budget Office. The nonpartisan budget watchdog issued a stark assessment: The current trajectory of borrowing, which is running at double the 50-year historical average, is simply mathematically unsustainable.

The Highway Trust Fund is projected to deplete its reserves by fiscal year 2028. Upon insolvency, federal law mandates that spending be cut to match incoming revenue. The CRFB estimates this would result in an immediate 40% cut to highway spending.

# What About Funding?

---

- Federal Gas Tax: 18.4 cents/gallon
- Last raised October 1, 1993
- Not indexed to inflation
- General fund transfer 2008-2023 = \$275 billion
  
- State Gas Tax: Indexed to inflation
- Expected to plateau in 2025 ????
  
- Local funds: Last raised in 1993
- Not indexed to inflation
- Fuel tax: 6-12 cents/gallon
- Impact fees: Must be spent on capacity
- Local Option Transportation Sales Tax

# What About Funding?

---

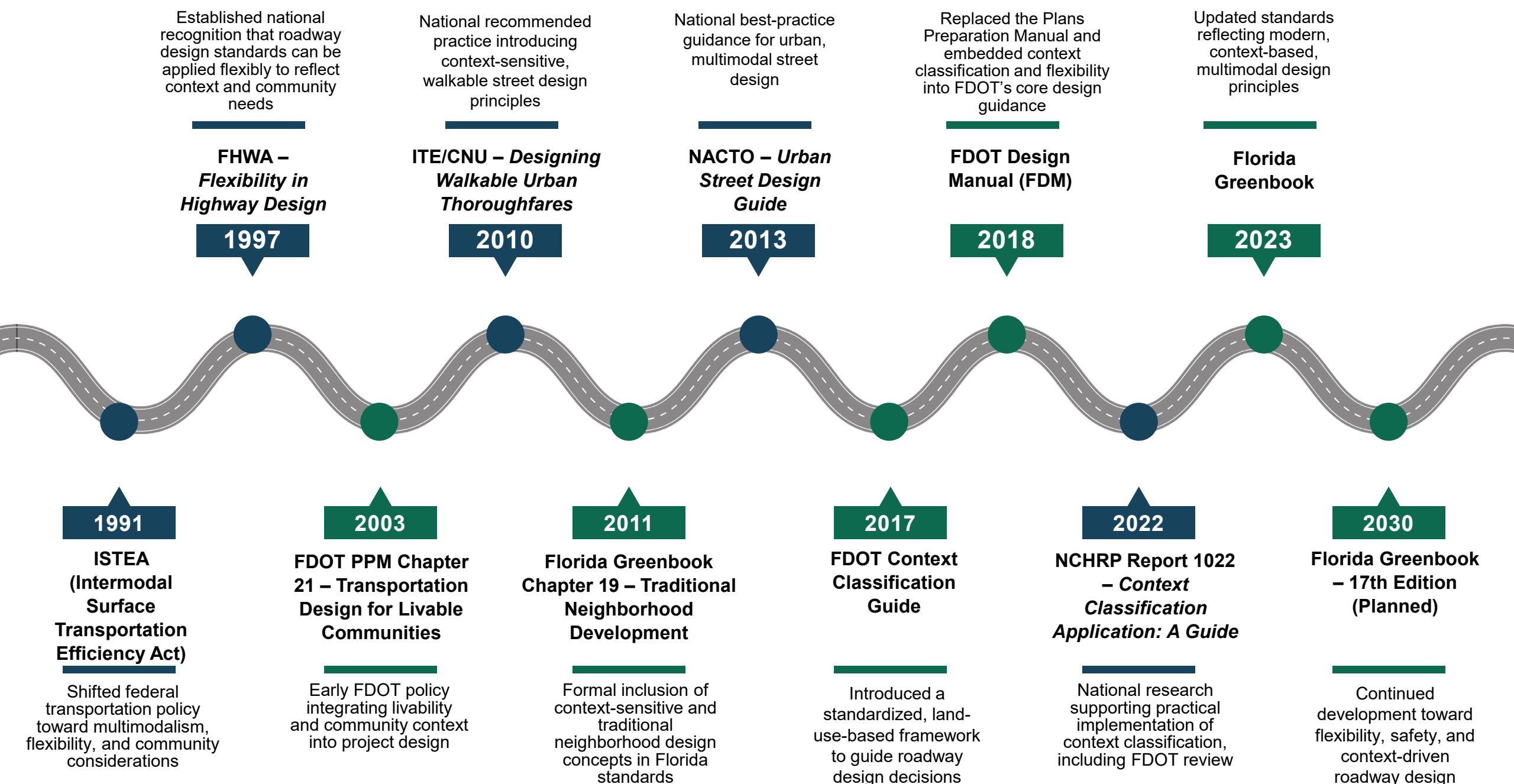
## There are only three basic options for moving forward

As Taxpayers for Common Sense wrote a few weeks ago, “the Highway Trust Fund’s looming insolvency is not just a transportation problem—it is a taxpayer problem.” There are three broad options at this point:

1. Take billions more from all taxpayers (whether they buy gas or not) by deficit spending, transferring billions into the trust fund, and having all taxpayers pick up the tab
2. Take billions more from taxpayers by raising revenues in some fashion (increasing gas taxes or establishing new taxes)
3. Cut the size of the program’s spending down to the amount of revenue brought in each year and live within our means

These first two options require taking more money from taxpayers to prop up a federal program that is failing to move the needle on repairing our crumbling infrastructure, reducing congestion, reducing emissions, or improving safety.

**It’s time to start thinking about that third option:** Scale the program down to the size of what the gas tax brings. Similar plans have been suggested before, including a slightly different 2014 proposal by Senator Mike Lee (R-UT) and 28 Senate Republicans to mostly phase out the federal gas tax—except for a few cents to fund interstate maintenance and repair only—and leave it to states to make up for the lost funding.



Established national recognition that roadway design standards can be applied flexibly to reflect context and community needs

**FHWA – Flexibility in Highway Design**

**1997**

National recommended practice introducing context-sensitive, walkable street design principles

**ITE/CNU – Designing Walkable Urban Thoroughfares**

**2010**

National best-practice guidance for urban, multimodal street design

**NACTO – Urban Street Design Guide**

**2013**

Replaced the Plans Preparation Manual and embedded context classification and flexibility into FDOT’s core design guidance

**FDOT Design Manual (FDM)**

**2018**

Updated standards reflecting modern, context-based, multimodal design principles

**Florida Greenbook**

**2023**

**1991**  
**ISTEA (Intermodal Surface Transportation Efficiency Act)**

Shifted federal transportation policy toward multimodalism, flexibility, and community considerations

**2003**  
**FDOT PPM Chapter 21 – Transportation Design for Livable Communities**

Early FDOT policy integrating livability and community context into project design

**2011**  
**Florida Greenbook Chapter 19 – Traditional Neighborhood Development**

Formal inclusion of context-sensitive and traditional neighborhood design concepts in Florida standards

**2017**  
**FDOT Context Classification Guide**

Introduced a standardized, land-use-based framework to guide roadway design decisions

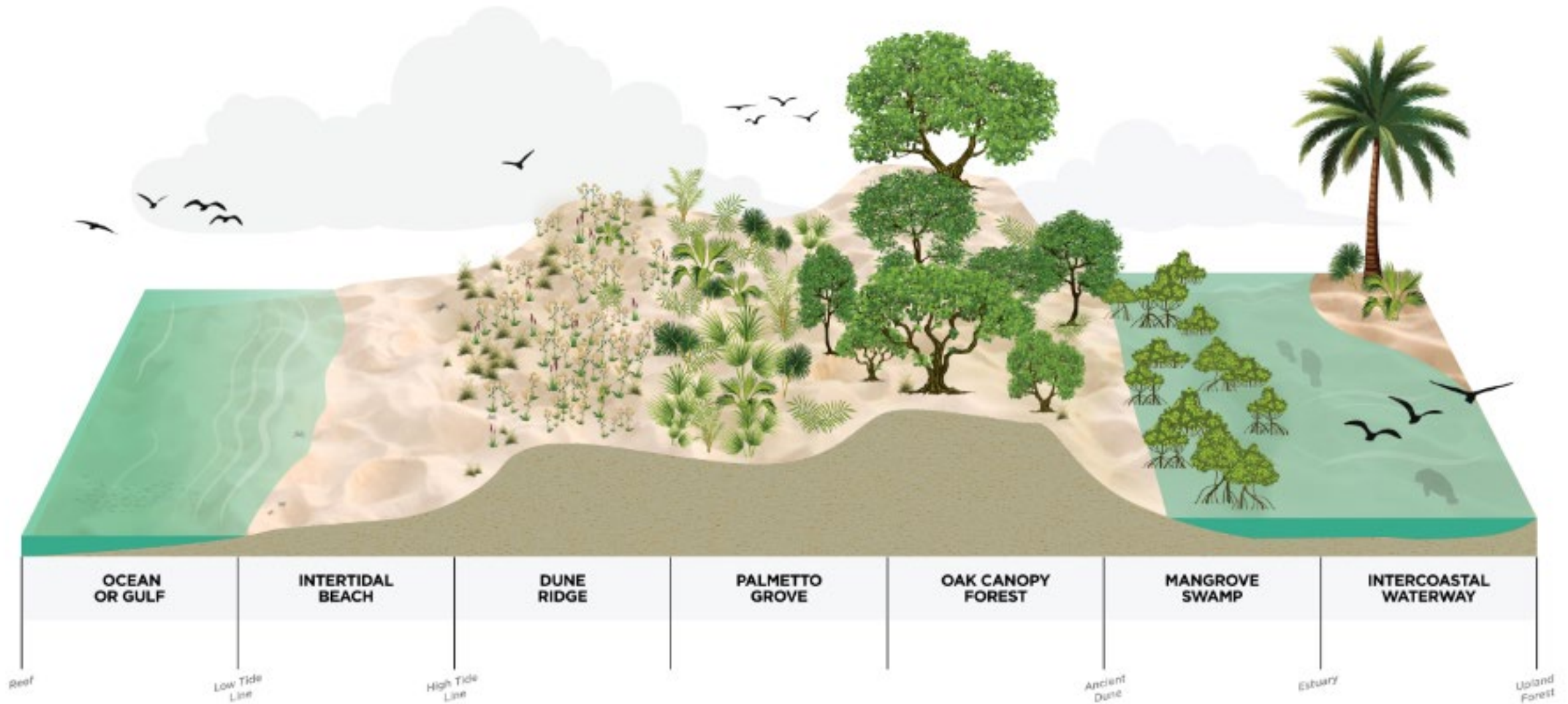
**2022**  
**NCHRP Report 1022 – Context Classification Application: A Guide**

National research supporting practical implementation of context classification, including FDOT review

**2030**  
**Florida Greenbook – 17th Edition (Planned)**

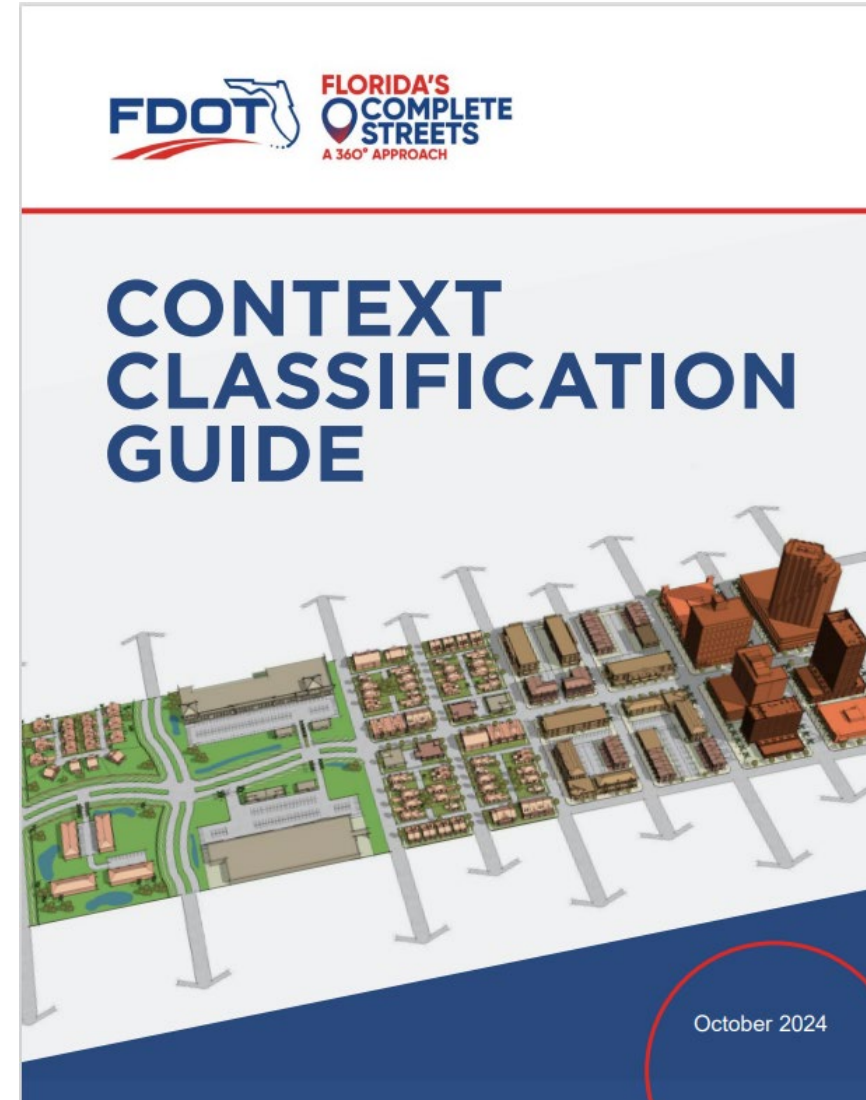
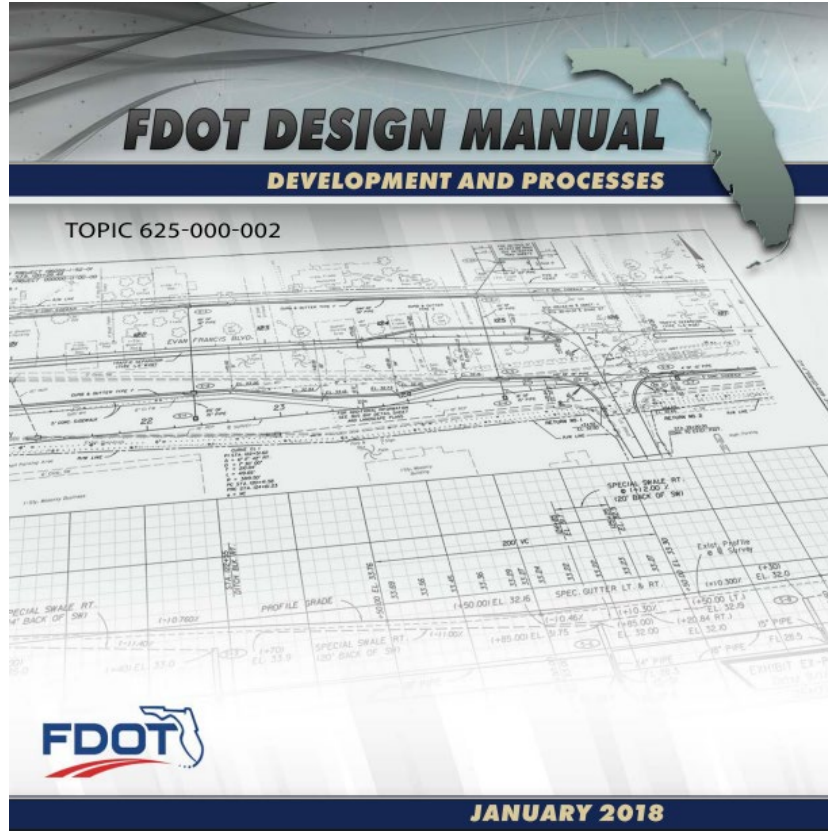
Continued development toward flexibility, safety, and context-driven roadway design

# The Transect





# FDOT Response



[fdot-context-classification.pdf](#)



# FDM Rural to Urban: Context Classification

“Context classification helps identify the anticipated users of the roadway”  
...so we design the right street for the right place instead of a one size fits all street design.



C1

C2

C2T

C3R

C3C

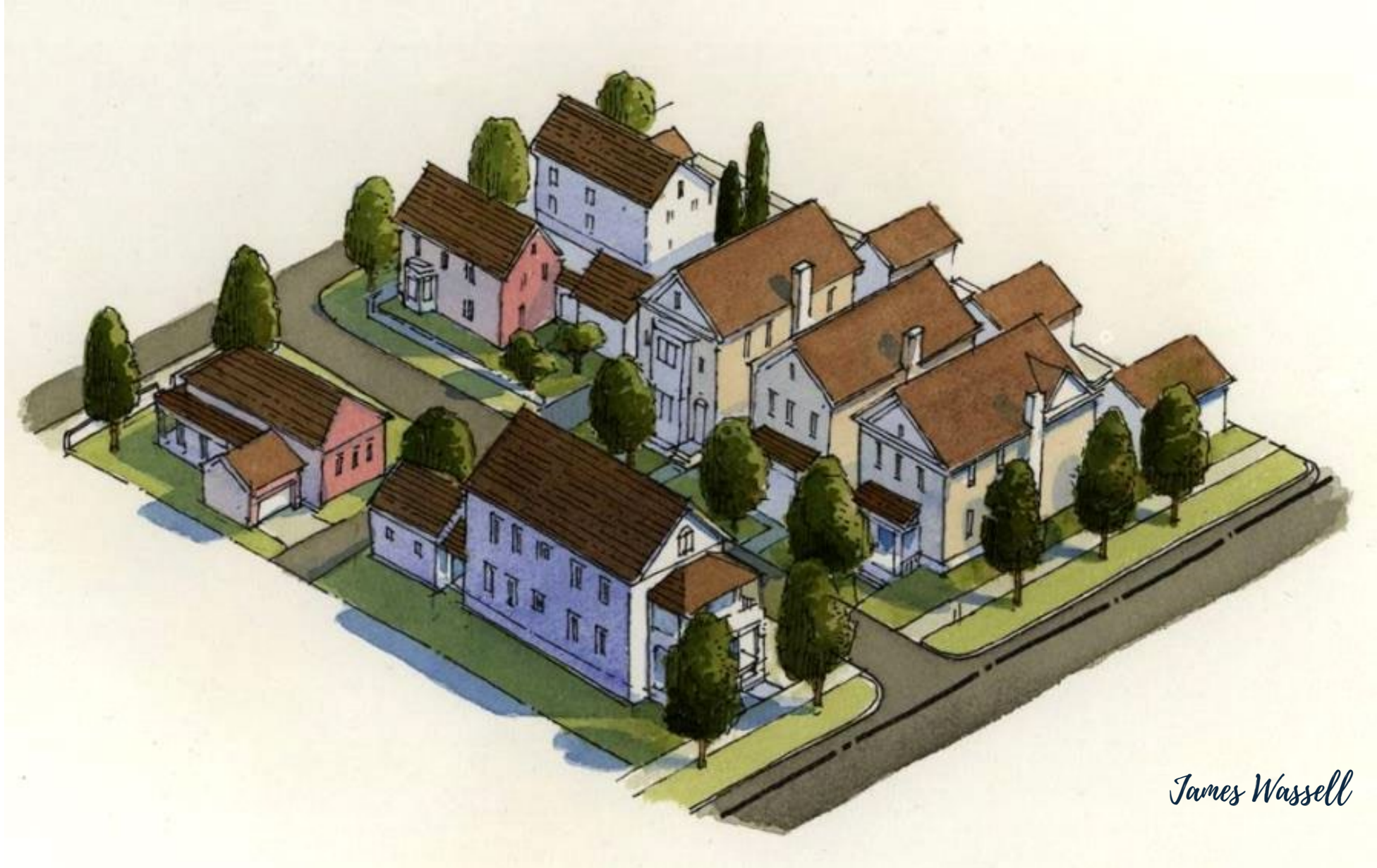
C4

C5

C6

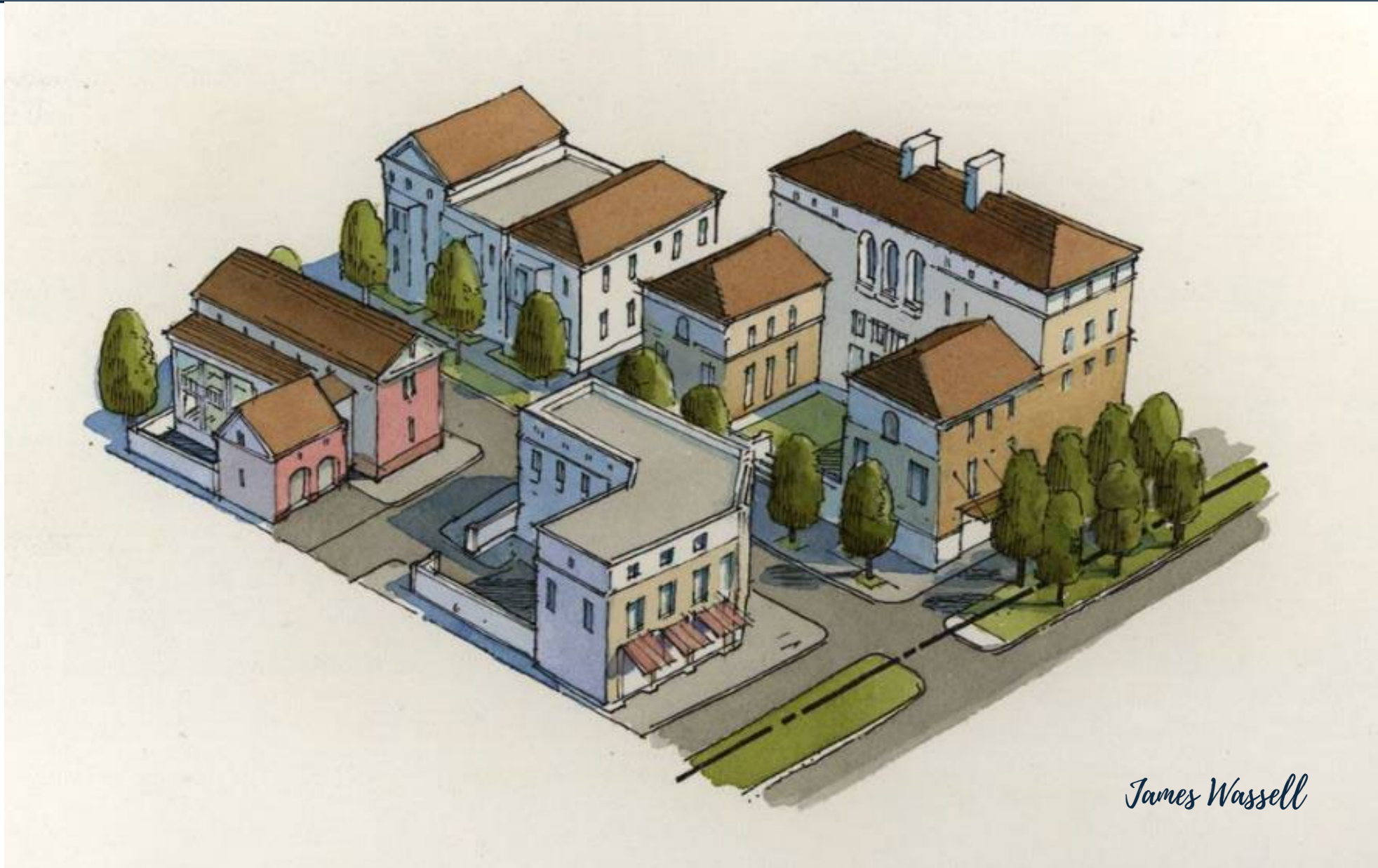
# C-4 General Urban

---



# C-5 Urban Center

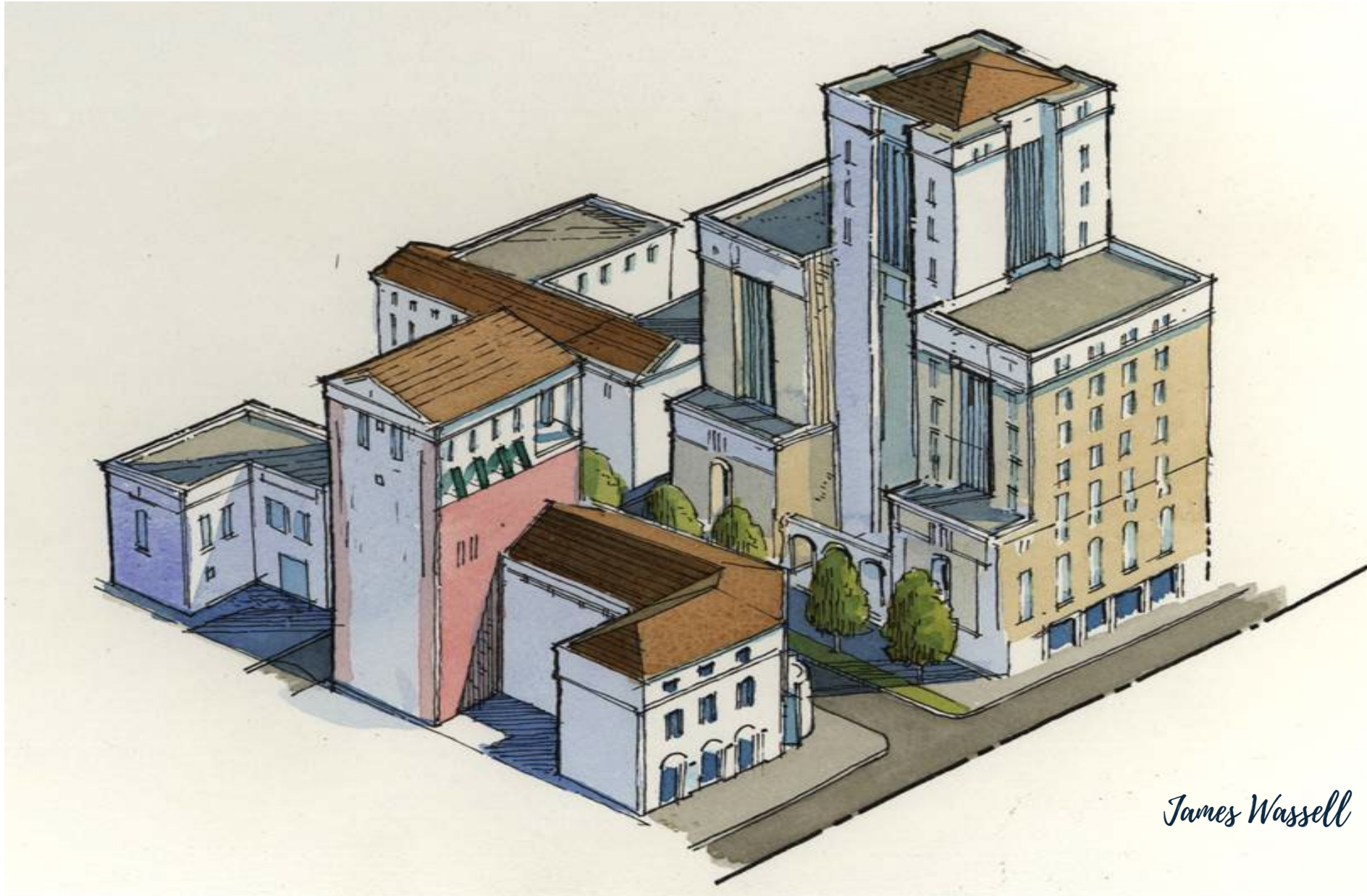
---



*James Wassell*

# C-6 Urban Core

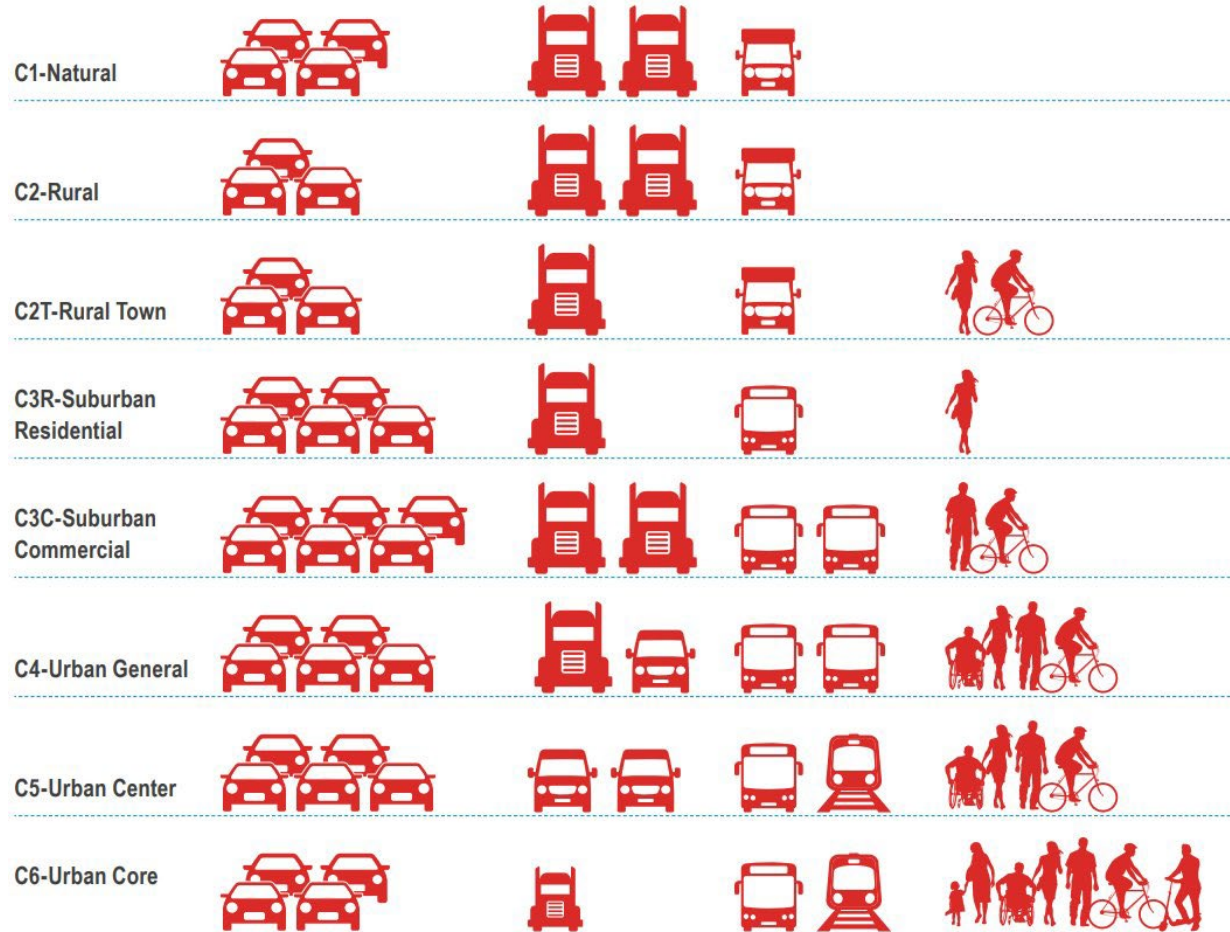
---



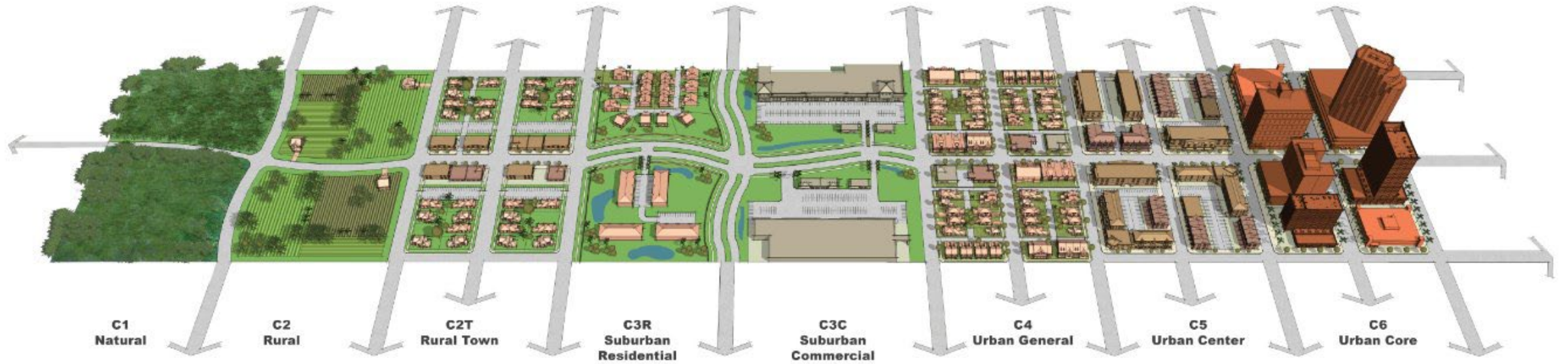
*James Wassell*

# Modal Expectations

FIGURE 7 Expected User Types In Different Context Classifications



# Modal Expectations

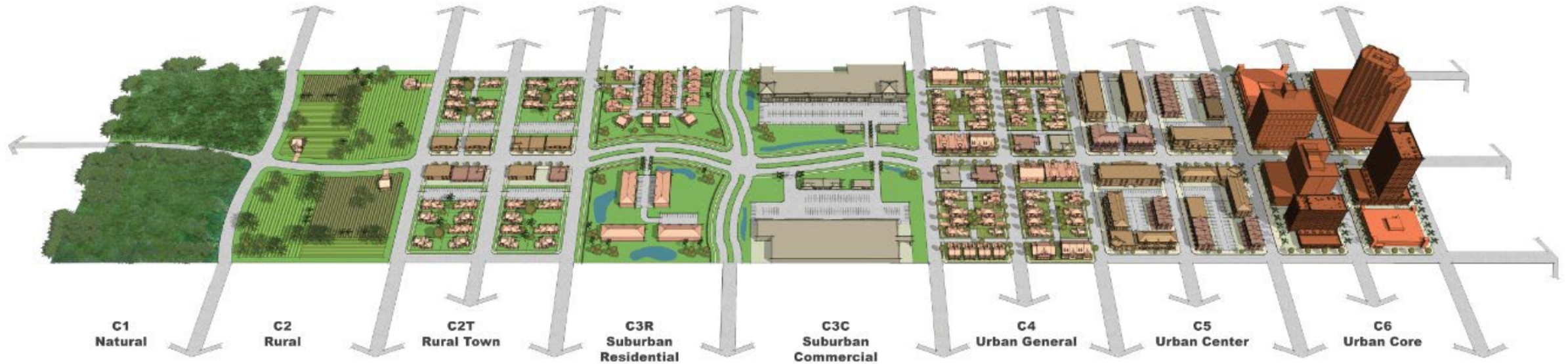


Transit in C2



Transit in C6

# Modal Expectations



Bicycling in C1



Bicycling in C6

# Context Based Criteria

---

## Design Criteria

- Before – context: urban or rural
  - 12' lanes
  - 5-6' sidewalks
  - Minimum design speed 40 mph (+ 5-10 mph)
  - Strategic Intermodal System (50 mph)
- After - context: C1, C2, C2T, C3R, C3C, C4, C5, C6
  - 10, 11 & 12' lanes
  - 5, 6, 10 & 12' sidewalks
  - Target speed as low as 25 mph

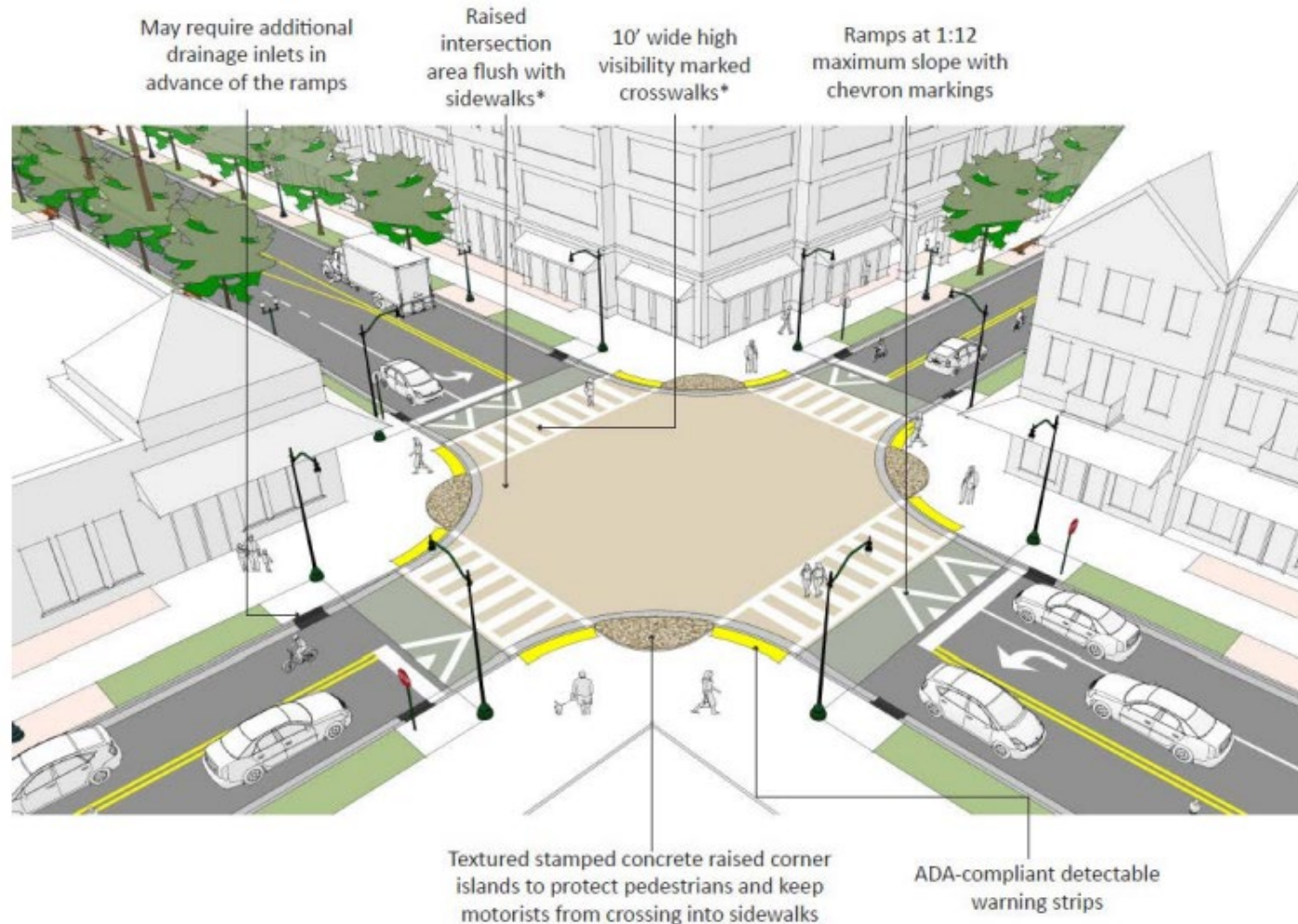
# Speed Management

**Table 202.3.1 Strategies to Achieve Desired Operating Speed**

Context Classification	Existing Speed Category (mph)	Minimum Design Speed (mph)	Target Speed (mph)	Strategies																			
				Roundabouts	On-Street Parking	Chicanes	Lane Narrowing	Horizontal Deflection	Street Trees	Short Blocks	Speed Tables	Raised Intersections	Raised Crosswalks (Type I Or Type II)	Speed Feedback Signs	Pedestrian Refuge Islands	Bulb-Outs	RRFBs	PHBs	Terminated Vistas	Islands in Curved Sections	Speed Pavement Markings		
C2T	Low	40	40, 45	X			X	X	X	X				X	X	X		X	X		X		
	Very Low	25	35	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	
			30	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	X
			25	X	X	X	X	X	X	X	X	X	X	I	X	X	X	X	X	X	X	X	X
C3R, C3C	Low	40	40, 45	X			X	X	X	X				X	X	X		X	X		X		
	Very Low	35	35	X	X	X	X	X	X	X	X			X	X	X	X	X	X		X		
C4	Low	40	40, 45	X			X	X	X	X				X	X	X		X	X		X		
	Very Low	25	35	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	
			30	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	X
			25	X	X	X	X	X	X	X	X	X	X	I	X	X	X	X	X	X	X	X	X
C5	Very Low	25	35	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	
			30	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	X
			25	X	X	X	X	X	X	X	X	X	X	I	X	X	X	X	X	X	X	X	X
C6	Very Low	25	30	X	X	X	X	X	X	X	X		II	X	X	X	X	X	X	X	X	X	
			25	X	X	X	X	X	X	X	X	X	X	I	X	X	X	X	X	X	X	X	X

# Example: Raised Intersection

Figure 202.3.4 Concept Sketch - Raised Intersection

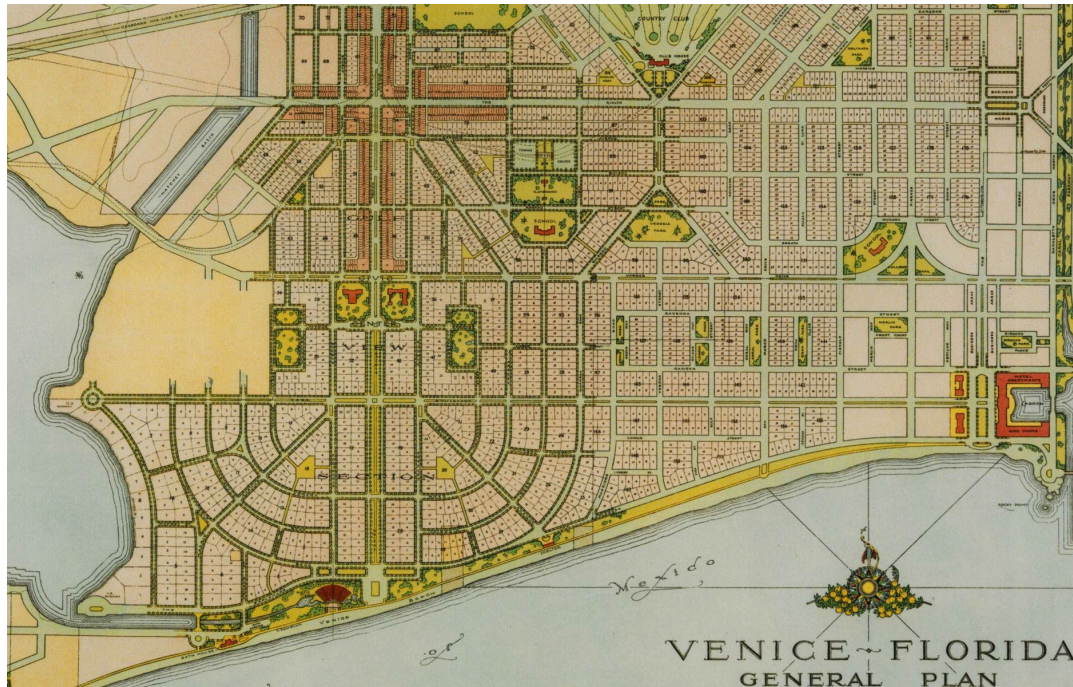


\*Note: Recommend raised intersection pavement and crosswalks be patterned and colored for increased visibility. Pattern and color should be coordinated with Department and local agencies.

# Where do we go from here??

---

“The solution of the traffic problem is to be sought not so much by wider streets as by proper plan of the town.”



John Nolen, 1926

# Where do we go from here??

---

- Integrate land use and transportation.
- Use flexibility in street design based on context.
- Understand unique safety challenges of each context
- Use speed management techniques for the High Injury Network.



Orange Blossom Trail, Orlando, FL

# Rulemaking Process and Sunshine Law

**Ashley Peacock**

Assistant General Counsel, Administrative Law Division

Florida Department of Transportation  
Office of the General Counsel

# Rulemaking

- Section 120.54, F.S.

## Four main phases:

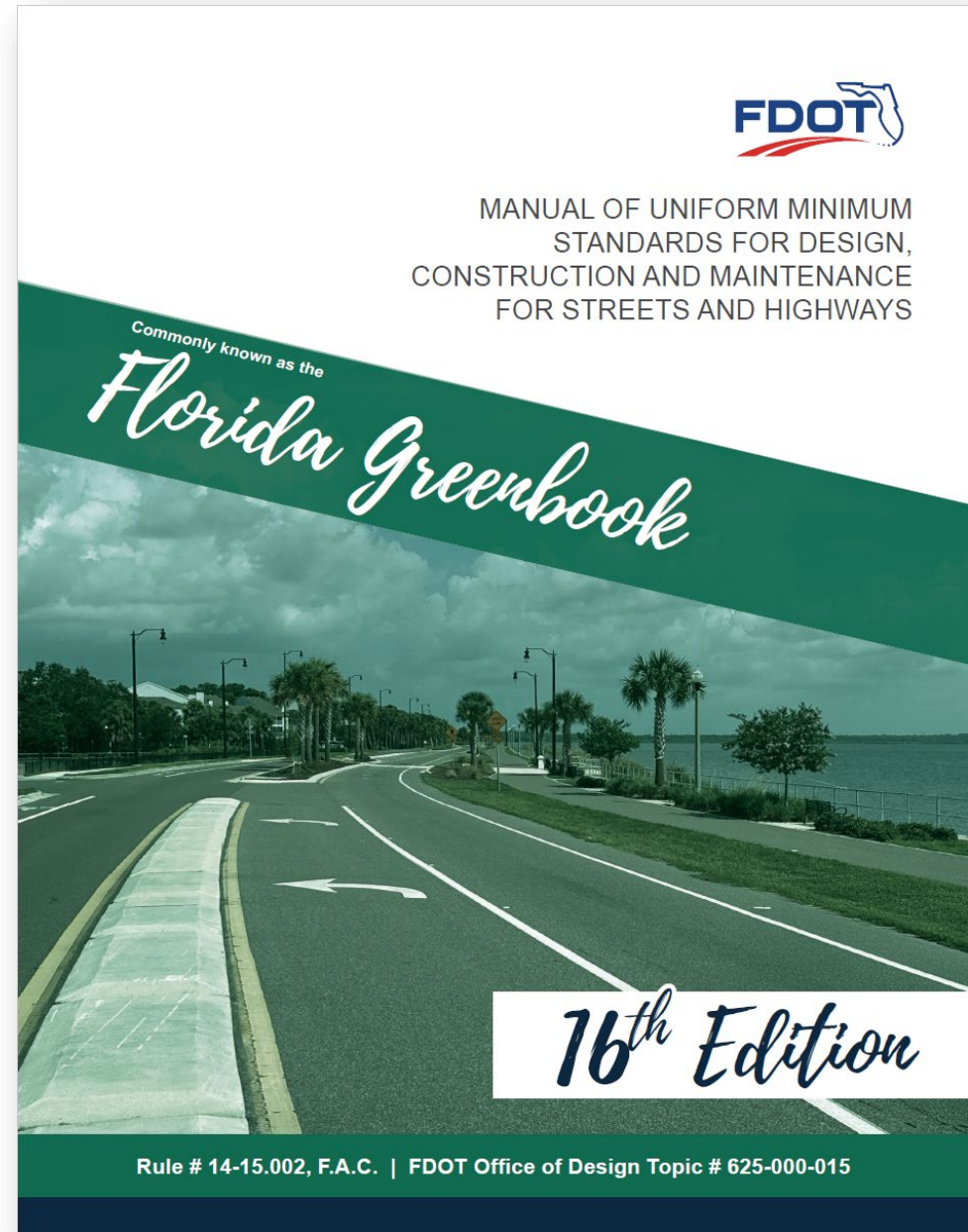
- Notice of Rule Development
- Notice of Proposed Rule
- Notice of Change *(if revisions are needed)*
- Adoption and filing with the Department of State

# Florida Greenbook

Rule 14-15.002 - Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways

## 16<sup>th</sup> Edition

Notice of Rule Development published April 1, 2026, in the Florida Administrative Register.



# FLORIDA'S GOVERNMENT- IN-THE SUNSHINE LAW

*See Handout*

## Article I, Section 245, Florida Constitution and Chapter 286 F.S.

### FLORIDA'S GOVERNMENT-IN-THE SUNSHINE LAW

#### 1. THE LAW

Florida's Sunshine Law is found in **Article I, Section 24, Florida Constitution** and **Chapter 286, Florida Statutes (F.S.)**, and applies to state agencies. The Sunshine Law is to be liberally construed; its exemptions are to be narrowly construed. Two or more people who are tasked with making a decision or recommendation constitute a "Board or Commission" under the Sunshine Law and are subject to its provisions. **Section 286.011(1), F.S.**, states:

All meetings of any board or commission of any state agency . . . at which official acts are to be taken are declared to be public meetings open to the public at all times, and no resolution, rule, or formal action shall be considered binding except as taken or made at such meeting.

Members may discuss such board or commission business matters only at a public meeting. The use of third persons or other means to evade the Sunshine Law is prohibited. The Sunshine Law does not generally apply to individual decision makers, fact finding, or general staff meetings.

#### 2. BASIC PUBLIC MEETING REQUIREMENTS

##### A. Open, Accessible, Non-Discriminatory, Technology.

- 1) Pursuant to **Section 286.26, F.S.**, public meetings must be open to the public, made accessible to individuals with physical handicaps and held at locations that are accessible to such persons.
- 2) Pursuant to **Section 286.011(6), F.S.**, public meetings are prohibited from being held at any location that discriminates on the basis of sex, race, age, creed, color, origin, or economic status, or operates in a manner as to unreasonably restrict public access.
- 3) Public meetings may include the use of teleconference, video, webinar, or other technology, but the public must be provided points of access. See **Rule Chapter 28-109, F.A.C.**, regarding conducting proceedings by communications media technology.

##### B. Reasonable Notice.

Pursuant to **Section 286.011(1), F.S.**, reasonable notice of public meetings must be provided. A minimum of 24 hours is considered reasonable notice. Pursuant to **Section 286.0105, F.S.**, notices of meetings must advise the public that a record of the meeting is required for an appeal of any decision made at the meeting, and that the person who wants to appeal a decision may need to ensure that a verbatim record of the meeting is made.

ed on the Department's website. Meetings subject to **Chapter**  
cedures Act, must also be published in the Florida Administrative  
divisible, but generally not required.

.S., minutes of public meetings must be taken, promptly recorded,  
The minutes may be posted or provided upon request.  
required, but persons attending are permitted to record or

ptions to public meetings requirements under **Section**

a security system plan would be revealed.

**87.057, F.S.**, in which there are negotiations with a vendor or  
ers of a vendor. As required by **Section 286.0113(2)(c)1., F.S.**, a  
ations or oral presentations must be made and no portion may be  
be exempt from the public records requirement of **Section**  
ice of decision or intended decision is provided or 30 days after the  
e opened.

#### LAW VIOLATIONS

nces for failure to comply with the Sunshine Law:

tion constitutes a noncriminal infraction and violators are subject  
exceed \$500. **Section 286.011(3)(a), F.S.**

violation, occurring either within or outside the state, is a second-  
a under **Section 775.082, F.S.**, or **section 775.083, F.S.**, which  
or a fine of \$500. **Sections 286.011(3)(b) and (c), F.S.**

to enforce the Sunshine Law or to invalidate actions taken in  
orney's fees will be assessed against the agency and may be  
bers of the board or commission, including attorney's fees on  
ion found to have done so in bad faith may also be assessed with  
**(4) and (5), F.S.**

# Questions



## Online Attendees *Meeting Logistics*

---



The chat feature can be used to ask questions to the presenters or share resources.



Be sure to mute your microphone unless you are asking a question.



You may turn on or off your video camera accordingly.



Raise your virtual hand to ask a live question.

# **Chapter 4: Roadside Design Updates**

**Robert J. Behar, PE**

R. J. Behar & Company, Inc.

# What We Heard

- Reorganize to reflect the next version of AASHTO Roadside Design Guide
- Consider context when appropriate
- Discuss the Safe System Approach as it relates to roadside safety
- Discuss FHWA's roadside safety countermeasure list
- Add a section for strategies to keep vehicles on the roadway
- Define, describe, and differentiate lateral offset, clear zone, and border width
- Low-speed considerations: clear zone and barrier applications

# Framing Changes

## Introduction

- Ties in roadside safety with the USDOT Safe System Approach and FDOT Target Zero
- Discusses FHWA's approach to roadway departure safety roadside safety, including their countermeasure list
- Includes a sub-section on context-based design
- Includes a sub-section on *How to Use This Chapter*

## Organization

- Reorganized to align with next version of AASHTO Roadside Design Guide

# Organizational Changes

Matching colors indicate equivalent chapters between the old and new table of contents. Yellow indicates a new chapter | Green indicates where chapters have shifted in location.

Old Outline	New Outline
Introduction	Introduction
Roadside Topography and Drainage Features	Keeping Vehicles on the Roadway
Roadside Safety Features and Crash Test Criteria	Provide for Safe Recovery
Barriers, Approach Treatments, and Crash Cushions	Design Requirements for Functional Roadside Infrastructure
Signs, Signals, Lighting Supports, Utility Poles, Trees and Similar Roadside Features	Longitudinal Barrier Evaluation, Selection, and Design
	Semi-Rigid (Metal Guardrail) Barriers
	Rigid (Concrete) Barriers
	Flexible (High-Tension Cable) Barriers
	Treating Barrier Ends
Bridge Rails	Bridge Traffic Railings
Roadside Design in Work Zones	Roadside Safety in Work Zones (Temporary Barriers)
References for Informational Purposes	References for Informational Purposes

# New Section: Keep Vehicles on the Roadway

- Highlights the first of three main components of FHWA's approach to Roadway Departure Safety
- Includes guidance on rumble strips, wider edge lines, pavement friction, horizontal curve safety, nighttime visibility, and in-vehicle systems that aim to mitigate and/or prevent road departure crashes (lane departure warning and lane keep assist)

## 4.2 Keep Vehicles on the Roadway

The first consideration for roadside safety design concerns preventing roadway departures before they occur. Described below are some of the design features that can reduce the likelihood of vehicles departing the roadway:

- **Rumble strips:** Raised and ground-in rumble strips provide auditory and haptic warnings to drivers who have encroached on the lane boundary. Rumble strips can be used on their own or in conjunction with striping.
  - [Standard Plans](#), Index 546-001: Raised Rumble Strips
  - [Standard Plans](#), Index 546-010: Ground-In Rumble Strips—Limited Access
  - [Standard Plans](#), Index 546-020: Ground-In Rumble Strips—Arterials and Collectors
    - This option is designed with a “sinusoidal” wave pattern that reduces noise outside the vehicle while still being felt and heard inside the vehicle. This helps reduce disturbances to nearby homes and businesses.

# Longitudinal Barrier Content and Organization

- Reorganized to have an introductory chapter, a chapter for each barrier type, and a chapter on shielding barrier ends
- The MASH test level conditions table was removed, and readers are referred to AASHTO's MASH for the up-to-date tables

## 4.6 Semi-Rigid (Metal Guardrail) Barriers

### Metal Guardrail Summary:

Metal guardrails use a combination of bending and tension to absorb impact energy. The systems are comprised of metal **rail** mounted to wood or metal **posts** with wood or composite **blockouts** and an **end treatment**.

**Metal rail** may be a w-beam rail (two-wave design; the most common design) or a thrie-beam rail (three-wave design). Thrie-beam rails provide some additional strength to the system and are generally used for approach transition connections to rigid barrier (see Section 4.9.6: Barrier Transition Connections (from Semi-Rigid to Rigid Barriers)).

**Offset blocks** are mounted between the rail and the posts, providing an offset between these two components.

**End treatments** for metal guardrails include approach terminals, trailing anchorages, and crash cushions. See Section 4.9: Treating Barrier Ends for details on end treatments.

**Posts** may be wooden or steel per [Standard Plans](#) Index 536-001.

### 4.6.1 FDOT Guardrail Systems

The most commonly used barrier on new construction projects in Florida is the TL-3 w-beam guardrail system, shown in FDOT [Standard Plans](#) Index 536.001. This semi-rigid, w-beam,

This is a working document that has not been adopted.

# Lateral Offset, Clear Zone, and Border Width

## 4.3.6 Minimum Lateral Offset

Due to right-of-way limitations, it is often necessary to place functional roadside components within the clear zone. Such roadside components include fixed objects that are integral to the safe and efficient operation of roadway operations, including but not limited to light poles, signal supports, and bridge piers.

These components are subject to the minimal lateral offset requirements per Table 4-3. The minimum lateral offset is the minimum distance that a hazardous feature shall be placed from the roadway. Minimum lateral offset requirements offer additional requirements and considerations which may supersede the clear zone concept. Like the clear zone, lateral offset is measured from the roadway's edge of traveled way or the face of curb, if present.

## 4.3.7 Border Width (Area)

Border width, also known as border area, “provides space for roadside design components (e.g., signing, drainage features, sidewalks, and traffic control devices), a buffer between vehicles and pedestrians, and permitted public utilities. It also provides space for construction and maintenance of the facility.” For more details on border area, see Chapter 3: Geometric Design.

- More explicit description and definition of all three measurements and how they relate to one another
- Sub-section added to define border width and reference the geometric design chapter (Chapter 3)

# Minimum Clear Zone Distance Table Changes

- Moved footnotes up into the table. This includes:
  - Guidance for roadways with 400 or less vehicles per day
  - An AADT-based exception for 40 mph travel lanes and multilane ramps
- Added guidance for roadways with speeds of 35 mph or less (see image to right)

**Table 4-1. Minimum Clear Zone Distance (ft) (20–35 mph)**

Design Speed (mph)	Design ADT	Front Slopes			Back Slopes		
		1V:6H or Flatter	1V:5H to 1V:4H	1V:3H	1V:3H	1V:5H to 1V:4H	1V:6H or Flatter
20	Under 750	2–6	3–7		2–6		3–7
	750–1,500	3–7	5–8		2–6		3–7
	1,500–6,000	5–8	6–10		3–7		5–8
	Over 6,000	7–10	7–10		5–8		7–10
25–30	Under 750	3–7	5–8	See "Note 1" below	2–6		3–7
	750–1,500	5–8	6–10		3–7		5–8
	1,500–6,000	7–10	7–10		5–8		7–10
	Over 6,000	7–10	10–12		7–10		7–10
35	Under 750	5–8	6–10		3–7		5–8
	750–1,500	7–10	7–12		5–8		7–10
	1,500–6,000	10–12	12–14		7–10		10–12
	Over 6,000	12–14	14–16		10–12		12–14

Note 1: Front slopes between 1V:4H and 1V:3H are traversable but non-recoverable. Since vehicles will not reduce speed or change direction on these slopes, the needed clear zone is determined by the slopes above and below the non-recoverable slope and extended by the width of the non-recoverable slope. See the [AASHTO RDG 4th Edition \(2011\)](#) for more information on this procedure. Front slopes steeper than 1V:3H are considered hazards.

Note 2: This guidance is sourced from the FHWA's 2005 [Barrier Guide for Low Volume and Low Speed Roads](#).

This is a working document that has not been adopted.

# Minimum Lateral Offset Table Changes

- Moved footnotes up into the table. This includes:
  - Definition of aboveground objects and drop-off hazards
  - Context classification guidelines
  - Preferred and exception values
  - Guidance for low-volume roads
  - Design variation guidance
- Added canal hazard guidance to the table, rather than referring to another section of the Greenbook.

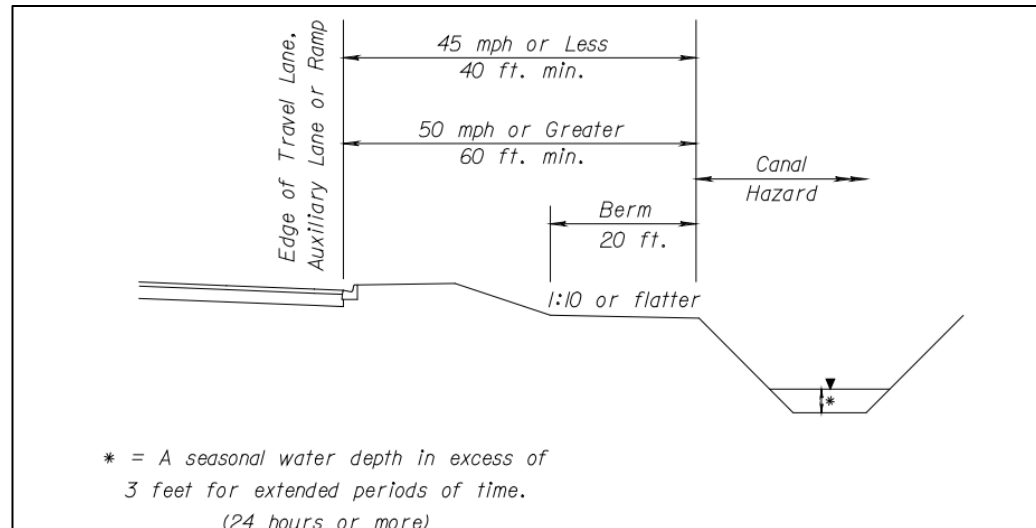
Table 4-3. Minimum Lateral Offset Distances (ft)

Roadside Feature	Minimum Lateral Offset (Distance from Face of Curb or Edge of Traveled Way, ft)			
	Urban Curbed Roadways			All Other
	Design Speed ≤ 25 mph Context Classification: Urban Center (C5) or Urban Core (C6)	Design Speed ≤ 45 mph		
	Low-Volume Roads (≤ 400 vpd)	All Roads		
<b>Aboveground Objects</b> <ul style="list-style-type: none"> <li>• See Section 4.4 for applicable roadside items.</li> <li>• For urban curbed areas ≤ 45 mph, this generally includes only crashworthy or breakaway objects except those necessary for the safe operation of the roadway, per Section 4.4.</li> <li>• Aboveground features include bridge piers, abutments, and other aboveground structures.</li> </ul> <p>Note: A design variation for failure to meet clear zone criteria is not required for existing, low-speed, curbed roadways if the</p>	1.5	<b>Preferred: 1.5</b>  <b>Exception: 6"</b> where corridor is constrained  See: AASHTO's Guidelines for Geometric Design of Very Low-Volume	<b>Preferred: 4</b>  <b>Exception: 1.5</b> where 4 cannot be reasonably obtained and other alternatives are	Clear zone width

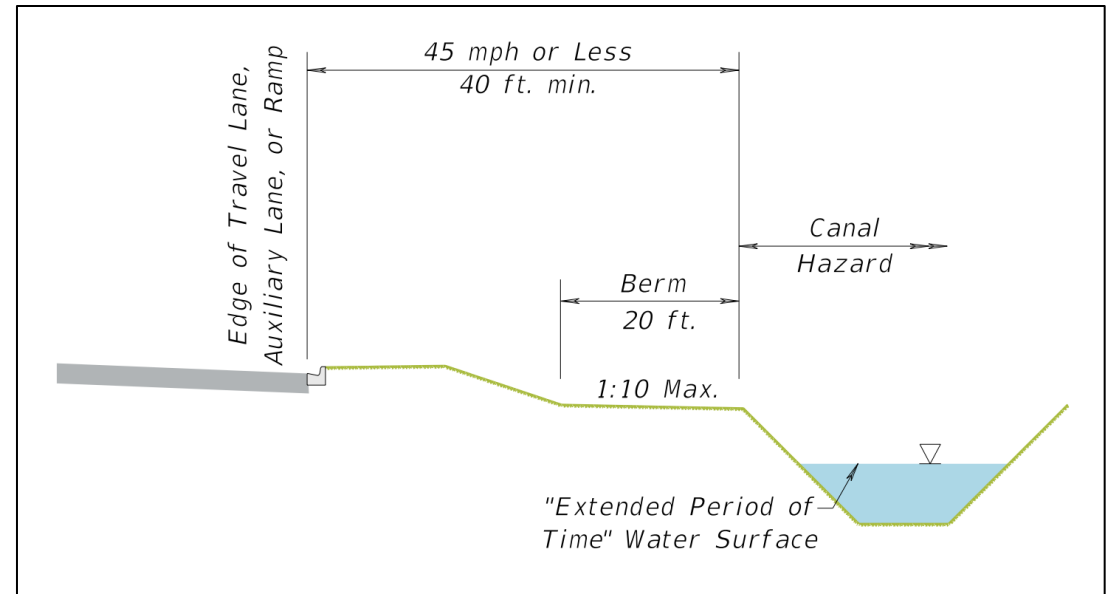
This is a working document that has not been adopted.

# Figure Style Updates

## Old Style



## New Style



This is a working document that has not been adopted.

# Next Steps

- Subcommittee reviewed the draft chapter
- Making final tweaks based on feedback to focus on actionable guidance
  - Removing references to NCHRP reports
  - Removing higher-level discussion and statistics
- Expect to have a draft final chapter in summer 2026

# Chapter 5: Pavement

**Kevin S. Ingle, P.E.**

District Design Engineer

FDOT District One

## 5 Pavement Design and Construction

### 5.1 Introduction

The function of the pavement or roadway surface is to provide a safe and efficient travel path for vehicles ~~and bicycles~~ using the street or highway. The pavement should provide a good riding surface with a minimum amount of distraction to the driver. The pavement friction characteristics should be such that adequate longitudinal and lateral forces between the vehicle tires and the pavement can be developed to allow a margin of safety for required vehicle maneuvers. These characteristics should be provided at the highest reasonable level for the expected pavement surface, weather conditions, and ~~the~~ anticipated operational characteristics of the facility. Resurfacing of the existing pavement is discussed ~~in and included under~~ Chapter 10 ~~—~~ Maintenance and Resurfacing ~~of this manual~~.

In order for the pavement to perform its function properly, the following objectives shall be ~~considered~~ evaluated in the design and construction of the pavement:

- Provide sufficient pavement structure and the proper pavement material strength to prevent pavement distress prior to the end of the design period.
- Develop and maintain adequate skid resistance qualities to allow for ~~the~~ safe execution of braking, cornering, accelerating, and other vehicle maneuvers.
- Provide drainage to promote quick drying and to reduce the likelihood of hydroplaning and splashing.

### 5.2 Pavement Design

#### 5.2.1 Pavement Type Selection

For new construction and major reconstruction projects, the designer should determine the type of pavement to be constructed utilizing formal analysis of existing and anticipated conditions. ~~High~~ volume roadways where a significant amount of truck traffic (>10%) exists may warrant consideration for special ~~asphalt~~ pavement designs and for rigid pavement designs. The Florida Department of Transportation (FDOT) has a documented procedure patterned after the American Association of State Highway and Transportation Officials (AASHTO's) ~~AASHTO Guide for Design of Pavement Structures, Appendix B~~ Guide for Design of Pavement Structures, Appendix B, 1993. This procedure may be found in the

- Minor grammatical edits throughout
- Defined acronyms at first reference (e.g., Florida Department of Transportation [FDOT]).

- Added language directing users to the FDOT 2022 Rigid Pavement Design Manual and 2025 Flexible Pavement Design Manual for pavement information.
- Added typical design period of 20 years
- Added language referencing ASTM standards for required material compaction.

~~FDOT's [Pavement Type Selection Manual \(2019\)](#)~~ [Pavement Type Selection Manual, 2019.](#)

[Pavement information, including structural values, can be found in the FDOT's 2022 Rigid Pavement Design Manual and the 2025 Flexible Pavement Design Manual.](#)

#### 5.2.1.1 Unpaved Roadway Material Selection

The material chosen should be locally available when possible. ~~Frequency of grading and replacement of material from loss due to erosion should be evaluated.~~ ~~A life-cycle economic analysis should be performed to determine suitable material type.~~ For example: ~~Reclaimed asphalt pavements (RAP) from milling operations provide for a suitable all-weather material~~ ~~which and~~ can be considered for unpaved roads.

The material chosen should exhibit low potential for losses due to wind, traffic, and water erosion. ~~EPA's Environmental Protection Agency (EPA) publication AP-42 contains methodology for estimating the dust generation potential for unpaved road surfaces.~~ Proper gradation of the chosen material is critical for its success. ~~Designers should consider flexible or rigid pavements where runoff from unpaved roads may impact surface waters.~~

Designers may consult with AASHTO's [Guidelines for Geometric Design of Very Low-Volume Local Roads \(ADT ≤ 400\), 2001](#) and ~~the Federal Highway Administration's (FHWA's) Gravel Road Construction and Maintenance Guide, August 2016~~ [FHWA's Gravel Roads Construction and Maintenance Guide, 2015](#) for further guidance regarding material selection.

#### 5.2.2 Structural Design

The pavement shall be designed and constructed so the required surface texture is maintained and its structure retains an adequate level of serviceability for the design period, ~~typically 20 years~~. The strength of the pavement materials shall be sufficient to maintain the desired roadway cross section without the formation of ruts or other depressions ~~that~~ ~~which~~ would impede drainage. ~~Subgrade strength and subgrade drainage are major factors to be considered-evaluated in pavement design.~~ Where high ground water conditions are present, adequate clearance to the bottom of the pavement base is necessary for good pavement performance and to achieve the required compaction and stability during construction operations. [Refer to the applicable American Society for Testing and Materials \(ASTM\) standards for required compaction of materials.](#)

- Updated language on skid resistance maintenance emphasizing cost minimization rather than elimination.
- Updated requirement for adequate drainage from “should” to “shall.”

are recommended as e-guides for both flexible and rigid pavement design.—Other design procedures are available including the [AASHTO Guide for Design of Pavement Structures](#), [AASHTO Guide for Design of Pavement Structures, 1993](#), as well as procedures ~~that~~ which have been developed by the Portland Cement Association, the American Concrete Pavement Association, and the Asphalt Institute.—The selection of the design procedure and the development of the design data must be managed by professional personnel competent to make these evaluations.

### 5.2.3 Skid Resistance

Pavements shall be designed and constructed to maintain adequate skid resistance for as long a period as the available materials, technology, and economic restraints will ~~permit~~ allow, thus ~~thereby eliminating~~ minimizing costs and hazardous maintenance operations.

The results of relevant experience and testing (i.e., tests conducted by the FDOT’s Materials Office) should be used in the selection of aggregate and other materials, the pavement mix design, the method of placement, and the techniques used for finishing the pavement surface. The design mixes should be monitored by continuous field testing during construction. Changes to the design mix or construction procedures must be made by qualified pavement designers and laboratory personnel ONLY.

The use of transverse grooving in concrete pavements frequently improves the wet weather skid resistance and decreases the likelihood of hydroplaning.—This technique should be ~~evaluated~~ considered for locations requiring frequent vehicle maneuvers (curves, intersections, etc.) or where heavy traffic volumes or high speeds will be encountered.—The depth, width, and spacing of the grooves should be such that control of the vehicle is not hindered.

### 5.2.4 Drainage

Adequate drainage of the roadway and shoulder surfaces ~~should~~ shall be provided.—Factors involved in the general pavement drainage pattern include pavement longitudinal and cross slopes, shoulder slopes and surface texture, curb placement, and the location and design of collection structures.—The selection of pavement cross slopes should receive particular attention to achieve the proper balance between drainage requirements and vehicle operating requirements.—The use of curbs or other drainage controls adjacent to the roadway surface should be avoided, particularly on high-speed facilities.—Specific requirements for cross slopes and curb placement are given in Chapter 3—~~Geometric Design~~.

- Updated language for unpaved roadway shoulder grading from “should” to “shall”.
- Updated inspection and evaluation from “should” to “shall”.

This is a working document  
that has not yet been adopted.

Florida Greenbook – 17th Edition

#### 5.2.4.1 Unpaved Roadway Drainage

Properly graded unpaved roadways require less maintenance and suffer less material loss. Designers should strive to provide adequate cross slope, shoulder, and swale profiles wherever possible. Typical cross slopes should be 2% with 1.5% as minimum. During maintenance grading, the operator ~~should~~ shall ensure that the final shoulder does not become higher than the travel lane edge to prevent ponding of water on the roadway.

Designers may consult with AASHTO’s publication **Guidelines for Geometric Design of Very Low-Volume Roads (ADT < 400), 2001** and ~~the FHWA’s **Gravel Roads Construction & Maintenance Guide, August 2015**~~ **Gravel Roads Construction & Maintenance Guide, 2015** for further guidance regarding proper cross slope profiles for unpaved roads.

Florida Greenbook – 17th Edition

This is a working document  
that has not yet been adopted.

### 5.3 Pavement Construction

A regular program of inspection and evaluation ~~should~~ shall be conducted to ensure the pavement criteria are satisfied during the construction process. ~~Any~~ regular inspection program should include the following:

- The use of standard test procedures, such as AASHTO and the ~~American Society for Testing and Materials (ASTM)~~.
- The use of qualified personnel to perform testing and inspection.
- The use of an independent assurance procedure to validate the program.

After construction, the pavement surface shall be inspected to determine whether the required surface texture was achieved and whether the surface has the specified slopes. ~~Spot~~

# Proposed Additional Edit

- Require FDOT Design Manuals for both flexible and rigid pavement.

## 5.2.2 Structural Design

The pavement shall be designed and constructed so the required surface texture is maintained and its structure retains an adequate level of serviceability for the design period, typically 20 years. The strength of the pavement materials shall be sufficient to maintain the desired roadway cross section without the formation of ruts or other depressions ~~that~~<sup>which</sup> would impede drainage. ~~Subgrade strength and subgrade drainage are major factors to be considered~~<sup>evaluated</sup> in pavement design. ~~Where high ground water conditions are present, adequate clearance to the bottom of the pavement base is necessary for good pavement performance and to achieve the required compaction and stability during construction operations.~~ Refer to the applicable American Society for Testing and Materials (ASTM) standards for required compaction of materials.

The FDOT's pavement design manuals, including the Flexible Pavement Design Manual, 2025 and ~~the Rigid Pavement Design Manual, 2024~~<sup>Rigid Pavement Design Manual, 2022</sup>,

Pavement Design and Construction | 5-2

Florida Greenbook – 17th Edition

This is a working document  
that has not yet been adopted.

are recommended as ~~e-guides~~<sup>e-guides</sup> for both flexible and rigid pavement design. ~~Other design procedures are available including the AASHTO Guide for Design of Pavement Structures~~<sup>AASHTO Guide for Design of Pavement Structures, 1993</sup>, as well as ~~and~~<sup>and</sup> procedures ~~that~~<sup>which</sup> have been developed by the Portland Cement Association, the American Concrete Pavement Association, and the Asphalt Institute. ~~The selection of the design procedure and the development of the design data must be managed by professional personnel competent to make these evaluations.~~

# Chapter 12: Construction

**Gene Howerton PE**

Florida Transportation Leader

Arcadis U.S., Inc.

## 12 Construction

### 12.1 Introduction

The purpose of this chapter is to establish guidelines for field procedures, as they pertain to control of construction projects, supervision, and contract administration. All construction projects require an inspection process ~~to administer the contract~~, to certify both that the project has been constructed within reasonable conformance with the plans/specifications, and that the materials which were incorporated into the project were properly tested/certified to administer the contract.

All construction projects require:

- An inspection procedure to administer the contract
- Certification

The engineer of record (EOR) is a Professional Engineer registered in the State of Florida who~~that~~ develops the criteria and concept for the project, performs the analysis, and is responsible for the preparation of the plans and specifications. The maintaining authority's EOR~~engineer of Record~~ may be in-house staff or a consultant.

The construction engineer (CE) is a professional engineer registered in the State of Florida who~~that~~ supervises the construction of the project. The maintaining authority's Construction Engineer CE (or D designee) may assign in-house staff or a consultant to act on their behalf.

- Minor grammatical edits throughout
- Defined acronyms at first reference (e.g., Engineer of Record [EOR]).

## 12.3 Control of the Work

### 12.3.1 Plans and Contract Documents

The cContractor will be furnished an appropriate number of copies of the plans and contract documents~~special provisions~~ as required for the particular project. The cContractor shall have available at the work site, at all times, one copy each of the plans and contract documents (including relevant dDesign sStandards), sSpecifications, and sSpecial pProvisions. Electronic plans may be submitted at the discretion of the maintaining agency.

#### 12.3.1.1 Plans

The plans furnished consist of general drawings showing such details that~~which~~ are necessary to give a comprehensive idea of the construction contemplated. Roadway plans will show, in general, alignment, profile grades, typical cross sections, and general cross sections, as necessary. Structure plans, in general, will show in detail all dimensions of the work contemplated.

- “Special provisions” was replaced with “contract documents.”
- Added option to submit plans electronically if allowed by the maintaining agency .

In the event the CE finds the materials, or the finished product in which the materials are used, or the work performed, are not in reasonably close conformity with the plans and specifications and have resulted in an inferior or unsatisfactory product, the work or materials shall be removed and replaced or otherwise corrected by and at the expense of the ~~c~~Contractor.

#### 12.3.4 Conformity of Work Shown in Regulatory Permits

All work shall be accomplished in accordance with special conditions of the regulatory permits applicable to the project.

#### 12.3.5 Authority of the ~~C~~onstruction Engineer

All work shall be performed to the satisfaction of the CE.

#### 12.3.6 Engineering and Layout

##### 12.3.6.1 Control Points Furnished

Horizontal and vertical control points are required at appropriate intervals along the line of the project to facilitate the proper layout of the work. The ~~c~~Contractor shall preserve all control points furnished.

##### 12.3.6.2 Layout of Work

Utilizing the control points furnished, all horizontal and vertical controls shall be established as necessary to construct the work in conformance with the plans and specifications. The work shall include performing all calculations required and setting all stakes needed, such as grade stakes, offset stakes, reference point stakes, slope stakes, and other reference marks or points necessary to provide lines and grades for construction of all roadway, bridge, and miscellaneous items.

##### 12.3.6.3 Personnel, Equipment, and Record Requirements

The ~~c~~Contractor shall employ only competent personnel and utilize only suitable equipment in performing layout work.

Adequate field notes and records including those required by permit agencies shall be kept as layout work is accomplished. These field notes and records shall be available for review by the CE as the work progresses, and copies shall be furnished to the CE at the time of completion of the project. Any inspection or checking of the ~~c~~Contractor's field notes or layout work by the CE, and the acceptance of all or any part thereof, shall not relieve the ~~c~~Contractor of their responsibility to achieve the lines, grades, and dimensions shown in the plans and

- Added language requiring all work to comply with permits applicable to the project.
- Clarified that field notes and records must include those required by permitting agencies.

specifications. Proper personal protective equipment shall be worn by all people present in the work zone at all times. -

### 12.3.7 Contractor's Supervision

#### 12.3.7.1 Prosecution of Work

The cContractor shall give the work the constant attention necessary to ~~assure~~ maintain the scheduled progress and shall cooperate fully with the CE and with other contractors at work in the vicinity.

#### 12.3.7.2 Contractor's Superintendent

The cContractor shall at all times have on the work site, as ~~their~~ his/her agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed. ~~This individual, and who~~ shall receive the instructions from the CE ~~or his/her authorized representatives.~~ The superintendent shall have full authority to execute the orders or directions of the CE and to supply promptly any materials, tools, equipment, labor, and incidentals ~~that~~ which may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

#### 12.3.7.3 Supervision for Emergencies

The cContractor shall have a responsible person available at or reasonably near the work site on a twenty-four-~~hour~~ basis, seven days a week, in order that ~~they~~ he/she may be contacted in emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problems that might arise. The cContractor shall be responsible for initiating, installing, and maintaining all traffic control devices as described in ~~Chapter 11~~ Work Zone Safety and Mobility and in the plans.

- Added language requiring the use of personal protective equipment in work zones.

- Added clarification that the contractor shall maintain work in accordance with the plans and contract documents.

#### 12.3.8.2 Failure of ~~Construction Engineer~~ **CE** to Reject Defective Work During Construction

If, during or prior to construction operations, the CE should fail to reject defective work or materials, whether from lack of discovery of such defect or for any reason, such initial failure to reject shall in no way prevent ~~their~~ his/her later rejection when such defect is discovered.

#### 12.3.8.3 Qualifications for Services for FDOT Administered Projects

For projects administered by a local government that are wholly or partially funded by the Florida Department of Transportation (-FDOT), there are limitations on who may perform design, as well as ~~and~~ Construction Engineering and Inspection services (CEI). See **F.S. 337.14 (7) Application for qualification; certificate of qualification; restrictions, request for hearing** for more information.

#### 12.3.9 Final Construction Inspection Maintenance until Final Acceptance

The ~~c~~Contractor shall maintain all work in ~~first-class~~ acceptable condition in accordance with both the plans and contract documents until it has been completed as a whole and has been accepted by the CE. When all materials have been furnished, all work ~~has been~~ performed, and the construction contemplated ~~by~~ per the contract ~~has been satisfactorily completed~~, the CE will make the final inspection.

# Proposed Additional Edit

- Restructure bullet points as a new paragraph to separate construction project requirements from EOR/CE responsibilities.

## 12.1 Introduction

The purpose of this chapter is to establish guidelines for field procedures, as they pertain to control of construction projects, supervision, and contract administration. All construction projects require an inspection process, ~~to administer the contract,~~ to certify both that the project has been constructed within reasonable conformance with the plans/specifications, and that the materials which were incorporated into the project were properly tested/certified, to administer the contract.

All construction projects require:

- An inspection procedure to administer the contract
- Certification

The ~~e~~Engineer of ~~r~~Record (EOR) is a ~~P~~rofessional ~~E~~ngineer registered in the State of Florida ~~who~~that develops the criteria and concept for the project, performs the analysis, and is responsible for the preparation of the ~~p~~Plans and ~~s~~Specifications. The ~~m~~Maintaining ~~a~~Authority's ~~EOR~~Engineer of Record may be in-house staff or a consultant.

The ~~c~~Construction ~~e~~Engineer (CE) is a ~~p~~rofessional ~~e~~Engineer registered in the State of Florida ~~who~~that supervises the construction of the project. The ~~m~~Maintaining ~~a~~Authority's ~~Construction Engineer~~CE (or D designee) may assign in-house staff or a consultant to act on their behalf.

# **Chapter 18: Signing and Pavement Marking**

**Gail L. Woods, PE**

Vice President/Senior Project Manager

GFT

## 18 Signing and Pavement Marking

### 18.1 Introduction

Signing and pavement markings ~~help improve highway safety by providing~~ provide guidance information to road users. - Both signs and pavement markings should provide sufficient visibility to meet the user's needs. -The design of signs and pavement markings should complement the basic highway design. Designers and engineers should also be aware of the different capabilities and needs of the driving population ~~seniors~~, and consider appropriate measures to better meet their needs and capabilities.

Sections 18.3 and 18.4 of this chapter ~~specifically discuss traffic control devices for both~~ signing and pavement markings that accommodate ~~not only~~ the needs of all types of road users, ~~but also the special needs of seniors.~~

### 18.2 Background

Section 316.0745, F.S., requires the FDOT to compile and publish a manual of uniform traffic control devices for use on the streets and highways of the state. - To comply with this statute, the Federal Highway Administration's (FHWA) **Manual on Uniform Traffic Control Devices (MUTCD)** has been adopted for use in **Rule 14-15.010, F.A.C.** ~~All~~ All references in this chapter are in conformance with the MUTCD.

The **Manual on Speed Zoning for Highways, Roads, and Streets in Florida (2019)** is adopted for use by the State of Florida under **Rule 14-15.012, F.A.C.** This manual is prepared by the FDOT in compliance with **Chapter 316, F.S.** to promote uniformity in the establishment of state, municipal, and county speed and school zones throughout the ~~the~~ state.

This is a working document that has not been adopted.

- Minor grammatical edits throughout.

- Overarching language was added directing users to the MUTCD for sign requirements.
- Removed specific criteria to defer to the MUTCD.

This is a working document that has not been adopted.

### 18.3 Signs

This section includes criteria for some, but not all, signs. Refer to the MUTCD for additional requirements for regulatory, warning, and informational signs.

#### 18.3.1 Advance Street Name Signs

The use of advance street name signs provides advance notification to road users ~~and~~ assists them in making safe roadway decisions. Signs should be used for signalized ~~and~~ ~~non-signalized~~ ~~unsignalized~~ intersections that are classified as a minor arterial or higher, or a cross street that provides access to a traffic generator or possesses other comparable physical or traffic characteristics deemed to be critical or significant.

##### 18.3.1.1 Standards

The words "Street," "Boulevard," "Avenue," etc., may be abbreviated, deleted, or reduced in size to conserve sign panel length. However, if confusion ~~would~~ ~~could~~ result due to similar street names in the area, **Table 18-1—Design Guidelines for Advance Street Name Signs**

Use of the local name is different name on each side beside each name to designate FEET may be added.

##### 18.3.1.2 Installation

Advance street name signs with the distances shown considered the minimum. the begin taper point for taper of traffic congestion and taper should also be considered.

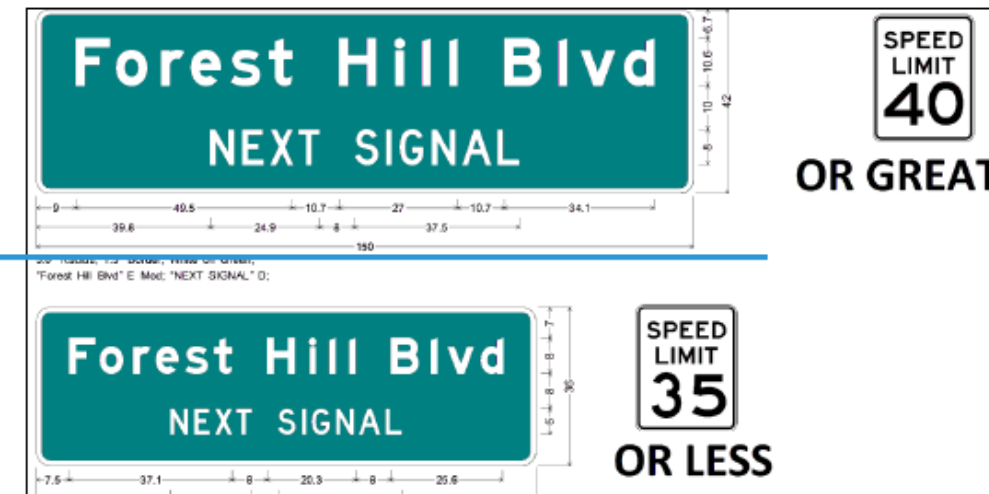
##### 18.3.1.3 Sign

Advance street name sign lettering for the signs shall upper-case letters.

Letter height should conform Street Name Signs—Variable 18-1 Examples of Advance

Posted Speed Limit	Street Name Legend Letter Size (inches) Series E Modified (EM) Upper/Lower Case Letters	Next Signal or Intersection Letter Size (inches) Series D (D) Upper Case Letters
35 mph or less	8-EM	6-D
40 mph or greater	10-6.7-EM	8-D

Figure 18-1—Examples of Advance Street Name Signs



- Language added directing users to MUTCD for overhead street sign sizes.

*Florida Greenbook – 17th Edition*

### ~~48.2.2~~**18.3.2 Advance Traffic Control Signs**

Advance ~~t~~**T**raffic ~~c~~**C**ontrol signs, i.e., Stop Ahead (W3-1), Yield Ahead (W3-2), and Signal Ahead (W3-3) signs, shall be installed on an approach to a primary traffic control device that is not visible for a sufficient distance to permit the driver to respond to the device. ~~—~~The visibility criteria for traffic signals shall be based on having a continuous view of at least two signal faces for the distances ~~s~~ specified in **MUTCD Table 4D-2 of the MUTCD**.

An ~~a~~**A**dvance ~~t~~**T**raffic ~~c~~**C**ontrol sign may be used for additional emphasis of the primary traffic control device, even when the visibility distance to the device is satisfactory.

### ~~48.2.3~~**18.3.3 Overhead Street Name Signs**

Overhead street name signs with mixed-case lettering should be used at major intersections (with multi-lane approaches) as a supplement to post-~~—~~mounted street name signs. Overhead street sign sizes and lettering shall conform with **MUTCD 11th Edition, Chapter 2D**.

This is a working document that has not been adopted.

- Overhead street name sign placement was streamlined.
- Clarified speed relates to posted speed.
- “Older drivers” were defined as individuals aged 65 and older.

The location of the overhead street name sign on a signal strain pole and/or mast arm may vary. However, it shall not interfere with the motorist’s view of the signal heads. The preferred location is shown in the FDOT’s **Standard Plans**. ~~In the case of separate street names on each side of the street, and where separate signs are used, one sign should be placed to the right of the signal heads and the other sign to the left of the signal heads.~~

#### ~~18.2.3.3~~ **18.3.3.3** Sign Design

On roadways with posted speeds of 40 mph or above, the sign panel should be at least 24 inches in height with the length determined by text. At a minimum, use 8-inch upper-case and 6-inch lower-case lettering for the street name. If block numbering text is included, use 6-inch all upper-case lettering on the second line. The preferred font is Series E-Modified; however, Series E may be used to accommodate the amount of legend so as not to exceed the 96-inch maximum length.

Where structurally possible, overhead street name signs should be designed in compliance with the FHWA’s recommendations for older drivers above the age of 65 using a minimum lettering size of 10-inch upper-case with 9-inch lower-case.

This is a working document that has not been adopted.

- Language added directing users to the MUTCD for pavement marking criteria.

#### ~~48-2-4~~18.3.4 Community Wayfinding Guidance

Community wayfinding guide signs should be developed and approved through local resolution, with criteria for the destinations shown on the community wayfinding guide sign system plan.—Any wayfinding guide sign should be used in accordance with **Rule 14-51.030, F.A.C.**—The intent is to provide guidance and navigation information to local cultural, historical, recreational, and tourist ~~activities~~ destinations. No destination should be displayed for the purpose of advertising. All sign designs shall conform with MUTCD.

#### ~~48-2-6~~18.3.5 DMS Overview

The main purpose of dynamic message signs (DMS) is to convey timely and important en-route and roadside information to motorists and travelers.—Further information on how DMS signs may be used can be found in the FDOT's policy on **Displaying Messages on Dynamic Message Signs Permanently Mounted on the State Highway System**.

#### ~~48-2-6~~18.3.6 Design Details for Signs

The **MUTCD** shall govern all sign details.—At a minimum, the "cConventional rRoad" size shall be used on signs intended for motor vehicle operators.

Shared use path sign sizing for traffic control shall follow the "Shared-Use Path" sizing and height shown in the **MUTCD**.—See **Chapter 9—Bicycle Facilities** for additional requirements on the signing of shared use paths.

#### ~~18-3~~18.4 Pavement Markings

This section includes criteria for some, but not all, pavement markings. Refer to the **MUTCD** for additional requirements.

#### ~~48-3-1~~18.4.1 Pavement Markings

Six8-inch pavement markings should be used for all pavement center line, lane separation line, and edge line markings. The **FDOT Design Manual, Chapter 230** provides additional information, including material options.

This is a working document that has not been adopted.

Break and  
Group Photo

Resume at 10:30

# Chapter 13: Public Transit

**Juvenal Santana, PE, CFM**

Director Department of Resilience and Public Works

City of Miami

## 13 Public Transit

### 13.1 Introduction

All modes of transportation (autos, trucks, transit vehicles, rails, aircraft, water craft, bicyclists, and pedestrians) shall be considered in all phases of a project. This includes when planning, designing, operating and constructing the surface transportation system. Where there is a demand for highways to serve vehicles, there could also be a demand for public transit or public transportation. Public transit should be considered in all phases of a project, including planning, preliminary design and engineering, design, construction, operations, and maintenance. Coordination with the appropriate public transit provider(s) will help determine any infrastructure ~~the~~ needs for transit-related infrastructure on a project-by-project basis. The integration of public transit street side facilities along with pedestrian and bicycle facilities furthers the implementation of this goal.

Planning and designing for public transit is ~~important because it is~~ an integral part of the overall surface transportation system. Public transit is defined as regular, continuing shared-ride passenger transportation service; local or regional in nature, which is open to the general public, available to any person. It operates on established schedules along designated routes or lines with specific stops and is designed to move relatively large numbers of people at one time. ~~Examples of P~~public transit includes bus, commuter light rail, street cars, vanpools, bus rapid transit, and paratransit.

~~With rising levels of congestion resulting in the use of new strategies to effectively and efficiently manage mobility, there is an increased demand for accessible and user-friendly public transit. New strategies include increased emphasis on public transit, and now emphasis on Transportation System Management (TSM), as well as Transportation Demand Management (TDM). TSM is the use of low-cost capital improvements to increase the efficiency of roadways and transit services such as retiming traffic signals or predestinating traffic flow. TDM focuses on people reducing the number of personal vehicle trips, especially during peak periods. TDM includes the promotion of alternatives to the single-occupant vehicle, including public transportation, carpooling, vanpooling, bicycling, walking, and telecommuting, as well as other methods for reducing peak hour travel.~~

~~Federal and State legislation provide the stimulus for planning, designing, and constructing a fully integrated transportation system benefiting the traveling public and the environment. Examples of legislation include Fixing America's Surface Transportation Act (FAST Act), Americans with Disabilities Act of 1990 (ADA), and Clean Air Act Amendment of 1990~~

- Streamlined introduction text.
- Expanded the definition of public transit and added additional examples.

- Removed the objective section and incorporated its content into a streamlined introduction.

This is a working document  
that has not been adopted.

Florida Greenbook – 17th Edition

~~(CAA). In response to this legislation, the surface transportation system should provide for concurrent use by automobiles, public transit and rail, bicycles, and pedestrians.~~

### ~~13.2 Objective~~

~~There are several methods to efficiently develop a coordinated surface transportation system. Coordination among agencies is necessary during the planning and design stages to:~~

- ~~• incorporate transit needs and during the construction phase for re-routing bus (and complementary pedestrian) movements, and~~
- ~~• for actual transit agency specific requirements (e.g., bus stop sign replacement, shelter installations, etc.).~~

~~For planning purposes, the state and local Transportation Improvement Program (TIP) should be referenced. Additionally, individual transit authorities have ten-year Transit Development Plans (TDPs) that are updated annually. The TDP can be used as a guide for planned transit needs along existing and new transportation corridors so transit consideration and transit enhancements can be incorporated where appropriate.~~

- Renamed “Transit Components” section to “Transit Facilities.”

### ~~13.3~~ **13.2 Transit Components** **Facilities**

#### ~~13.3.1~~ **13.2.1** **Boarding and Alighting (B&A) Areas**

Boarding and Alighting (B&A) areas help to create an accessible bus stop by providing a raised platform that is compatible with a bus that kneels or extends a ramp. A B&A area has a firm, stable and slip-resistant surface with a minimum clear length of 8.0 feet (measured perpendicular to the curb or roadway edge), and a minimum clear width of 5.0 feet (measured parallel to the roadway). Firm, stable, and slip resistant B&A areas are required if amenities such as benches or shelters are added to a bus stop. B&A areas are not required at bus stops on flush shoulder roadways where only a bus stop sign is provided. Coordinate with the appropriate public transit provider(s) to determine compatibility with equipment and transit vehicles.

The slope of the B&A area parallel to the roadway shall to the extent practicable, be the same as the roadway. For water drainage, a maximum slope of 2% perpendicular to the roadway is allowed. Benches and other site amenities shall not be placed on the B&A area. The B&A area can be located either within or outside the shelter, and shall be connected to streets, sidewalks, or pedestrian circulation paths by an accessible route.

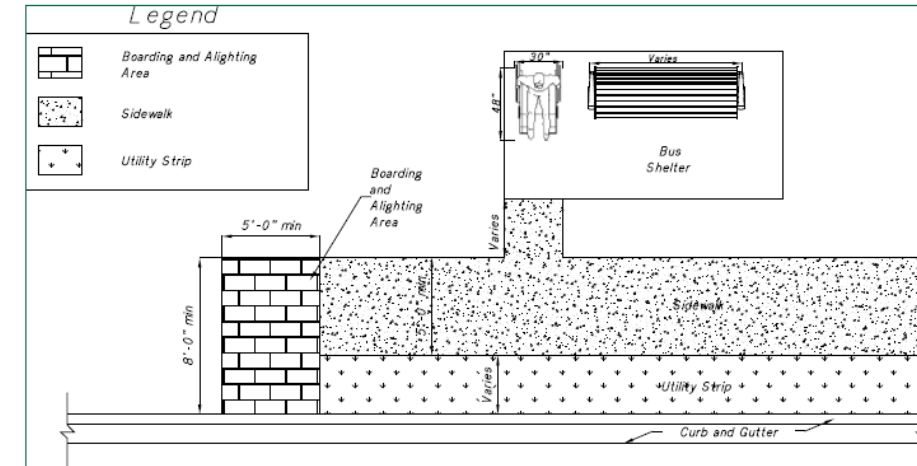
On flush shoulder roadways, a B&A area may be constructed at the shoulder point (or edge of shoulder pavement on roadways with a design speed of 45 mph or less) as shown in **Figures 13 – 1** and **13 – 2** Boarding and Alighting Area for Flush Shoulder Roadways. A Type “E” curb (5” curb height) should be used.

A sidewalk and/or ramp provided with the B&A area shall be a minimum of 5 feet in width, and the ramp shall not exceed a slope of 1:12. A detectable warning is required where a sidewalk associated with a B&A area connects to the roadway at grade. Except for the area adjacent to the 5” curb, the areas surrounding the B&A area shall be flush with the adjacent shoulder and side slopes and designed to be traversable by errant vehicles. On the upstream side of the platform, a maximum slope of 1:12 should be provided, and may be grass or a hardened surface. The B&A area (and ramp and level landing if needed) should be constructed with 6” thick concrete.

- Added reference to Chapter 4 Roadside Design for lateral offset of bus benches.

**Section 3.3.10.5 Bus Benches and Transit Shelters and Chapter 4 – Roadside Design, Table 4 – 4 Lateral Offset** of this Manual

**Figure 13-3 Bus Shelter Locations**



**13.3.3 13.2.3 Benches**

If a bench is provided, it should be on an accessible route, out of the path of travel on a sidewalk. Benches shall have an adjacent firm, stable and slip-resistant surface at least 30 inches wide and 48 inches deep to allow a user of a wheelchair to sit next to the bench, permitting the user shoulder-to-shoulder seating with a companion. Connection between the bench, sidewalk and/or bus B&A area shall be provided. Coordinate with the local public transit provider(s).

Bus benches should meet lateral offset criteria defined in Chapter 4 – Roadside Design in curbed sections. Bus benches should be outside the clear zone in flush shoulder sections. See Chapter 4 – Roadside Design, Table 4 – 4 Lateral Offset for further information. Transit facilities shall comply with Chapter 14-20, Florida Administrative Code.

**13.3.4 13.2.4 Stops and Station Areas**

Transit stops should be located so that there is a level and stable surface for boarding vehicles. Bus stop locations can be categorized as far side, near side and mid-block stops as shown in Figure 13 – 4. Locating transit stops at signalized intersections increases the usability for pedestrians with disabilities. Where transit stops are not located adjacent to a

- Consolidated Stop and Station Area criteria under one heading.
- Added sidewalk connection guidance.

~~43.3.4~~13.2.4

### Stops and Station Areas

Transit stops should be located so that there is a level and stable surface for boarding vehicles. Bus stop locations can be categorized as far side, near side and mid-block stops as shown in Figure 13 – 4. Locating transit stops at signalized intersections increases the usability for pedestrians with disabilities. Where transit stops are not located adjacent to a

Public Transit | 13–6

Florida Greenbook – 17th Edition

This is a working document  
that has not been adopted.

pedestrian crossing, a sidewalk connection should be provided to the nearest crossing opportunity.

Curb-side facilities are the most common, simple, and convenient form of facilities at a bus stop. These include bus stop signs, shelters, bus stop B&A areas, benches, bike racks, leaning rails, and shelter lighting. Guidance on stop and station treatments by context is provided in the Context Classification Framework for Bus Transit (2020) while Accessing Transit, Version IV (2023) offers additional details and standards for various facility types. “Accessing Transit” provides additional details and guidelines for each type of transit facility. Coordinate with the appropriate public transit provider(s) to determine the most suitable amenities and their placement. the appropriate type and placement of amenities.

~~13.3.5~~ **13.2.5**

**Bus Bays (Pullout or Turnout**

**Bays)**

Bus stops may be designed with a bus bay or pullout to allow buses to pick up and discharge passengers in an area outside of the travel lane. This design feature allows traffic to flow freely without the obstruction of stopped buses. ~~Bus bays for transit vehicles may be necessary (e.g., extended dwell time, layover needs, safety reasons, high volumes or speed of traffic.)~~ Bus bays can be designed for one or more buses. Coordinate with the local public transit provider(s) to determine the need and interest for bus bays.

When possible, bus bays should be located on the far side of a signalized intersection. The traffic signal will create the critical gap needed for bus re-entry into traffic. ~~There are several publications available which provide additional design information for transit system applications. The FDOT District Public Transportation Office(s) maintains a library of these publications.~~

See ~~Accessing Transit, Version 3/IV (20123)~~ and ~~Accessing Transit Update (2017)~~ for a more detailed discussion of the location of the bus stop or bay.

**13.2.6 Bus Stop Lighting**

Lighting design for bus stops should meet the same criteria for minimum illumination levels, uniformity ratios and max-to-min ratios that are being applied to the adjoining roadway based on **Chapter 6 – Lighting** of this Manual. If lighting is not provided for the adjoining roadway, coordinate with the transit agency to determine if lighting should be provided for the bus stop area, particularly when night transit services are provided. A decision to install lighting for the adjoining bus stop area may include illumination of the bus bay pavement area. ~~The use of solar panel lighting for bus stops is another option that should be considered.~~

- Consolidated Bus Bay criteria under one heading.
- Relocated Lighting section under Transit Facilities.

### 13.2.7 Park-and-Ride Lots

Park-and-ride facilities are designed to support commuters transferring between personal

vehicles and lighting, and loading area

Florida Greenbook – 17th Edition

This is a working document that has not been adopted.

Park-and-ride provides 9' x 13 – 3, for a designed in

Table 13-1 ADA Parking Space Requirements

Total Parking Spaces	Minimum Number of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	
76 to 100	
101 to 150	
151 to 200	
201 to 300	
301 to 400	
401 to 500	
501 to 1,000	
Over 1,000	

This is a working document that has not been adopted.

Florida Greenbook –

- Added new section on park-and-ride lots.
- Includes:
  - ADA Parking Requirements
  - Pavement Criteria
  - Lighting Criteria
  - Signage Criteria
  - Conceptual Examples

Effective pavement intended use to summarize recommendations on load requirements refer to Chapter 5

Table 13-2 Park

Facility Area
Bus lanes and loading stations
Internal Circulation Roads
Car parking and paths

Table 13-3 Park-and-Ride Lighting Criteria

Location	Standard	Objective
Parking areas	Illumination per IESNA RP-8*	Even coverage, pedestrian
Bus loading	Enhanced Illumination	Support passenger interaction visibility
Pedestrian Paths	Continuous Lighting	Meet ADA requirements

\* Illuminating Engineering Society of North America (IESNA) Recommended Practice for Roadway Lighting (RP-8)

Signing and pavement markings provide clear guidance for vehicles, bicycles, and pedestrians as they circular the park-and-ride. pavement markings for park-and-ride pedestrian wayfinding.

Florida Greenbook – 17th Edition

This is a working document that has not been adopted.

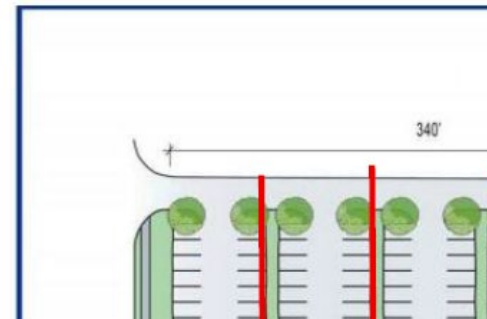
Table 13-4 Park-and-Ride Signage

Sign/Marking Type	Purpose
Guide	Directs vehicle and-ride
Regulatory	Controls parking
Pavement Markings	Defines
Bicycle	Directs routes

Figure 13-4 Conceptual Park-and-Ride Layout

[Recreate drawing below with smaller parking spaces]

FDOT – State Park-and-Ride Guide



- Added new section on mid-block crossings.
- For additional criteria, users are directed to the MUTCD, Accessing Transit, and Chapter 8 Pedestrian Facilities.

Florida Greenbook – 17th Edition

This is a working document  
that has not been adopted.

### 13.2.8 Mid-Block Crossings

Mid-block crossings can support access to transit when bus stop placement is outside of an intersection. Crossings should be placed downstream of bus stops to improve visibility for both pedestrians and drivers as shown in Figure 13 – 10. Placement should follow primary pedestrian paths and minimize walking distance to stops while considering ridership, roadway speed, and sight distance. Refer to the MUTCD and Accessing Transit, Version IV (2023) for guidelines on pedestrian markings, signage, and control devices. See Chapter 8 – Pedestrian Facilities for midblock crossing criteria.

### ~~13.4~~**13.3 Public Transit Facilities Lane Configurations**

~~When a project includes a public transit route, curb side and street side transit facilities for bus stops should be considered in the roadway design process. Transit facilities shall comply with [Chapter 14-20, Florida Administrative Code](#). The “Accessing Transit: Design Handbook for Florida Bus Passenger Facilities” provides guidance relating to provisions for curb side and street side facilities.~~

#### ~~13.4.1~~ **Curb Side Facilities**

~~Curb side facilities are the most common, simple, and convenient form of facilities at a bus stop. These include bus stop signs, shelters, bus stop B&A areas, benches, bike racks, leaning rails, and shelter lighting. “Accessing Transit” provides additional details and guidelines for each type of transit facility. Coordinate with the appropriate public transit provider(s) to determine the appropriate type and placement of amenities.~~

#### ~~13.4.2~~ **Street Side Facilities**

~~Bus stop locations can be categorized as far side, near side and mid block stops. Bus stops may be designed with a bus bay or pullout to allow buses to pick up and discharge passengers in an area outside of the travel lane. This design feature allows traffic to flow freely without the obstruction of stopped buses. Far side bus stops and bays are preferred. See [Accessing Transit, Version 3 \(2013\)](#) and [Accessing Transit Update \(2017\)](#) for a more detailed discussion of the location of the bus stop or bay.~~

- Integrated Public Transit Facilities section into previous section.
- Added new section on Lane Configurations.

**Figure 13-75 Exclusive Bus Lanes**

[Replace photo with schematic graphic in Greenbook style]



**13.3.1 Exclusive Bus Lanes**

Exclusive bus lanes are reserved travel lanes that may be configured as curbside or offset as shown in Figure 13 – 5.

Exclusive transit lanes shall have a minimum width of 11 feet, with 12 feet preferred. Exclusive transit lanes shall be separated from adjacent general-purpose lanes using solid single or double white stripes in accordance with *MUTCD*. If a physical separator is used, it shall be at least 6 inches wide, with 1 foot preferred. Shy distance should be a minimum of 1 foot for smooth bus operations.

Bus-only pavement markings reinforce exclusivity.

- Added exclusive bus lanes section, including minimum and preferred widths.

- Added criteria for shared bus and bike lanes, including minimum and preferred widths.

### 13.3.2 Shared Bus and Bike Lane

Shared Bus and Bike Lanes are designated curbside lanes that accommodate both bus and bicycle operations, typically used in constrained rights-of-way with high transit frequency.

These lanes shall have a minimum width of 11 feet, with 12 feet preferred as illustrated in **Figure 13 – 6**. Near bus stops, 15–16 feet is preferred to allow bicycles to pass a stopped bus.

Shared lanes shall be separated from adjacent general-purpose lanes with a solid 6-inch white line in accordance with the **MUTCD**. If a physical separator is used, it shall be at least 6 inches wide, with 1 foot preferred. Shy distance should be at least 1 foot, as buses do not operate with their tires directly against a curb or separator.

Refer to the **MUTCD** for in-lane markings and signage requirements for preferential lanes.

This is a working document that has not been adopted.

- Added criteria for center-running bus lanes, including one-way and two-way configurations.
- Criteria includes lane width, curb separation, platform width, and shy distance.

### 13.3.3 Center Running Bus Lanes

A center running bus lane is a dedicated lane that can be configured for one-way or two-way bus operations as shown in Table 13 – 1. In a one-way configuration, buses operate directionally along the roadway median, separated from general traffic lanes by a curb or barrier that may be mountable to allow emergency or maintenance access. Station platforms are positioned adjacent to the bus lane to accommodate passenger boarding.

In a two-way configuration, the busway supports bi-directional operations with both lanes serving median stops/shelters. The facility is separated from general traffic by a curb or barrier, while the two directions of bus travel typically share a center platform to serve passengers in both directions as illustrated in Figure 13 – 7.

**Table 13-5 Design Standards for Center Running Busways**

Lane Type	Lane Width	Curb Separator	Station Platform	Shy Distance
One-way	11-12'	2'	10-12'	1' - 4'
Two-way	22-24'	2'	12-14'	1' - 4'

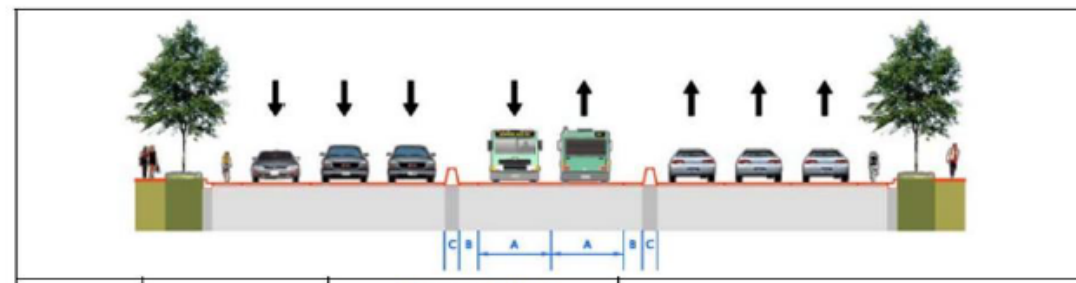
Florida Greenbook – 17th Edition

This is a working document that has not been adopted.

**Figure 13-9 Two-Way Median Busway Example**

[Recreate to illustrate table dimensions]

**FIGURE 8**  
Two-Way Median Busway, Typical Cross-Section



# Proposed Additional Edit

- Expand public transit examples to include BRT and public ferries.

## 13 Public Transit

### 13.1 Introduction

All modes of transportation (autos, trucks, transit vehicles, rails, aircraft, water craft, bicyclists, and pedestrians) shall be considered in all phases of a project. This includes ~~when planning, designing, operating and constructing the surface transportation system. Where there is a demand for highways to serve vehicles, there could also be a demand for public transit or public transportation. Public transit should be considered in all phases of a project, including~~ planning, preliminary design and engineering, design, construction, operations, and maintenance. Coordination with the appropriate public transit provider(s) will help determine any infrastructure ~~the needs for transit related infrastructure~~ on a project-by-project basis. The integration of public transit street side facilities along with pedestrian and bicycle facilities furthers the implementation of this goal.

Planning and designing for public transit is ~~important because it is~~ an integral part of the overall surface transportation system. Public transit is defined as regular, continuing shared-ride passenger transportation service, local or regional in nature, which is open to the general public. ~~available to any person. It operates on established schedules along designated routes or lines with specific stops and is designed to move relatively large numbers of people at one time.~~ Examples of Public transit includes bus, commuter ~~light~~ rail, street cars, vanpools, bus rapid transit, and paratransit.

This is a working document that has not been adopted.

# Proposed Additional Edit

- Clarify that B&A areas are not required on flush shoulder roadways when paratransit or on-demand services are available.

## ~~13.3~~ **13.2 Transit Components** Facilities

### ~~13.3.1~~ **13.2.1** Boarding and Alighting (B&A) Areas

Boarding and Alighting (B&A) areas help to create an accessible bus stop by providing a raised platform that is compatible with a bus that kneels or extends a ramp. A B&A area has a firm, stable and slip-resistant surface with a minimum clear length of 8.0 feet (measured perpendicular to the curb or roadway edge), and a minimum clear width of 5.0 feet (measured parallel to the roadway). Firm, stable, and slip resistant B&A areas are required if amenities

such as benches or shelters are added to a bus stop. B&A areas are not required at bus stops on flush shoulder roadways where only a bus stop sign is provided. Coordinate with the appropriate public transit provider(s) to determine compatibility with equipment and transit vehicles.

This is a working document that has not been adopted.

# Proposed Additional Edit

- Update language to require both transit facilities and amenities to comply with Chapter 14-20, Florida Administrative Code.

~~13.3.3~~13.2.3

## Benches

If a bench is provided, it should be on an accessible route, out of the path of travel on a sidewalk. Benches shall have an adjacent firm, stable and slip-resistant surface at least 30 inches wide and 48 inches deep to allow a user of a wheelchair to sit next to the bench, permitting the user shoulder-to-shoulder seating with a companion. Connection between the bench, sidewalk and/or bus B&A area shall be provided. Coordinate with the local public transit provider(s).

Bus benches should meet lateral offset criteria defined in **Chapter 4 – Roadside Design** in curbed sections. Bus benches should be outside the clear zone in flush shoulder sections. See **Chapter 4 – Roadside Design, Table 4 – 4 Lateral Offset** for further information. Transit facilities shall comply with **Chapter 14-20, Florida Administrative Code**.

This is a working document that has not been adopted.

# Proposed Additional Edit

- Revise wording to clarify circulation and operation within park-and-ride lots.

Signage and pavement markings provide clear guidance for vehicles, bicycles, and pedestrians as they circulate the park-and-ride. Table 13 – 6 summarizes recommended signage and pavement markings for park-and-ride facilities, including guidance for vehicle, bicycle, and pedestrian wayfinding.

**Table 13-6 Park-and-Ride Signage Criteria**

<u>Sign/Marking Type</u>	<u>Purpose</u>	<u>Example</u>
<u>Guide</u>	<u>Directs vehicles to parking, kiss-and-ride lot, bike storage, etc.</u>	<u>Facility name at entrance</u>
<u>Regulatory</u>	<u>Controls unauthorized use, parking restrictions</u>	<u>ADA, tow-away zones, and no overnight parking</u>
<u>Pavement Markings</u>	<u>Defines traffic flow and parking</u>	<u>Stop bars, arrows, and crosswalks</u>
<u>Bicycle</u>	<u>Directs bicyclists to storage and routes</u>	<u>Sharrows or bike lanes when appropriate</u>

This is a working document that has not been adopted.

# Proposed Additional Edit

- Clarify the preferred shared bus-bike lane width (15–16 ft) applies when adjacent to bus stops.

## 13.3.2 Shared Bus and Bike Lane

Shared Bus and Bike Lanes are designated curbside lanes that accommodate both bus and bicycle operations, typically used in constrained rights-of-way with high transit frequency.

These lanes shall have a minimum width of 11 feet, with 12 feet preferred as illustrated in **Figure 13 – 6**. Near bus stops, 15–16 feet is preferred to allow bicycles to pass a stopped bus.

Shared lanes shall be separated from adjacent general-purpose lanes with a solid 6-inch white line in accordance with the **MUTCD**. If a physical separator is used, it shall be at least 6 inches wide, with 1 foot preferred. Shy distance should be at least 1 foot, as buses do not operate with their tires directly against a curb or separator.

Refer to the **MUTCD** for in-lane markings and signage requirements for preferential lanes.

This is a working document that has not been adopted.

# Currently Exploring...

- Criteria for bus boarding islands and interactions with bicycle facilities
- Additional criteria for bus bays
- Minimum transit lane widths, including when adjacent to buffer area
- Exemptions for physical separator on low-speed center running bus lanes

# Chapter 15: Traffic Calming

**Juvenal Santana, PE, CFM**

Director Department of Resilience and Public Works

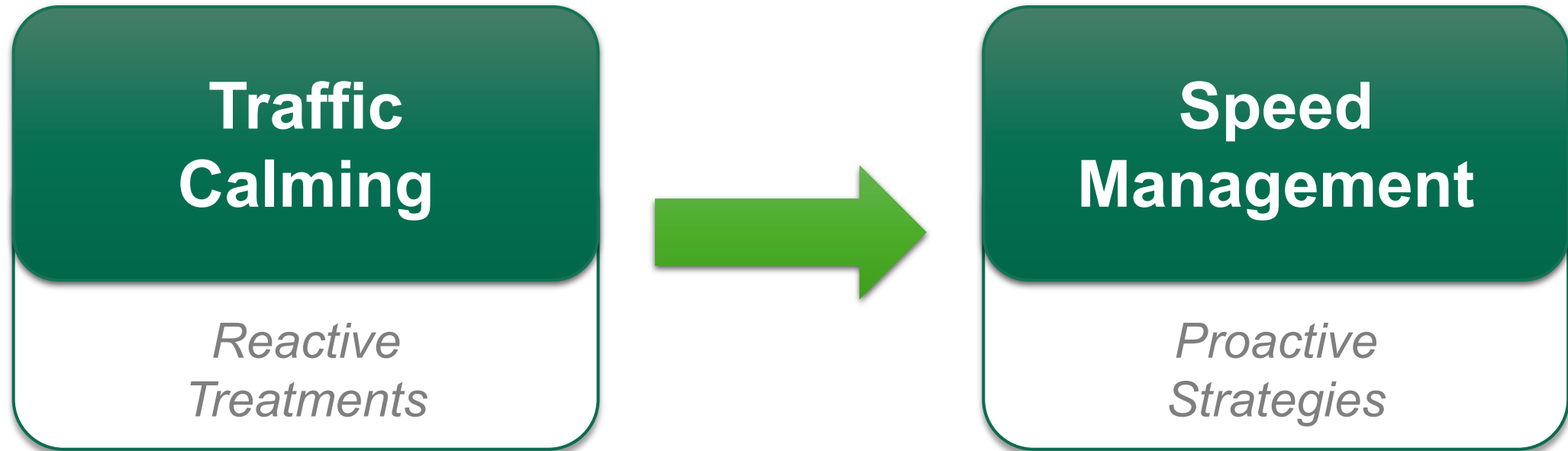
City of Miami

# Overview of Proposed Changes

- Naming Convention
- Introductory Elements
- Proposed Content
- List of Strategies



# Name Change



# Key Chapter Elements

- Discussion on speed transition zones
- Criteria for variety of speed management strategies
- References to:
  - **Chapter 3** for selecting design speed and geometric design elements
  - Companion document (**Roadway Design Guide**) for selecting target speed, building a speed management program, and public engagement guidance

# Speed Management Strategies

## Each Strategy to Include:

1. Description of Strategy
2. Image or Illustration
3. Design Criteria & Dimensions
4. Ideal Scenario for Application
5. Scenarios to Avoid

## Horizontal Deflection

- Chicanes
- Lateral Shifts
- Chokers/ Pinch Points
- Modern Roundabouts
- Curb Extensions
- Neighborhood Traffic Circles
- Diverter
- Realigned Intersections
- Islands

## Vertical Deflection

- Raised Crosswalks
- Speed Cushions
- Raised Intersections
- Speed Tables
- Speed Humps

## Traffic Control Devices

- Rectangular Rapid Flashing Beacon (RRFB)
- Speed Feedback Signs
- Pedestrian Hybrid Beacon (PHB)

## Space Reallocation

- Lane Narrowing
- On-street Parking
- Lane Repurposing
- Two-way Yield Streets

## Signing & Marking

- Posted Speed Pavement Markings
- Speed Reduction Markings (MUTCD 3B.28)

## Enclosure

- Street Trees & Other Landscaping
- Terminated Vistas

# Additional Topics

## Other Supportive Speed Management Techniques

### *Non-Infrastructure Strategies:*

- *Community/Neighborhood Gateways*
- *Enforcement*
- *Engagement*
- *Signal Timing*
- *Supportive Land Use*

## Speed Management on High-Speed Facilities

*Speed Management Strategies appropriate for  $\geq 50$  MPH*

## Elements That Cannot Be Used for Speed Management

- *Novelty Signs*
- *Odd Speed Limits*
- *Speed Bumps*
- *Stop Signs*

# Breakout Groups (1 hour)

1. Pedestrian Facilities
2. Public Transit
3. Speed Management

45-minute discussion / 15-minute report out

*Lunch*

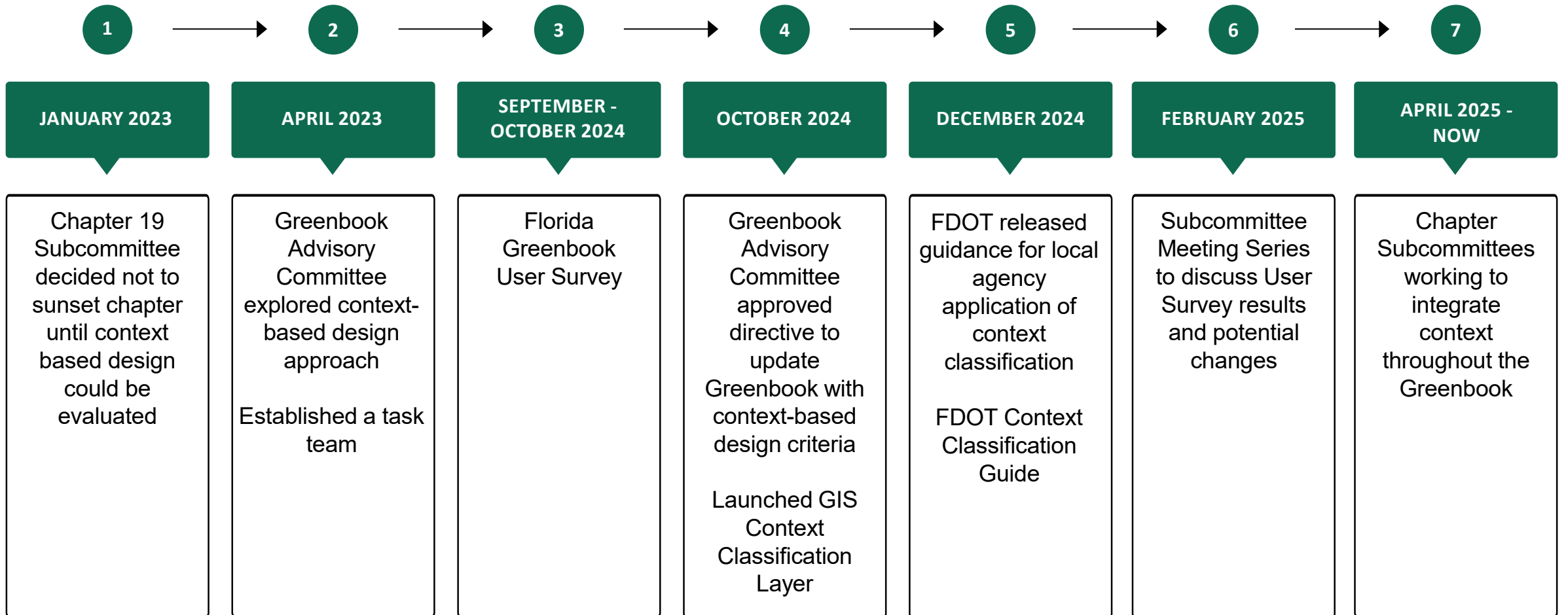
*Resume at 1:00*

# Chapter 3: Geometric Design

**Nikesh Patel, PE, CPM, PTOE, CGC, AICP**

Director of Public Works  
City of Sarasota

# Recent Subcommittee Activities



# Visioning

The Florida Department of Transportation (FDOT) is consistently at the forefront of transportation planning and infrastructure development in the state. The FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (the Florida Greenbook) serves as a vital resource for local governments, transportation engineers, and planners, providing guidelines and standards for roadway design and construction. With the evolving landscape of Florida's communities, it is becoming increasingly important to ensure that these guidelines are sensitive to the specific needs and characteristics of our urban, suburban, and rural areas.

# Committee Direction

To revise and restructure the Florida Greenbook to incorporate context-sensitive design criteria and classification divisions based on urban, suburban, and rural contexts.

## Objectives

- Ensure the Florida Greenbook addresses the unique needs and characteristics of Florida's urban, suburban, and rural areas through context-sensitive guidelines.
- Develop clear and actionable criteria for classifying areas based on context to inform design standards.
- Improve the usability of the Florida Greenbook by providing more specific guidance tailored to the context of the area being developed.

# Integrating Chapters 16 and 19

## History

- Chapter 16 added in 2002 to foster a safe environment for the residents that live along residential street, and safe traveling conditions for motorists and pedestrians
- Chapter 19 added in 2011 to incorporate traditional neighborhood development (TND) standards already being used by many cities

# Integrating Context

## Overview

- All functional and context classifications considered



C1 C2 C2T C3R C3C C4 C5 C6

- Separate criteria for each when needed, combined when helpful

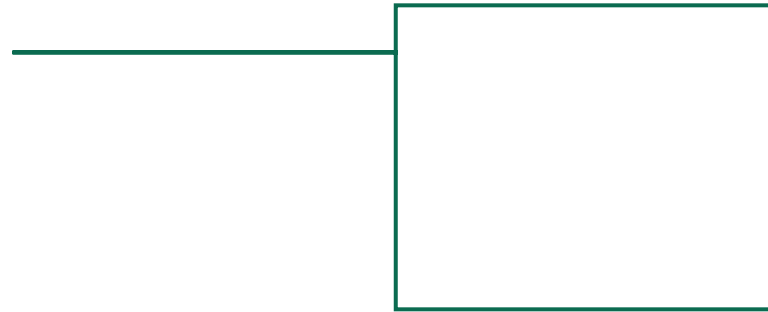
# Integrating Context

## Context-Based Guidance and Criteria

- Design Speed
- Design Vehicle
- Lane Widths
- Median Widths
- Border Widths
- Pedestrian Facilities
- Bicycle Facilities
- Parking

## Other Criteria

- Sight Distance
- Horizontal Alignment
- Vertical Alignment



# Proposed Table of Contents

## Existing

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Elements
  - 3.3.1 Design Speed
  - 3.3.2 Design Vehicles
  - 3.3.3 Sight Distance
  - 3.3.4 Horizontal Alignment
  - 3.3.5 Vertical Alignment
  - 3.3.6 Alignment Coordination
  - 3.3.7 Cross Section Elements
  - 3.3.8 Access Control
  - 3.3.9 Intersection Design
  - 3.3.10 Other Design Factors
  - 3.3.11 Reconstruction
  - 3.3.12 Design Exceptions
  - 3.3.13 Very Low-Volume Local Roads ( $\leq 400$ )

## Proposed

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Speed
- 3.4 Design and Control Vehicle
- 3.5 Sight Distance
- 3.6 Horizontal Alignment
- 3.7 Vertical Alignment
- 3.8 Alignment Coordination
- 3.9 Cross Section Elements
- 3.10 Access Control
- 3.11 Driveways
- 3.12 Intersection Design
- 3.13. Other Design Factors

# Proposed Table of Contents

## Existing

3.1 Introduction

3.2 Objectives

~~3.3 Design Elements~~

3.3.1 Design Speed

3.3.2 Design Vehicles

3.3.3 Sight Distance

3.3.4 Horizontal Alignment

3.3.5 Vertical Alignment

3.3.6 Alignment Coordination

3.3.7 Cross Section Elements

3.3.8 Access Control

3.3.9 Intersection Design

3.3.10 Other Design Factors

3.3.11 Reconstruction

3.3.12 Design Exceptions

3.3.13 Very Low-Volume Local Roads ( $\leq 400$ )

## Proposed

3.1 Introduction

3.2 Objectives

3.3 Design Speed

3.4 Design and Control Vehicle

3.5 Sight Distance

3.6 Horizontal Alignment

3.7 Vertical Alignment

3.8 Alignment Coordination

3.9 Cross Section Elements

3.10 Access Control

3.11 Intersection Design

3.12 Other Design Factors

3.13 Reconstruction

3.14 Design Exceptions

3.15 Very Low-Volume Local Roads ( $\leq 400$ )

**Collapsed heading level for usability**

# Proposed Table of Contents

## Existing

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Elements
  - 3.3.1 Design Speed
  - 3.3.2 Design Vehicles
  - 3.3.3 Sight Distance
  - 3.3.4 Horizontal Alignment
  - 3.3.5 Vertical Alignment
  - 3.3.6 Alignment Coordination
  - 3.3.7 Cross Section Elements
  - 3.3.8 Access Control
  - 3.3.9 Intersection Design
  - 3.3.10 Other Design Factors
  - 3.3.11 Reconstruction
  - 3.3.12 Design Exceptions
  - 3.3.13 Very Low-Volume Local Roads ( $\leq 400$ )

## Proposed

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Speed
- 3.4 Design and Control Vehicle
- 3.5 Sight Distance
- 3.6 Horizontal Alignment
- 3.7 Vertical Alignment
- 3.8 Alignment Coordination
- 3.9 Cross Section Elements
- 3.10 Access Control
- 3.11 Driveways
- 3.12 Intersection Design

Criteria moved to respective chapters

Incorporated in Other Design Factors

Incorporated in Cross Section Elements

# Proposed Table of Contents

## Existing

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design
  - 3.3.1 Design Speed
  - 3.3.2 Design Vehicles
  - 3.3.3 Sight Distance
  - 3.3.4 Horizontal Alignment
  - 3.3.5 Vertical Alignment
  - 3.3.6 Alignment Coordination
  - 3.3.7 Cross Section Elements
  - 3.3.8 Access Control
  - 3.3.9 Intersection Design
  - 3.3.10 Other Design Factors
  - 3.3.11 Reconstruction
  - 3.3.12 Design Exceptions
  - 3.3.13 Very Low-Volume Local Roads ( $\leq 400$ )

Added control vehicle guidance



## Proposed

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Speed
- 3.4 Design **and Control Vehicle**
- 3.5 Sight Distance
- 3.6 Horizontal Alignment
- 3.7 Vertical Alignment
- 3.8 Alignment Coordination
- 3.9 Cross Section Elements
- 3.10 Access Control
- 3.11 Driveways
- 3.12 Intersection Design
- 3.13. Other Design Factors

# Proposed Table of Contents

## Existing

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Elements
  - 3.3.1 Design Speed
  - 3.3.2 Design Vehicles
  - 3.3.3 Sight Distance
  - 3.3.4 Horizontal Alignment
  - 3.3.5 Vertical Alignment
  - 3.3.6 Alignment Coordination
  - 3.3.7 **Separated driveways from intersections**
  - 3.3.8 Access Control
  - 3.3.9 Intersection Design
  - 3.3.10 Other Design Factors
  - 3.3.11 Reconstruction
  - 3.3.12 Design Exceptions
  - 3.3.13 Very Low-Volume Local Roads ( $\leq 400$ )

## Proposed

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Design Speed
- 3.4 Design and Control Vehicle
- 3.5 Sight Distance
- 3.6 Horizontal Alignment
- 3.7 Vertical Alignment
- 3.8 Alignment Coordination
- 3.9 Cross Section Elements
- 3.10 Access Control
- 3.11 Driveways**
- 3.12 Intersection Design
- 3.13. Other Design Factors

# Design Speed Ranges

**Table 2 Design Speed Ranges by Context Classification for Non-Freeways**

Replace the rest of Table 3-1 with a new table for non-freeway design speed based on context classification, incorporating speeds in Chapter 16: Residential Street Design and Chapter 19: Traditional Neighborhood Development.

Context Classification	Local (MPH)	Collector (MPH)	Arterial (MPH)
Natural (C1) / Rural (C2)	Paved: 20 – 50 Unpaved: 20 – 35	30 – 55	To be discussed in subcommittee meeting
Rural Town (C2T)	20 – 25	25 – 30	
Suburban Residential (C3R)	20 – 25	25 – 35	
Suburban Commercial (C3C)	20 – 25	25 – 35	
General Urban (C4)	20 – 25	25 – 30	
Urban Center (C5)	20	20 – 25	
Urban Core (C6)	20	20 – 25	

Table Notes:

1. For state roadways, refer to the FDOT Design Manual for design speed ranges.
2. Alleys and other narrow roadways intended to function as shared spaces can be designed for speeds as low as 10 mph

This is a working document that has not been adopted.

# Lower Design Speeds Incorporated Throughout

Table 6 Minimum Stopping Distance

Previously Table 3-4

Design Speed (MPH)	Stopping Sight Distance (feet)						
	Level (≤2%)	Downgrades			Upgrades		
		2%	6%	8%	2%	6%	8%
10	47	48	49	50	46	45	45
15	80	80	82	85	75	74	73
20	115	116	120	126	109	107	104
25	155	158	165	173	147	143	140
30	200	205	215	227	200	184	179
35	250	257	271	287	237	229	222
40	305	315	333	354	289	278	269
45	360	378	400	427	344	331	320
50	425	446	474	507	405	388	375
55	495	520	553	593	469	450	433
60	570	598	638	686	538	515	495
65	645	682	728	785	612	584	561
70	730	771	825	891	690	658	631

This is a working document that has not been adopted.

# Design and Control Vehicle Guidance

**Table 3 Typical Design & Control Vehicles by Context Classification**

New table

Context Classification	Local	Collector	Arterial	Freeway <sup>1</sup>
<b>Natural (C1) / Rural (C2)</b>	DV = WB-40 CV = WB-62	DV = WB-40 CV = WB-62	DV = WB-40 (WB-62 or WB-67 on Designated Freight routes) CV = WB-62 or WB-67	DV = WB-40 (WB-62 or WB-67 on Designated Freight routes) CV = WB-62 or WB-67
<b>Rural Town (C2T)</b>	DV = DL-23 CV = SU-30	DV = SU-30 CV = WB-40	DV = WB-62, WB-67 for Designated Freight Corridors	DV = WB-62, WB-67 for Designated Freight Corridors
<b>Suburban Residential (C3R)</b>	DV = DL-23 CV = WB-40/BU-40	DV = DL-23 CV = WB-40/BU-40	DV = WB-40 CV = WB-62, WB-67 for Designated Freight Corridors	DV = WB-62, WB-67 for Designated Freight Corridors
<b>Suburban Commercial (C3C)</b>	DV = DL-23 CV = WB-40/BU-40	DV = DL-23 CV = WB-40/BU-40	DV = WB-40 CV = WB-62, WB-67 for Designated Freight Corridors	DV = WB-62, WB-67 for Designated Freight Corridors
<b>General Urban (C4)</b>	DV = DL-23 CV = SU-30/BU-40	DV = DL-23 CV = SU-30/BU-40	DV = SU-30 CV = WB-50	DV = WB-62, WB-67 for Designated Freight Corridors
<b>Urban Center (C5)</b>	DV = DL-23 CV = SU-30/BU-40	DV = DL-23 CV = SU-30/BU-40	DV = SU-30 CV = WB-50	DV = WB-62, WB-67 for Designated Freight Corridors
<b>Urban Core (C6)</b>	DV = DL-23 CV = BU-40	CV = BU-40	DV = WB-40	DV = WB-62, WB-67 for Designated Freight Corridors

Table Notes:

1. Use the AASHTO WB-109D as the design vehicle for tandem truck routes.

This is a working document that has not been adopted.

# New Cross Section Element Tables by Context

## 3.9.1.2 Natural and Rural

Table 29 Cross Section Criteria for Natural (C1) and Rural (C2) Contexts

New Table

Design Speed-Based Elements					
Design Speed (MPH)	≤ 35	40	45	50	55
Travel Lane Width (feet) <sup>2,3</sup>	10 <sup>1</sup> – 11	10 – 11	10 – 11	11 – 12	12
Turn Lane Width (feet) <sup>4</sup>	10 – 11	10 – 11 <sup>2</sup>	10 – 11 <sup>2</sup>	11 – 12	12
Passing Lane Width (feet)	n/a	11	11	12	12
Median Width (feet) – Flush <sup>4</sup>	0 – 2	0 – 16	≥20	≥30	≥40
Median Width (feet) – Raised <sup>4</sup>	4 – 16	4 – 22	4 – 22	4 – 40	4 – 40
Inside Shoulder Width (feet) – Flush Shoulder	2	2	4	8	8
Outside Shoulder Width (feet) – Flush Shoulder					
Border Width (feet) – Flush Shoulder <sup>5</sup>					
Border Width (feet) – Curbed <sup>5</sup>					
Shared Lane Markings					

Functional Classification Based Elements			
Functional Classification	Local	Collector	Arterial
Number of Lanes	2	Primarily 2	2 – 4
Sidewalk Width (feet)	Not anticipated, ≥5 where provided	Not anticipated, ≥5 where provided	Not anticipated, ≥5 where provided
Shared Use Path Width (feet)	Not anticipated, ≥10 where provided	Not anticipated, ≥10 where provided	Not anticipated, ≥10 where provided
Pedestrian Buffer (feet)	Not anticipated, ≥3 where provided	Not anticipated, ≥3 where provided	Not anticipated, ≥5 where provided
Buffered Bicycle Lane (feet) <sup>7</sup>	Not anticipated	Not anticipated	Not anticipated
Refuge Island Width (feet) <sup>8</sup>	Not anticipated	Not anticipated	Not anticipated
Parking Width (feet)	Limited and typically informal	Not anticipated	Not anticipated

This is a working document that has not been adopted.

# Criteria for 30, 45, and 60 Degree Parking

## City of Albuquerque Example:

Figure 3.8-1 Preferred Dimensions for Angle Parking

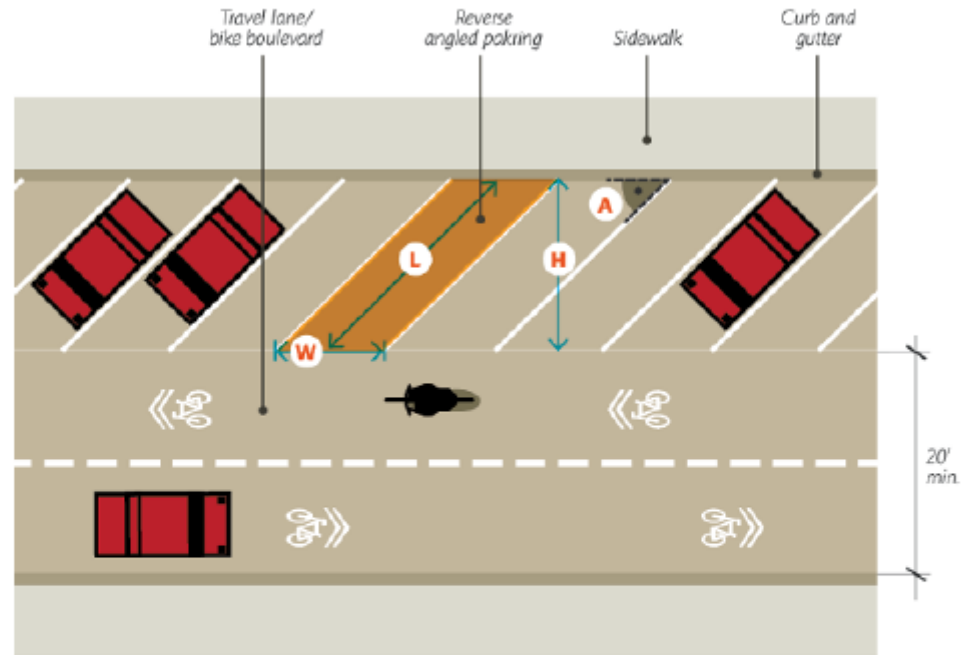


Table 3.8-1 Preferred Dimensions for Angle Parking

Angle (A)	Stall Length (L)	Stall Width (W)	Stall Depth (H)
30°	32.7'	17'	16.36'
45°	26.5'	12'	18.7'
60°	22.9'	9.8'	11.5'

This is a working document that has not been adopted.

# Breakout Groups

# Breakout Groups (1.5 hours)

4. Design Speed, Design Vehicles
5. Travel Lanes, Medians, Border Width
6. Bicycle, Pedestrian, Parking

Option to rotate every 25 minutes or stay in one group

*Break*  
*Resume at 3:30*

# **Achieving Zero Together – FDOT Target Zero**

**Brenda Young, PE, CPM, FCCM**

State Safety Engineer

State Safety Office - Florida Department of Transportation

# Together Toward Zero Fatalities and Serious Injuries



*Florida Greenbook Committee  
April 16, 2026*



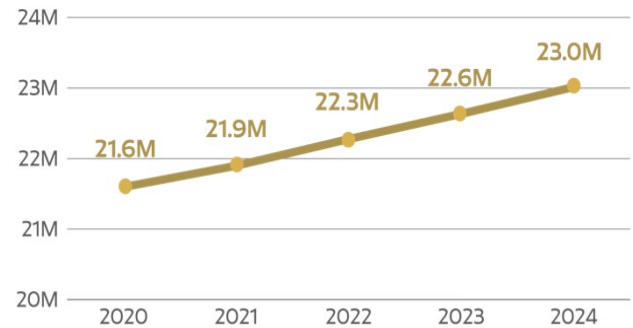
# Targeting Zero Fatalities, Serious Injuries

Last 5 Years, per Florida SHSP:

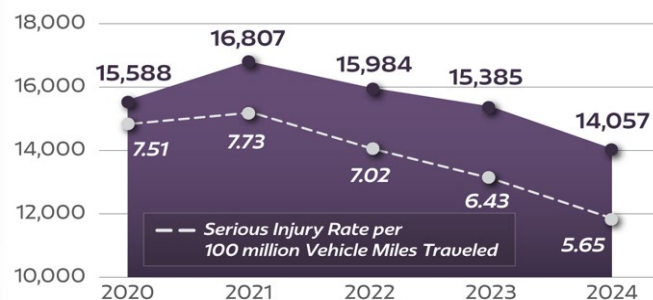
**ANNUAL FATALITIES**



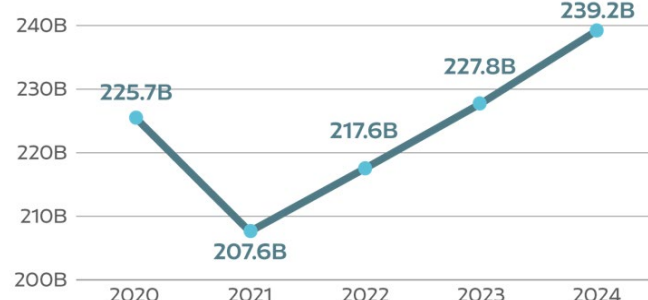
**FLORIDA'S POPULATION**



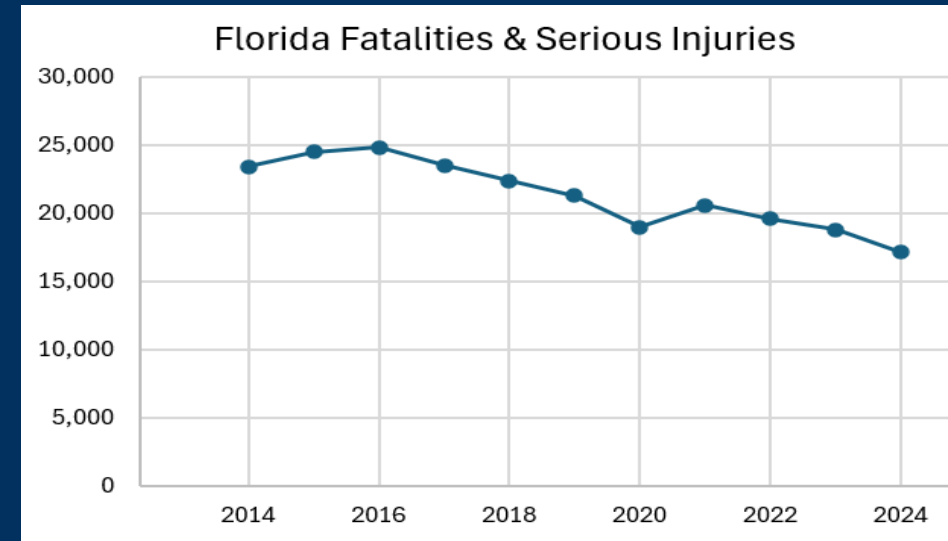
**ANNUAL SERIOUS INJURIES**



**ANNUAL VEHICLE MILES TRAVELED**

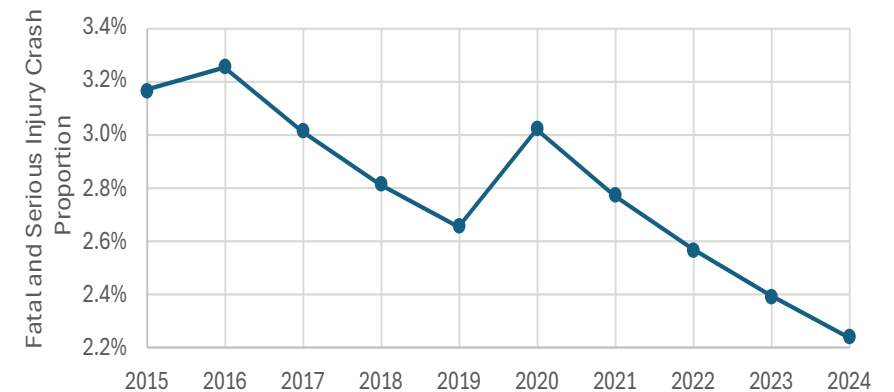


Last 10 Years  
(number of fatalities/serious injuries down 27%):



Last 10 Years  
(percentage of crashes that are severe, down 29%):

**Fatal and Serious Injury Proportion of All Crashes on Public Roads in Florida**

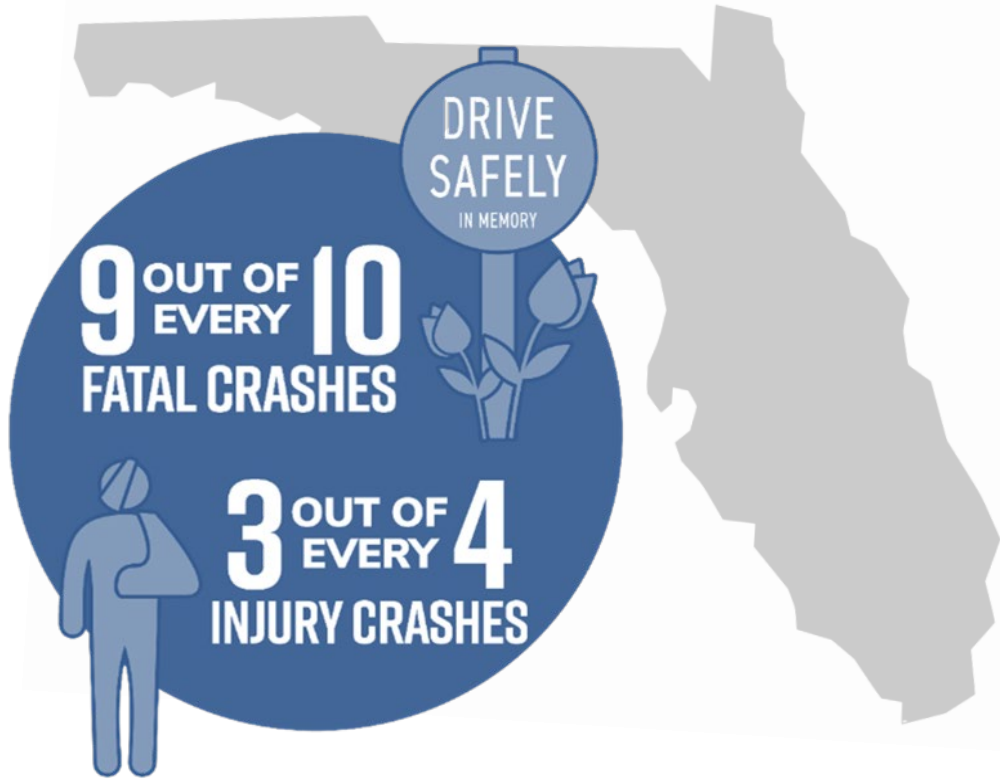


# Target Zero Focus: Fatalities, Serious Injuries

Lane Departures  
**33%**

Pedestrians & Bicyclists  
**28%**

Intersections  
**25%**



# Fatalities, Serious Injuries: ALL Public Roadways

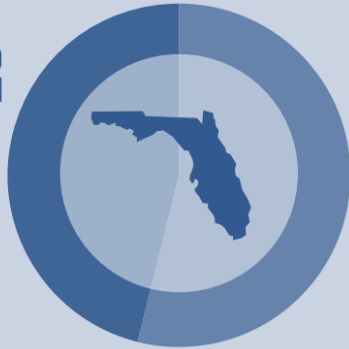
Lane Departures  
**33%**

Pedestrians & Bicyclists  
**28%**

Intersections  
**25%**

## Roadway Type

**46%**  
Local



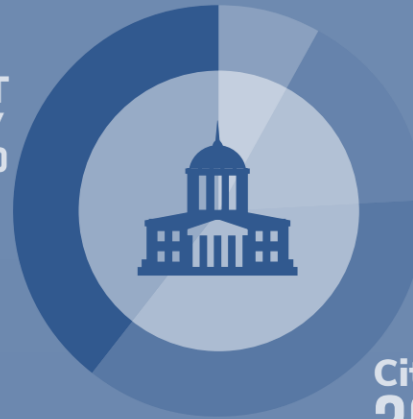
**54%**  
State

Area Type

## Road Maintaining Agency

Other  
**8%**

FDOT  
**39%**

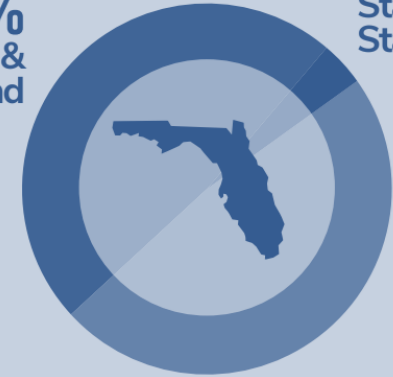


Counties  
**16%**

Cities  
**36%**

## Intersection Type

**48%**  
Off-System Road &  
Off-System Road

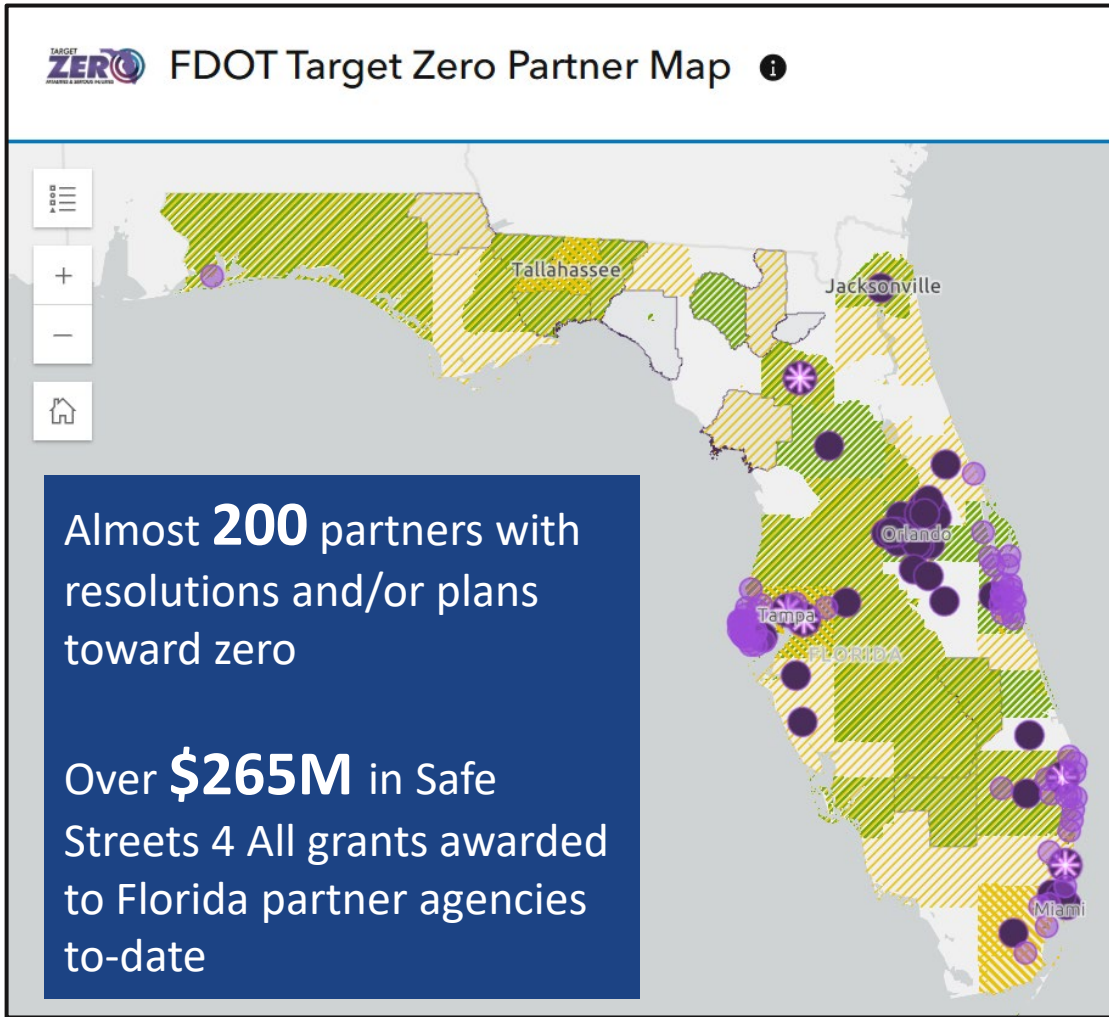


**4%**  
State Highway &  
State Highway

**48%**  
State Highway &  
Off-System Road



# Partner Collaboration Toward Zero



## Academia: Research & Projects



## Florida Industry Partners



# FDOT's NEW Policy: "Achieving Target Zero"

DocuSign Envelope ID: 2CE46A43-9A0B-4553-893A-4303A1462117

**FDOT**  
Florida Department of Transportation  
605 Suwannee Street  
Tallahassee, FL 32399-0450

RON DESANTIS  
GOVERNOR

JARED W. PERDUE, P.E.  
SECRETARY

**POLICY**

Effective: March 19, 2026  
Office: State Safety Office  
Topic No.: 000-500-015

**ACHIEVING TARGET ZERO**

It is the policy of the Department of Transportation to implement Target Zero, a performance driven statewide safety initiative. Target Zero is a proactive, bold, and systematic approach toward eliminating all fatalities and serious injuries across Florida's transportation system.

The Department will support the Target Zero goal by:

- Implementing engineering solutions
- Developing education campaign strategies
- Engaging the community at outreach events

The Department will, for each of these strategies, have established goals and targeted solutions with measured and reported outcomes, such as:

- Engineering solutions will be evaluated by measuring reductions in fatalities and serious injuries
- Education campaigns will be evaluated by measuring outcomes with engagement principles
- Community outreach events will be evaluated by tracking safety commitments


The Department will apply behavioral science, innovative technology, and research in a data-driven approach, considering roadway characteristics and crash types on the state highway system to prioritize strategies:

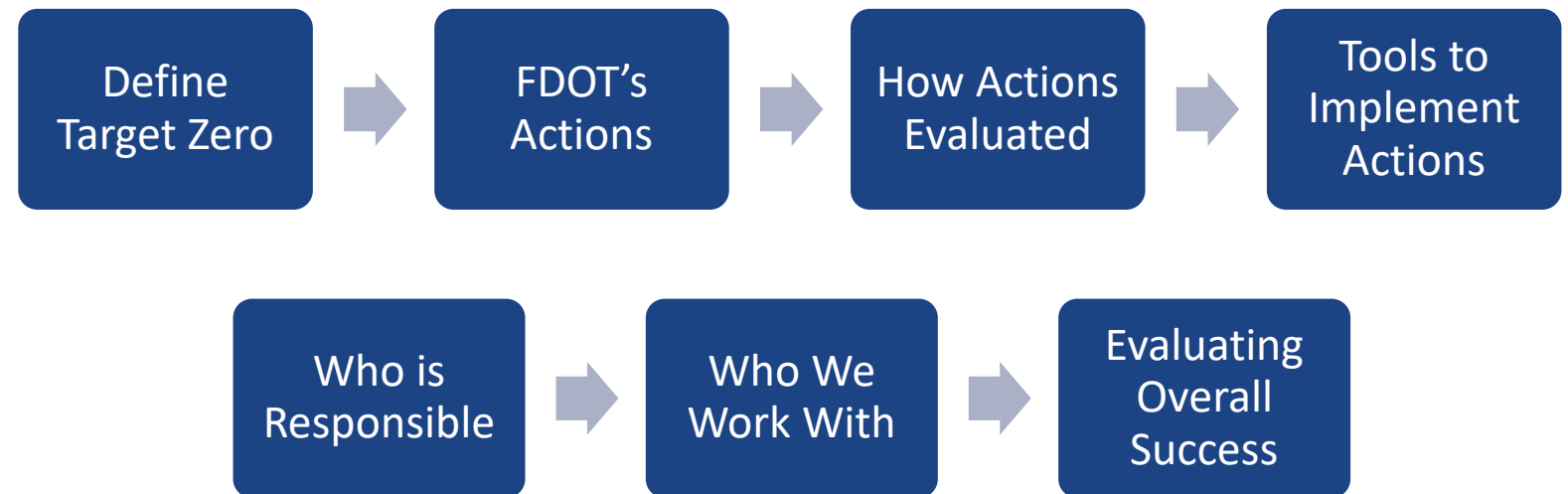
- Engineering: Installing safety improvements where severe crashes occur, investing in proactive statewide systemic infrastructure initiatives, and enhancing and expanding engineering criteria to prescribe Target Zero priority infrastructure
- Education campaigns: Advertising to promote safe practices and laws, tailored messages for influencing specific regions, audiences, and behaviors, and proactively addressing emerging needs
- Community outreach events: One-on-one interactions to address current, ongoing, and expected safety challenges that are strategically focused on specific regions, audiences, and behaviors based on data and community needs, messaging to support education campaigns, and gathering community feedback

Target Zero will be fully integrated into all aspects of the project development process, including planning, design, construction, operations, and maintenance manuals, guidelines, and related documents governing the transportation facilities managed by the Department.

The Department will coordinate with Florida's traffic safety coalitions, local governments, Metropolitan Planning Organizations, transportation agencies, and the public to implement Target Zero priorities.


The Department will analyze trending contributing factors that influence safety outcomes in Florida and isolate and track the strategies that significantly impact progress toward zero.

DocuSigned by:  
  
Jared W. Perdue, P.E.  
Secretary



# FDOT Actions Toward Zero

DocuSign Envelope ID: 2CE46A43-9A0B-4553-893A-4303A1462117

  
**Florida Department of Transportation**  
605 Suwannee Street  
Tallahassee, FL 32399-0450

RON DESANTIS  
GOVERNOR

JARED W. FERDUE, P.E.  
SECRETARY

**POLICY**

Effective: March 19, 2026  
Office: State Safety Office  
Topic No.: 000-500-015

**ACHIEVING TARGET ZERO**

It is the policy of the Department of Transportation to implement Target Zero, a performance driven statewide safety initiative. Target Zero is a proactive, bold, and systematic approach toward eliminating all fatalities and serious injuries across Florida's transportation system.

The Department will support the Target Zero goals by:

- Implementing engineering solutions
- Developing education campaign strategies
- Engaging the community at outreach events

The Department will, for each of these strategies, have established goals and targeted solutions with measured and reported outcomes, such as:

- Engineering solutions will be evaluated by measuring reductions in fatalities and serious injuries
- Education campaigns will be evaluated by measuring outcomes with engagement principles
- Community outreach events will be evaluated by tracking safety commitments


The Department will apply behavioral science, innovative technology, and research in a data-driven approach, considering roadway characteristics and crash types on the state highway system to prioritize strategies:

- Engineering: Installing safety improvements where severe crashes occur, investing in proactive statewide systemic infrastructure initiatives, and enhancing and expanding engineering criteria to prescribe Target Zero priority infrastructure
- Education campaigns: Advertising to promote safe practices and laws, tailored messages for influencing specific regions, audiences, and behaviors, and proactively addressing emerging needs
- Community outreach events: One-on-one interactions to address current, ongoing, and expected safety challenges that are strategically focused on specific regions, audiences, and behaviors based on data and community needs, messaging to support education campaigns, and gathering community feedback

Target Zero will be fully integrated into all aspects of the project development process, including planning, design, construction, operations, and maintenance manuals, guidelines, and related documents governing the transportation facilities managed by the Department.

The Department will coordinate with Florida's traffic safety coalitions, local governments, Metropolitan Planning Organizations, transportation agencies, and the public to implement Target Zero priorities.

The Department will analyze trending contributing factors that influence safety outcomes in Florida and isolate and track the strategies that significantly impact progress toward zero.

Developed by:  
  
Jared W. Ferdue, P.E.  
Secretary

- Implementing Engineering Solutions
- Developing Education Campaign Strategies
- Engaging the Community at Outreach Events

# Education Campaign Strategies

## Example: Distracted Driving Campaign

Social media, audio and video streaming, gas pump videos, television, radio, billboards



# Community Engagement



# Implementing Engineering Solutions

DocuSign Envelope ID: 2CE46A43-9A0B-4553-893A-4303A1462117

**FDOT**  
Florida Department of Transportation  
605 Suwannee Street  
Tallahassee, FL 32399-0450

RON DESANTIS  
GOVERNOR

JARED W. PERDUE, P.E.  
SECRETARY

**POLICY**

Effective: March 19, 2026  
Office: State Safety Office  
Topic No.: 000-500-015

**ACHIEVING TARGET ZERO**

It is the policy of the Department of Transportation to implement Target Zero, a performance driven statewide safety initiative. Target Zero is a proactive, bold, and systematic approach toward eliminating all fatalities and serious injuries across Florida's transportation system.

The Department will support the Target Zero goal by:

- Implementing engineering solutions
- Developing education campaign strategies
- Engaging the community at outreach events

The Department will, for each of these strategies, have established goals and targeted solutions with measured and reported outcomes, such as:

- Engineering solutions will be evaluated by measuring reductions in fatalities and serious injuries
- Education campaigns will be evaluated by measuring outcomes with engagement principles
- Community outreach events will be evaluated by tracking safety commitments

The Department will apply behavioral science, innovative technology, and research in a data-driven approach, considering roadway characteristics and crash types on the state highway system to prioritize strategies:

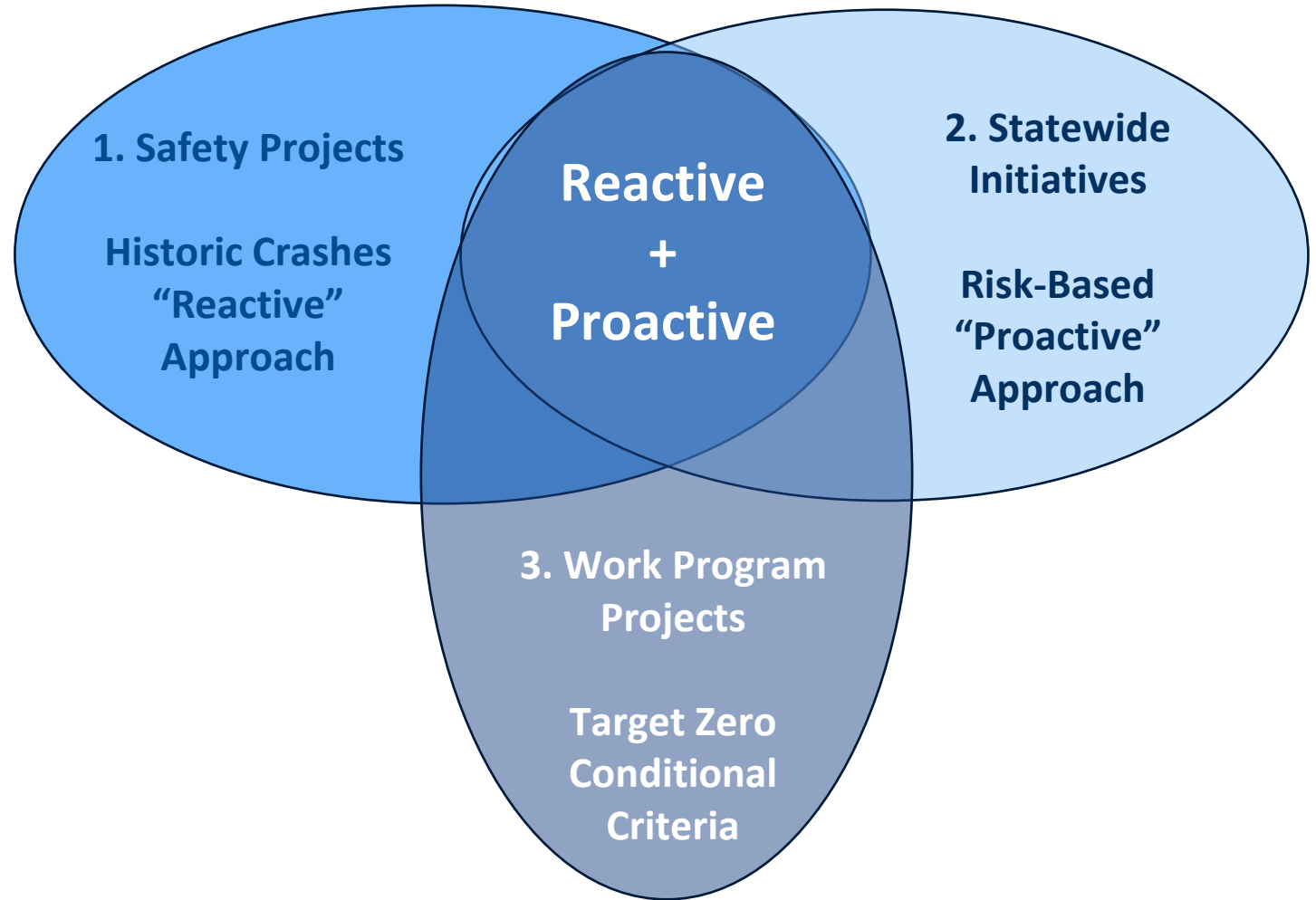
- Engineering: Installing safety improvements where severe crashes occur, investing in proactive statewide systemic infrastructure initiatives, and enhancing and expanding engineering criteria to prescribe Target Zero priority infrastructure
- Education campaigns: Advertising to promote safe practices and laws, tailored messages for influencing specific regions, audiences, and behaviors, and proactively addressing emerging needs
- Community outreach events: One-on-one interactions to address current, ongoing, and expected safety challenges that are strategically focused on specific regions, audiences, and behaviors based on data and community needs, messaging to support education campaigns, and gathering community feedback

Target Zero will be fully integrated into all aspects of the project development process, including planning, design, construction, operations, and maintenance manuals, guidelines, and related documents governing the transportation facilities managed by the Department.

The Department will coordinate with Florida's traffic safety coalitions, local governments, Metropolitan Planning Organizations, transportation agencies, and the public to implement Target Zero priorities.

The Department will analyze trending contributing factors that influence safety outcomes in Florida and isolate and track the strategies that significantly impact progress toward zero.

DocuSigned by:  
*Jared W. Perdue*  
Jared W. Perdue, P.E.  
Secretary



# 1. Where Crashes Already Occur

## HSIP District Allocation

2017 – 2021, \$109M:

Almost **450** fewer fatal and serious injury crashes. The rate (per VMT) reduced by over **20%.**



## 2. Statewide Proactive Initiatives



### Intersection Lighting Retrofit

- \$100M FY 16 – FY 26
- 2,500 Intersections
- **Measured over 1,600 fewer fatalities and injuries to-date**



### Rumble Strips

- \$60M FY 24 – FY 26
- 3,000 Centerline miles
- **Projected 150 fewer fatalities, over 500 fewer serious injuries**



### Median Barriers

- \$130M FY 27 and FY 28
- 100 Centerline miles
- **Projected almost 300 fewer fatalities, 1,500 fewer serious injuries**

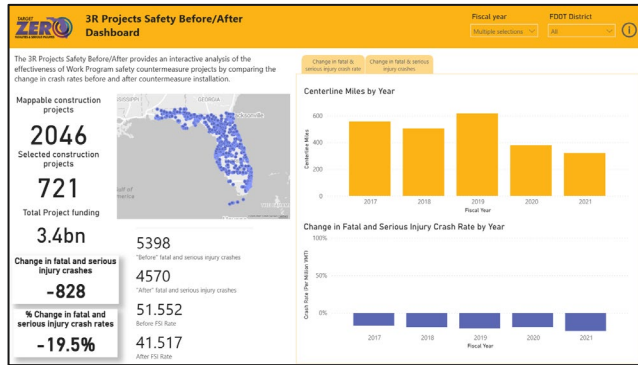


### Curves Warning

- \$80M FY 29 and FY 30
- 2,500 Curves
- **Projected over 100 fewer fatalities, over 500 fewer serious injuries**

# 3. Criteria for Resurfacing & Capacity Projects

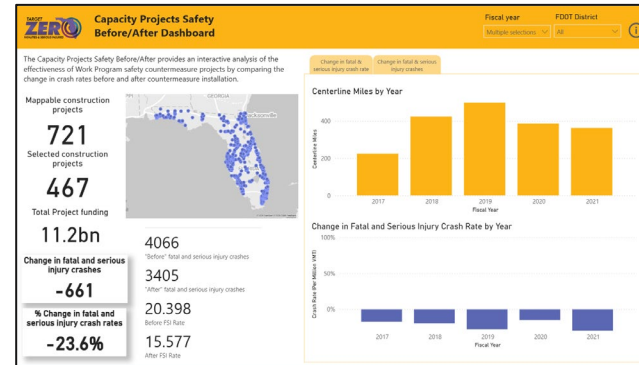
## Current Safety & Context Based Engineering Criteria



## Resurfacing

2017 – 2021, \$3.4B:

Over **800** fewer fatal and serious injury crashes. The rate (per VMT) reduced by **19%**.



## Capacity

2017 – 2021, \$11.2B:

Over **650** fewer fatal and serious injury crashes. The rate (per VMT) reduced by **25%**.

## Enhance and Expand Target Zero Criteria

### Pedestrians and Bicyclists:

- Midblock crossings
- Pedestrian refuge islands
- Leading pedestrian interval
- Shared use paths or separated bike lanes

### Intersections:

- Backplates with retro-reflective borders
- Convert permissive/protected left turn phasing to protected
- Flashing yellow arrows
- Single lane roundabouts
- Median U-turn (MUT) intersections
- Restricted crossing U-turn (RCUT) intersections
- Intersection conflict warning system (ICWS)
- Centerline hardening

### Lane Departures:

- Centerline and edgeline rumble strips
- Chevron signs, curve warning signs, pavement markings

### Cross-Cutting:

- Corridor lighting
- Lighting when installing midblock crossing
- Lighting at signalized intersections



**Thank You Greenbook  
Committee**

**Together Toward Zero**



# *Committee Discussion & Next Steps*

# General Discussion

OPEN FOR PUBLIC COMMENT



## Online Attendees *Meeting Logistics*

---



The chat feature can be used to ask questions to the presenters or share resources.



Be sure to mute your microphone unless you are asking a question.



You may turn on or off your video camera accordingly.



Raise your virtual hand to ask a live question.



## CONTACT

If you have any questions, comments or suggestions regarding the *Florida Greenbook*, please contact:

***Derwood Sheppard, P.E.***

State Roadway Design Engineer

Email: [Derwood.Sheppard@dot.state.fl.us](mailto:Derwood.Sheppard@dot.state.fl.us)

Phone: (850) 414-4334

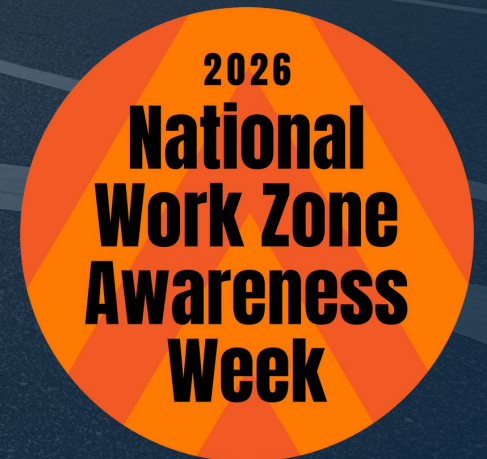
***Jacqui Morris, CPM, CNUa***

Criteria Publications Coordinator

Email: [jacqueline.Morris@dot.state.fl.us](mailto:jacqueline.Morris@dot.state.fl.us)

Phone: (850) 414-4352

# Thank you for attending!



## FLORIDA RULEMAKING PROCESS

The rulemaking process is governed by **Chapter 120, F.S.**, the Administrative Procedure Act (APA). The rulemaking process typically takes several months to complete.

A proposed rule or revision of a rule follows these steps as required by the APA:

- The agency drafts the rule and/or revision to rule and receives approval from the agency head.
- A **Notice of Rule Development** must be published online in the Florida Administrative Register (FAR).

The Department is required to submit a copy of the proposed Notice of Rule Development, along with any supporting documents, to the **Governor's Office of Fiscal Accountability and Regulatory Reform (OFARR)** a week prior to publication of this notice. This provides OFARR with an opportunity to review and to provide the Department with any questions or concerns.

- Chapter 120, F.S., allows an agency to then hold a **Rule Development Workshop**. An agency is not required to hold a workshop unless requested in writing by an affected person and not deemed unnecessary by the agency head. If a rule development workshop is held, notice must be published at least 14 days in advance of the workshop in the FAR.
- Next, an agency publishes a **Notice of Proposed Rulemaking** in the FAR (within 180 days after publication of Notice of Rule Development) with the text of the proposed rule or amendments to an existing rule, along with any proposed changes to materials incorporated by reference. The Department is required to submit a copy of this notice, along with any supporting documents, to OFARR a week prior to publication in the FAR.

The agency is also required to submit a copy of the rule and supporting materials to the Legislature's **Joint Administrative Procedures Committee (JAPC)** at least 21 days prior to adoption. Affected persons may submit written comments to the agency during the 21-day comment period.

- JAPC reviews the rule for technical and substantive errors and provides feedback to the agency.
- An agency is required to hold a **Public Hearing** on the proposed rule if requested by an affected person within 21 days of publication of the Notice of Proposed Rulemaking. At the public hearing, agency staff must be present to explain the proposed rule and respond to questions.
- If the agency makes changes to the rule based on comments received from JAPC and/or as result of comments received at the public hearing or written comments received from affected persons during the comment period, the agency must publish a **Notice of Change** in the FAR at least 21 days prior to adoption and provide a copy of the Notice of Change to JAPC.

The Department is required to submit a copy of the Notice of Change, along with any supporting documents, to OFARR a week prior to publication in the FAR.

- The agency then files for **Adoption** with the Department of State. Generally, a rule may be filed for adoption between 28 to 90 days after publication of the notice of proposed rulemaking. A notice of change extends the time to file for rule adoption for an additional 45 days. The rule becomes effective 20 days after filing with the Department of State.

## FLORIDA'S GOVERNMENT-IN-THE SUNSHINE LAW

### 1. THE LAW

Florida's Sunshine Law is found in **Article I, Section 24, Florida Constitution** and **Chapter 286, Florida Statutes (F.S.)**, and applies to state agencies. The Sunshine Law is to be liberally construed; its exemptions are to be narrowly construed. Two or more people who are tasked with making a decision or recommendation constitute a "Board or Commission" under the Sunshine Law and are subject to its provisions. **Section 286.011(1), F.S.**, states:

All meetings of any board or commission of any state agency . . . at which official acts are to be taken are declared to be public meetings open to the public at all times, and no resolution, rule, or formal action shall be considered binding except as taken or made at such meeting.

Members may discuss such board or commission business matters only at a public meeting. The use of third persons or other means to evade the Sunshine Law is prohibited. The Sunshine Law does not generally apply to individual decision makers, fact finding, or general staff meetings.

### 2. BASIC PUBLIC MEETING REQUIREMENTS

#### A. Open, Accessible, Non-Discriminatory, Technology.

- 1) Pursuant to **Section 286.26, F.S.**, public meetings must be open to the public, made accessible to individuals with physical handicaps and held at locations that are accessible to such persons.
- 2) Pursuant to **Section 286.011(6), F.S.**, public meetings are prohibited from being held at any location that discriminates on the basis of sex, race, age, creed, color, origin, or economic status, or operates in a manner as to unreasonably restrict public access.
- 3) Public meetings may include the use of teleconference, video, webinar, or other technology, but the public must be provided points of access. See **Rule Chapter 28-109, F.A.C.**, regarding conducting proceedings by communications media technology.

#### B. Reasonable Notice.

Pursuant to **Section 286.011(1), F.S.**, reasonable notice of public meetings must be provided. A minimum of 24 hours is considered reasonable notice. Pursuant to **Section 286.0105, F.S.**, notices of meetings must advise the public that a record of the meeting is required for an appeal of any decision made at the meeting, and that the person who wants to appeal a decision may need to ensure that a verbatim record of the meeting is made.

Public meeting notices are published on the Department's website. Meetings subject to **Chapter 120, F.S.**, the Administrative Procedures Act, must also be published in the Florida Administrative Weekly. Generally, an agenda is advisable, but generally not required.

C. Minutes.

Pursuant to **Section 286.011(2), F.S.**, minutes of public meetings must be taken, promptly recorded, and available for public inspection. The minutes may be posted or provided upon request. Recordings or transcripts are not required, but persons attending are permitted to record or videotape the meeting.

3. EXEMPTIONS

There are a limited number of exemptions to public meetings requirements under **Section 286.0113, F.S.:**

- A. Meetings in which all or part of a security system plan would be revealed.
- B. Procurements under **Section 287.057, F.S.**, in which there are negotiations with a vendor or there are oral questions and answers of a vendor. As required by **Section 286.0113(2)(c)1., F.S.**, a complete recording of the negotiations or oral presentations must be made and no portion may be off the record. The recordings will be exempt from the public records requirement of **Section 286.0113(2)(c)2., F.S.**, until a notice of decision or intended decision is provided or 30 days after the bids, proposals, or final replies are opened.

4. CONSEQUENCES OF SUNSHINE LAW VIOLATIONS

There are a number of consequences for failure to comply with the Sunshine Law:

- A. Noncriminal penalties. A violation constitutes a noncriminal infraction and violators are subject to the imposition of a fine not to exceed \$500. **Section 286.011(3)(a), F.S.**
- B. Criminal penalties. A knowing violation, occurring either within or outside the state, is a second-degree misdemeanor, punishable under **Section 775.082, F.S.**, or **section 775.083, F.S.**, which provides for up to 60 days in jail or a fine of \$500. **Sections 286.011(3)(b) and (c), F.S.**
- C. Attorney's fees. In an action to enforce the Sunshine Law or to invalidate actions taken in violation of the Sunshine Law, attorney's fees will be assessed against the agency and may be assessed against individual members of the board or commission, including attorney's fees on appeal. Anyone filing such an action found to have done so in bad faith may also be assessed with attorney's fees. **Section 286.011(4) and (5), F.S.**

D. Injunctions. Circuit courts have jurisdiction to issue injunctions to enforce the Sunshine Law. **Section 286.011(2), F.S.**

E. Action Void. Actions taken at a meeting where the Sunshine Law was violated are void. **Section 286.011(1), F.S.** Only a full open hearing, meeting, or workshop can cure a Sunshine Law violation; a perfunctory ratification of actions taken will not suffice.

F. Removal from office. **Section 112.52(1), F.S.**

G. Loss of public confidence.