

# Florida Greenbook

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

## Sub-committee Meeting

Chapter 3 – Geometric Design

# Agenda

**October 30, 2025**  
10:00 AM – 11:00 AM

Virtual on Microsoft Teams  
[MS Teams Link](#)

10:00 AM	Welcome and Introductions	Derwood Sheppard
10:10 AM	Chapter 3 Outline Review (17 <sup>th</sup> Edition)	Jacqui Morris, Kittelson Staff
10:30 AM	Sub-Committee Discussion	Chapter 3 Sub-Committee
10:40 AM	Action Items and Next Steps	Jacqui Morris, Kittelson Staff
10:50 AM	Closing remarks <ul style="list-style-type: none"><li>Public Comment</li></ul>	Jacqui Morris

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

Commonly known as the

# *Florida Greenbook*

**Subcommittee Meeting**

Chapter 3 – Geometric Design

**October 30, 2025**

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**Public Meeting**



# Welcome & Introductions

**Derwood C. Sheppard, Jr., M.Eng., P.E.**

*Florida Greenbook Chair*

Florida Department of Transportation -  
State Roadway Design Engineer



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10:50 AM	Closing remarks <ul style="list-style-type: none"><li>• Public Comment</li></ul>	Jacqui Morris

## 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 3 - Review

This is a working document  
that has not been adopted.

## Chapter 3

### Geometric Design

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17<sup>th</sup> Edition

*Subcommittee  
Discussion*



*Open for public comment*



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*Thank you for attending!*

**PEDESTRIAN SAFETY  
MONTH**



**LET'S GET EVERYONE HOME SAFELY**

## Contact

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

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# Florida Greenbook

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## Sub-Committee Meeting – Chapter 3 Geometric Design

# Agenda

**October 30, 2025**  
10:00 AM – 11:00 AM

**Virtual on Microsoft Teams**

### Attendees

Daniel Eichler  
James Frimmel  
Karina Fuentes  
Andres (Andy) Garganta  
Benjamin Gerrell  
Tim Holley  
Joshua Jester  
Chad Johnson  
Chad Lingenfelter  
Mohammed Majboor  
Ryan McGee  
Mark Musselman

John Olson  
Terra Parish  
Samantha Samford  
Allen Schrupf  
Thuraia Sully  
Rhonda Taylor

Jacqueline (Jacqui) Morris  
Derwood Sheppard  
Jennifer Musselman  
DeWayne Carver  
James Ehmer

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Topic		
1	Welcome and Introductions [Slide #1 – 3]	Jacqui Morris, Derwood Sheppard
	<p>Jacqui Morris introduced herself and welcomed everyone.</p> <p>Derwood Sheppard provided an overview of the work done to incorporate April Committee Meeting input to create the Chapter 3 outline.</p> <p>Jacqui asked meeting attendees to introduce themselves. Each of the participants introduced themselves when called upon.</p>	
2	Chapter 3 Outline Review (17th Edition) [Slide #4]	Jacqui Morris, Kittelson Staff
	<p>Jacqui reminded the subcommittee that this meeting is to review the future 17th edition of the Florida Greenbook and the purpose of Chapter 3 as the “nuts and bolts” of the Florida Greenbook.</p> <p>Jennifer Musselman provided a high level overview of the proposed outline of Chapter 3, with a side-by-side comparison of the previous outline of the chapter. A key goal of the proposed revisions to the chapter’s outline is to incorporate context-based design.</p> <p>Jennifer noted the following changes:</p> <p><b>Table of Contents</b></p> <ul style="list-style-type: none"><li>- Simplified the number and degree of subheadings.</li><li>- Moved <i>Alignment Coordination</i> before <i>Horizontal</i> and <i>Vertical Alignment</i> sections.</li><li>- Eliminated the last three subsections rehomed content in other sections of the chapter or other chapters.</li></ul> <p><b>3.1 Introduction</b></p> <ul style="list-style-type: none"><li>- Updated discussion on urban vs. rural to context classification</li></ul> <p><b>3.2 Objectives</b></p> <ul style="list-style-type: none"><li>- Moved safety to the top, and introduced the concept of a “self-enforcing roadway”</li><li>- Expected operating speed was updated to target speed.</li></ul>	

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## 3.3 Design and Target Speed

- Target speed will be introduced in Chapter 1.
- This section starts with definitions for the terms then provides speed ranges for each context, adding speed guidance from Chapter 16 Residential Street Design and Chapter 19 Traditional Neighborhood Design for local streets, as these chapters will be sunset.
- Design criteria will still be based on design speed.

## 3.4 Design Vehicles

- The proposed changes provide more guidance on the control vehicle and design and control vehicle selection based on context
- Existing tables will also remain.

## 3.5 Sight Distance

- Guidance from Chapters 16 and 19 for very low speeds was integrated
- Intersection design sight distance was moved into this chapter, criteria will remain the same.

## 3.6 Alignment Coordination

- Placed before the Horizontal and Vertical Sections to have a more logical flow.

## 3.7 Horizontal Alignment

- Added guidance to discourage superelevation in most urban contexts.

## 3.8 Vertical Alignment

- No changes

## 3.9 Cross Section Elements

- Added a series of guidance tables for freeway criteria, rural, suburban, and urban contexts.
- Proposed a joint table for rural and natural contexts, based on lessons learned from FDM, but open to keeping these separate.
- Option to move rural town into urban contexts, but the current thought process is to pair it with the rural context, as a designer will

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be able to find everything in the same section if they are designing a rural highway.

- Pulled in the bicycle and pedestrian cross section elements into the context based tables.
- Chapter 19 criteria was integrated into the Urban context tables.
- Added a context classification transition section for transitions in space and time.
- Channelizing islands guidance, a figure illustrating a smart channel and concept text were added.
- For curb guidance, added all of the curb types from the FDM drawings.

### **3.10 Access Control**

- Limited Access, no changes,
- Non-limited access, proposed providing more guidance via a table to provide common modes and access considerations including more specific recommendations for turn lanes, turning movements, when frontage roads are helpful, balancing freight movements etc.
- Added context based tables with access spacing criteria.
- Access management information was based on the FDOT access management materials

### **3.11 Intersection Design**

- Rearranged organization by scale, nested auxiliary lane criteria with the intersection that fits best.
- Provided additional guidance on driveway access points based on context, parking restrictions on very low speeds and possible exemptions.
- Incorporated guidance for actual vs. effective turning radius when parking is present, pulled in the criteria from Chapter 19 for turning movements.
- Proposed including alternative intersection types

### **3.12 Other Design Factors**

- This section was pared down, with content moved to more relevant chapters within the Greenbook.

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Jacqui noted that she and Jennifer also worked with a Benjamin Gerrell, P.E, in the State Roadway Design Office, who reviewed the outline and content.

3

Sub-Committee Discussion [Slide #5]

Chapter 3 Sub-Committee

Andy said the new outline looks great, and asked about the amount of guidance for roundabouts. Jennifer commented that there were no changes from the previous version of the chapter (it currently references NCHRP Report 1043), and that we can add more guidance if the committee wishes to, such as a reference to FDOT design criteria for roundabouts. Derwood expressed a preference to reference FDOT design criteria for roundabouts, rather than add guidance text to the Greenbook to ensure that the Greenbook remains up to date, as roundabout criteria have been evolving rapidly.

Andy asked the committee to consider that the current FDOT guidance is mostly for high and very high speed streets. Andy rounded out his comments that he is happy with all other proposed changes.

Jacqui reminded the subcommittee that the proposed outline is for a future publication of the Florida Greenbook (the 17th edition), and that this is a high level outline. Gray text is content that currently exists in the 16<sup>th</sup> Edition that will be retained in the 17<sup>th</sup> Edition. She asked the subcommittee to particularly review the green and blue text which highlights additions and significant changes respectively, and to ensure that they agree with the placement and order of sections.

Richard Tornese commented that he really liked the reorganization and appreciated the addition of the context transition guidance. He asked about the process for introducing content from other chapters that are being sunset. Jennifer commented that Chapter 16 and 19 will be sunset, but the team is noting very closely when content is being removed and added into another chapter.

Anthony commented that he appreciated grouping similar topics/content into the same design guidance so that practitioners do not have to jump out to a different chapter.

Keith commented that locals are doing a lot more roundabouts and suggested that we add a roundabout section. Jacqui asked the

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subcommittee to provide ideas on what they would find helpful for minimum design guidance, while balancing the need to keep the content up-to-date as noted by Derwood.

Derwood provided the link to the current FDOT Design Manual so committee members could reference it as they review the proposed outline individually.

Ghulam commented that the proposed outline has text that curb types D and F are not allowed on streets 45 mph or greater, noting that the current edition of the Greenbook allows these curb types on 45 mph streets. Jennifer said the language will be corrected to indicate “These curbs (type D and F) are not to be used on facilities with design speeds greater than 45 mph”, consistent with the 16<sup>th</sup> Edition.

Jacqui asked the subcommittee if there was any content the members thought might be missing and helpful to add.

Miguel asked if *Chapter 5 - Pavement Design and Construction* will remain or if it will be incorporated into Chapter 3 since it’s a 4-5 page chapter that mostly refers to AASHTO guidance. Jacqui commented that the chapter is currently under review with the Department’s Pavement Engineer, who is especially tasked with incorporating any possible additional guidance. Miguel added that he thinks the current content could be introduced into Chapter 3 if it were to remain as it is. Jacqui said there will be separate subcommittee meeting for Chapter 5 as well.

Andy commented there is not clear guidance for local streets with bike lanes and 90 degree parking spaces in *Chapter 9 – Bicycle Facilities*, and asked if this topic could be addressed in the future. He noted that current content addresses parallel and diagonal parking, but not 90 degree parking. He requested that this guidance be added to the bicycle chapter. Jenn agreed this guidance will be added.

4

Action Items and Next Steps [Slide #5]

Jacqui Morris, Kittelson Staff

Jacqui asked Andy to provide a timeline for individual committee review of the outline for additional comments. Andy requested about a month. Jacqui will schedule the next subcommittee meeting after Thanksgiving to review additional comments.

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The next step after this meeting is to create an annotated outline that is more detailed than the current high level outline. The committee members agreed with these steps and timeline.

5	Public Comment [Slide #6]	Jacqui Morris
	Jacqui provided a reminder that this is a public meeting and provided an opportunity for public comment. No comments were made.	
6	Closing Remarks [Slide #7]	Derwood Sheppard
	Derwood thanked the committee for their time and review and stated that he is excited about the changes and progress that is being made. Derwood adjourned the meeting.	

## Chapter 3

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DRAFT

## 3 Geometric Design

**Note to reviewers:** Text in gray are items currently in the Geometric Design chapter of the Greenbook. Text in green is a proposed change or addition. Text in blue is being moved from Chapter 16: Residential Street Design or Chapter 19: Traditional Neighborhood Development when those chapters are sunset.

### 3.1 Introduction

- Definition and importance of geometric design
- Relationship to other design elements (e.g., pavement design)
- Safety characteristics
- Need for engineering judgment in applying standards and criteria. Reference Chapter 14: Design Exceptions and Variations when minimum standards cannot be met.
  - Caveat statement about roads out of compliance not needing immediate reconstruction but needing to meet criteria when reconstructed.
- Needs of other road users
  - Add references to Chapter 8: Pedestrian Facilities, Chapter 9: Bicycle Facilities, and Chapter 13: Public Transit
- Update discussion on needs of urban and rural streets to discussion about context classification
- Highlight relationship to AASHTO Green Book 2018
- Remove right of way and pavement width requirement exceptions for new construction on low volume roads. Low volume road criteria will be integrated into Section 3.9 Cross Section Elements.

### 3.2 Objectives

- Major objective is to establish a path and environment that is safe for all road users and is simple to understand.
- Objectives: Existing objectives remain but were reordered to match current priorities. Incorporated additional objectives from Chapter 19: Traditional Neighborhood Development.
  - Design streets with geometric design controls in place that self-regulate and enforce safer speeds, reducing the need to retrofit streets with speed management measures and reducing the burden on local law enforcement.

- Safety at **expected operating target speed**
- Safe at night and in bad weather
- Minimize hazards to vehicles that deviate from the travel path
- Build in redundancies for driver deficiencies
- Meet traffic and transit needs
- Most simple geometry

### **3.3 Design Speed**

#### **3.3.1 Types of Speed**

- Define target speed
- Define design speed
- Relationship between target, design and posted speed

#### **3.3.2 Determining Target Speed**

- Replace Table 3-1: Minimum and Maximum Design Speed with a new table for target speed based on context classification.
  - Incorporate option for 10 mph alleys and narrow roadways intended to function as shared spaces from Chapter 16: Residential Street Design.
  - Incorporate recommendation for 20 to 35 mph target speeds on traditional neighborhood development streets from Chapter 19: Traditional Neighborhood Development into ranges for urban contexts.
- Define process for selecting a target and design speed based on context classification.
  - For low-speed facilities, ideally the target, design and posted speed are the same.
  - Design speed should be as close to the target speed as project scope will allow.
  - Design speed, not target speed, will dictate geometric design criteria.
- Reference Chapter 15: Traffic Calming for greater discussions on retrofitting streets to reach a desired target speed based on context classification.

### **3.4 Design Vehicles**

- Define design vehicle and control vehicle and explain how and when each is used for the design of a roadway.

### 3.4.1 Design Vehicles

- Guidance for selecting a design vehicle by context classification
  - [Incorporate design vehicle guidance from Chapter 19: Traditional Neighborhood Development](#)
  - [New Table: Typical Design Vehicles by Context Classification](#)

Context Classification	Local	Collector	Arterial	Freeway
Natural (C1) / Rural (C2)				
Rural Town (C2T)				
Suburban Residential (C3R)				
Suburban Commercial (C3C)				
General Urban (C4)				
Urban Center (C5)				
Urban Core (C6)				

- Table 3-2: Design Vehicles
- Table 3-3: Minimum Turning Radii of Design Vehicles

### 3.4.2 Control Vehicle

- [Guidance for selecting a control vehicle](#)
- [New Table: Typical Control Vehicles by Context Classification](#)

Context Classification	Local	Collector	Arterial	Freeway
Natural (C1) / Rural (C2)				
Rural Town (C2T)				
Suburban Residential (C3R)				
Suburban Commercial (C3C)				
General Urban (C4)				
Urban Center (C5)				
Urban Core (C6)				

## 3.5 Sight Distance

- Definition and importance of sight distance

### 3.5.1 Stopping Sight Distance

- Factors that determine minimum stopping distance
- Table 3-4: Minimum Stopping Sight Distance
  - Add 10 mph design speed from Table 16-1: Minimum Stopping Sight Distance for Residential Streets

### 3.5.2 Decision Sight Distance

- Define decision sight distance and relationship to stopping sight distance
- Provide locations where additional decision sight distance may be needed
- Table 3-5: Decision Sight Distance

### 3.5.3 Passing Sight Distance

- Define passing sight distance
- Discuss need for passing sight distances on two-lane, two-way highways
- Table 3-6: Minimum Passing Sight Distance

### 3.5.4 Intersection Sight Distance

- Moved from Intersection Design

#### 3.5.4.1 Determining Intersection Sight Distance

- Introduction and list of criteria

#### 3.5.4.2 Obstructions to Sight Distance

- Criteria for stopping sight distance when the line of sight is limited by vertical curvature or obstructions.
- Figure 3-20 Departure Sight Triangle

#### 3.5.4.3 Stopping Sight Distance

- Introduction to safe stopping sight distance for intersections and on turning roadway.

##### 3.5.4.3.1 Approach to Stops

- Table 3-28: Minimum Stopping Sight Distance

### 3.5.4.3.2 On Turning Roads

- Figure 3-19: Sight Distances for Approach to Stop on Grades

### 3.5.4.4 Sight Distance for Intersection Maneuvers

- Definition of sight triangle including formulas
- Cases to be considered when calculating ISD
- Figure 3-19: Departure Sight Triangle (Traffic Approaching from Left or Right)
- Figure 3-20: Intersection Sight Distance
- [Incorporate Table 16 – 2: Minimum Corner Intersection Sight Distance for Residential Streets](#)

#### 3.5.4.4.1 Driver’s Eye Position and Vehicle Stopping Position

- Requirements for the vertex of the departure sight triangle on a minor road
- Reference to Section 316.123 Florida Statutes for requirements relating to stopping at stop signs, stop bar, or crosswalk.

#### 3.5.4.4.2 Design Vehicle

#### 3.5.4.4.3 Case Studies for Intersection Sight Distance by Maneuver

- New Table: Sight Distance Considerations by Intersection Maneuver
  - Add note to see following section for exceptions or include as footnotes in this table.

Maneuver	Time Gap ( $t_g$ ) in Seconds		
	Passenger Car	Single Unit Truck	Combination Truck
B1 – Left Turn from a Minor Road			
B2 – Right Turn from a Minor Road			
B3 – Crossing the Major Road from the Minor Road			
D – Intersections with Traffic Signal Control			
E – Intersections with All-Way Stop Control			
F – Left Turns from the Major Road			
G – Roundabouts			

- Additional Guidance and Exceptions for Intersection Sight Distance by Maneuver

#### 3.5.4.4.4 Intersection Sight Distance References

- Figure 3-21: Sight Distance for Vehicle Turning Left from Major Road

### 3.6 Alignment Coordination

- General controls for proper combinations of horizontal and vertical alignment
- Moved before alignment criteria

### 3.7 Horizontal Alignment

- Introduction to horizontal alignment
- Locations where maximum curvature should be avoided

#### 3.7.1 Maximum Deflections in Alignment without Curves

- Table 3-7: Maximum Deflection Angle Through Intersection
- Table 3-8: Minimum Lengths of Horizontal Curves
  - Update table to include lower design speed values (as low as 10mph) from Chapter 16 – Residential Neighborhood Streets and Chapter 19 – Traditional Neighborhood Development
- Table 3-9: Length of Compound Curves on Turning Roadways

#### 3.7.2 Superelevation

- Define Superelevation
- Guidance that superelevation is generally discouraged in urban contexts to encourage operation of vehicle at target speeds.
- Reference to FDM and AASHTO superelevation sections
- Table 3-10: Superelevation Rates for Rural Highways, Urban Freeways and High Speed Urban Highways ( $e_{max} = 0.10$ )
- Table 3-11: Superelevation Rates for Low Speed Arterials and Collectors ( $e_{max} = 0.05$ )
- Table 3-12: Minimum Radii (feet) for Design Superelevation Rates Low Speed Local Roads ( $e_{max} = 0.05$ )

### 3.7.3 Superelevation Transition (superelevation runoffs plus tangent runoff)

- Definition
- Grade criteria
- Table 3-13: Superelevation Transition Slope Rates

### 3.7.4 Maximum Curvature/Minimum Radius

- The use of the maximum degree of curvature should be avoided when possible.
- References to superelevation tables in Section 3.7.2.
- [Incorporate Table 16 – 3: Minimum Centerline Radii for Residential Streets.](#)

### 3.7.5 Sight Distance on Horizontal Curves

- Figure 3-1: Horizontal Sight Line Offset Distances for Stopping Sight Distance on Horizontal Curves
- Figure 3-2: Diagram Illustrating Components for Determining Horizontal Sight Distance
- Table 3-14: Horizontal Curvature

### 3.7.6 Lane Widening on Curves

- Table 3-15: Calculated and Design Values for Traveled Way Widening on Open Highway Curves (Two-Lane Highways, One-Way or Two-Way)
- Table 3-16 Adjustments for Traveled Way Widening Values on Open Highway Curves (Two-Lane Highways, One-Way or Two-Way)

## 3.8 Vertical Alignment

### 3.8.1 Selecting Appropriate Vertical Alignment

- Criteria for selection of vertical alignment

### 3.8.2 Grades

- Table 3-17: Maximum Grades (in Percent)
- Figure 3-3: Critical Length Versus Upgrade

### 3.8.3 Vertical Curves

- Table 3-18: Maximum Change in Grade Without Using Vertical Curve

- Table 3-19: Rounded K Values for Minimum Lengths Vertical Curves (Stopping Sight Distance)
- Figure 3-4: Length of Crest Vertical Curve (Stopping Sight Distance)
- Table 3-20: Design Controls for Crest Vertical Curves (Passing Sight Distance)
- Figure 3-5: Length of Sag Vertical Curve (Open Road Conditions)

### 3.9 Cross Section Elements

- Introductory guidance on design of the cross section and use of context classification
- Guidance from 3.3.8.5 on coordinating land use and zoning practices and policy, and reference to Chapter 1: Planning and Land Development
- Reference to Chapter 4: Roadside Design

#### 3.9.1 Context-Based Design Criteria

- New tables summarizing design criteria for each context and functional classification.
- Freeways are summarized separately since there is limited distinction between context classifications

##### 3.9.1.1 Freeways

- Example Table:

Elements	Urban	Rural
Number of Lanes		
Travel Lane Width		
Auxiliary Lane Width		
Inside Shoulder Width		
Outside Shoulder Width		
Median Width without Barrier		
Median Width with Barrier		
Border Width		

### 3.9.1.2 Rural

- New Table: Cross Section Criteria for Natural (C1) and Rural (C2) Contexts
- New Table: Cross Section Criteria for Rural Town (C2T) Context
- Example Table:
  - If an element is required, a minimum dimension will be provided. If an element is not required, it will be listed as optional and/or include a 0' minimum dimension.

Elements	Local	Collector	Arterial
Number of Lanes			
Travel Lane Width			
Turn Lane Width			
Passing Lane Width			
Median/Inside Shoulder Width			
Outside Shoulder Width			
Sidewalk Width			
Shared Use Path Width			
Pedestrian Buffer			
Bicycle Facilities	Widths provided for different allowable facility types		
Border Width			
Border plus Bicycle Facility Width			
Median Width	Widths provided for different allowable median types		
Refuge Island Width			
Parking Width	Widths provided for different allowable parking types (e.g., parallel, angle) and buffers where needed (i.e., door zone)		

### 3.9.1.3 Suburban

- New Table: Cross Section Criteria for Suburban Residential (C3R) Context
- New Table: Cross Section Criteria for Suburban Commercial (C3C) Context

### 3.9.1.4 Urban

- New Table: Cross Section Criteria for Urban General (C4) Context
- New Table: Cross Section Criteria for Urban Center (C5) Context
- New Table: Cross Section Criteria for Urban Core (C6) Context
- Incorporate lane, median, and parking widths from Chapter 19: Traditional Neighborhood Development.
- Incorporate furniture and shy zone from Chapter 19: Traditional Neighborhood Development.

### 3.9.1.5 Changes in Typical Section

- Guidance on how to transition between different typical sections

#### 3.9.1.5.1 Context Classification Transition

- Discussion on transition zones
- Designing for context changes in space
  - Reference FDM 202.4 *Transition Zones* and Figure 202.4.2 Transition Zone from C1/C2 to C2T Context Classification
- Designing for context changes in time
  - Allowing for a “growable street design”

#### 3.9.1.5.2 Lane Deletions and Additions

- Reference to Intersection Design Section 3.11.2.1 Merging Maneuvers
- Guidance on advance warning for lane deletion
- Guidance on providing median separation for lane addition

#### 3.9.1.5.3 Preferential Lanes

- Define preferred lanes

- Reference to MUTCD, Chapter 3D for preferential lane markings
- Reference to Chapter 9: Bicycle Facilities

#### 3.9.1.5.4 Structures

- Introduction and reference to Table 3-22: Minimum Shoulder Widths for Flush Shoulder Rural Highways
- Guidance on continuation of cross section elements through the structure
- Guidance on placement and minimum distances for barrier walls on bridges to adequately separate sidewalk from the travel lane
- Reference to Chapter 17: Bridges and Other Structures
- Lateral Offset
  - Reference Chapter 4: Roadside Design
  - Structure support should be placed outside of the clear zone
- Vertical Clearance
  - **Reformat existing information into new table: Minimum Values for Vertical Clearance by Structure**

Structure	Minimum Vertical Clearance (feet)
Freeways and Arterials	
Streets and Highways	
Pedestrian or Shared Use Bridge over a Roadway	
Bridge over a Railroad	

- End Treatment
  - Reference Chapter 4: Roadside Design

### 3.9.2 Cross Slopes

#### 3.9.2.1 Traveled Way Cross Slope

- Minimums and Maximums for traveled way cross slope

#### 3.9.2.2 Shoulder Cross Slope

- Table 3-23: Shoulder Cross Slope (Percent)

### 3.9.2.3 Parking Cross Slope

- Reference 3.9.5.3 ADA Requirements
- Provide range for cross slopes
- Guidance on providing a bilevel sidewalk to mitigate the differences between the various cross section elements

### 3.9.2.4 Median Slopes

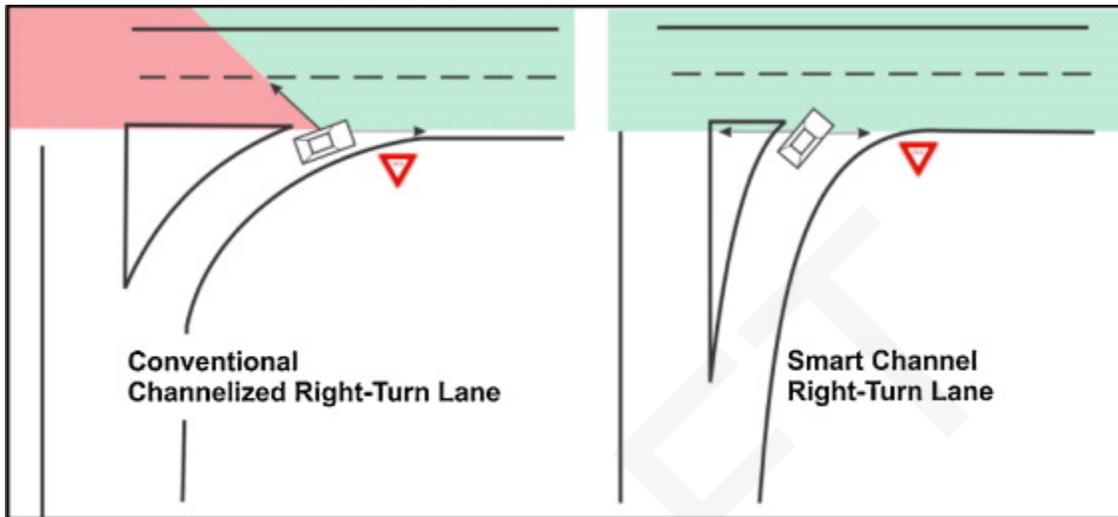
- Guidance for median slope and transition between median slope and the shoulder
- Recommended median cross slope and increasing median width to accommodate median depth requirements
- Longitudinal slope requirements

### 3.9.3 Islands

- Define island
- Figure 3-6: General Types and Shapes of Islands and Medians
- Conditions for preferred use of painted, flush, or traversable islands
- [Reference back to 3.9.1 for pedestrian refuge island criteria by context](#)
- Reference to AASHTO Green Book
- Reference to [MUTCD, Part 3](#)
- Reference to [FDM, Chapter 212 – Intersections for landscaping of islands](#)
- Reference to [AASHTO Roadside Design Guide](#) for additional landscaping of islands considering maintenance

### 3.9.3.1 Channelizing Islands

- Define channelizing island
- Figure 3-7: Channelization Island for Pedestrian Crossings (Curbed)
  - Update geometry in figure with smart channel, shown on the right below



- Figure 3-8: Details of Corner Island for Turning Roadways (Curbed)
- Figure 3-9: Details of Corner Island for Turning Roadways (Flush Shoulder)

### 3.9.3.2 Divisional Islands

- Define divisional island
- Recommended minimum and maximum widths
- Figure 3-10: Alignment for Divisional Islands at Intersections

### 3.9.3.3 Refuge Islands

- Minimum width for refuge island is 6 ft
- Figure 3-11: Pedestrian Refuge Island
- Figure 3-12: Pedestrian Crossing with Refuge Island (Yield Condition)
  - Update figure to include advance warning sign distance
- Figure 3-13: Pedestrian Crossing with Refuge Island (Stop Condition)
  - Update figure to include advance warning sign distance
- Table: Advance Placement Distances (update with Table #)
- Figure 3-14: Pedestrian Crossing in Refuge Island

- Reference to FDOT Standard Plans 522-002 Detectable Warnings and Sidewalk Curb Ramps

### **3.9.4 Curbs**

- Define purpose of curbs
- Figure 3-15: Standard Detail for FDOT Type F and E Curbs
  - Integrate FDM drawings for all curb types
- Type E and F curbs not to be used on facilities with design speeds of 45mph or greater
- Reference to Chapter 4: Roadside Design

### **3.9.5 Parking**

- On-street parking as a target speed self-enforcing measure

#### **3.9.5.1 Parallel Parking Lanes**

- Figure 3-16: Signing and Marking of Parallel Parking Spaces
- Reference to MUTCD for further details

#### **3.9.5.2 Angle Parking**

- Guidance for the provision of angled parking and safety conflicts
- Figure 3-17: Signing and Marking for 45 degree Forward-In Angle Parking
- Figure 3-18: Signing and Marking for 45 degree Reverse-In Angle Parking
- Update figures to include dimension widths

#### **3.9.5.3 ADA Requirements**

- Requirements for ADA Parking per:
  - 2006 Americans with Disabilities Act Standards for Transportation Facilities
  - 49 C.F.R 37.41 or 37.43
  - 2020 Florida Building Code, Accessibility (7th Edition) as required by 61G20-4.002
  - Reference to U.S. Access Board's Proposed Public Rights-of-Way Accessibility Guidelines, Section R309 On-Street Parking

- Reference to FDOT Standard Plans for Universal Symbol of Accessibility (Accessible Parking Pavement Marking) and the required signage designating accessible parking spaces.

### 3.9.6 Bridge Width

- Minimum widths for new two lane bridges based on average daily traffic

## 3.10 Access Control

- Define access control
- Modification of 3.3.8.2 General Criteria to give more detail about the location of access points, spacing of access points, and restrictions of maneuvers based on different context classifications. *Additional discussion with the Access Management group needed for modified guidance.*
- Reference to access spacing standards for state roads within FAC 14-97.003 Tables 1 and 2.
- Reference to 3.9 Cross Section Elements and specific context for minimum and maximum median width standards.

### 3.10.1 Limited Access Highways

- Define limited access highways (Reference FAC 14-97.002).
- Reference to *FDOT Multimodal Access Management Guidebook (2023)* Section 2.5 Driveway and Median Opening Spacing Standards for guidance on Access Class 1/Limited Access Facilities.
- Table 3-27: Access Control for All Limited Access Highways
- Restriction of maneuvers for limited access highways and strategies for access control.
- Reference to 3.11 Intersection Design for auxiliary lanes, grade separation, and other strategies.

### 3.10.2 Non-Limited Access Streets

- Update definition to include context classification
- Reference to 3.11 Intersection Design for auxiliary lanes for non-limited access streets (specifically for at grade intersections).

### 3.10.2.1 Rural

- Include modified *FDOT Multimodal Access Management Guidebook (2023)* Section 2.5, and modified Table 12 Access Management Standards for Controlled Access Facilities for C1 Natural, C2 Rural, and C2T Rural Town.

Access Class	Move ment Type	Multi modal Mix	Network Density	Median Type	Connection/ Driveway Spacing		Median Opening Spacing (feet)		Minimum Signal Spacing (feet)
					≤45 mph	>45 mph	Dire ctio nal	Full	
2									
3									
7									

### 3.10.2.2 Suburban

- Include modified *FDOT Multimodal Access Management Guidebook (2023)* Section 2.5, and modified Table 12 Access Management Standards for Controlled Access Facilities for C3R Suburban Residential and C3C Suburban Commercial.

Access Class	Move ment Type	Multi modal Mix	Network Density	Median Type	Connection/ Driveway Spacing		Median Opening Spacing (feet)		Minimum Signal Spacing (feet)
					≤45 mph	>45 mph	Dire ctio nal	Full	
3									
4									
5									

### 3.10.2.3 Urban

- Include modified *FDOT Multimodal Access Management Guidebook (2023)* Section 2.5, and modified Table 12 Access Management Standards for Controlled Access Facilities for C4 Urban General, C5 Urban Center, and C6 Urban Core.

Access Class	Move ment Type	Multi modal Mix	Network Density	Median Type	Connection/ Driveway Spacing		Median Opening Spacing (feet)		Minimum Signal Spacing (feet)
					≤45 mph	>45 mph	Dire ctio nal	Full	
5									
6									
7									

## 3.11 Intersection Design

- Introduction to intersection design and importance of safety considerations when designing intersections for different contexts.
- General criteria of intersection design.

### 3.11.1 Driveways

- Considerations for use of driveways in different contexts and traffic volumes.
- Reorganization of guidance relating to driveways into this section, including:
  - Restriction of driveway access points in certain contexts, such as areas of commercial development.
  - Exemptions from restrictions of driveway access based on traffic volume.

#### 3.11.1.1 Parking Restrictions

- Parking restrictions per F.S. 316.1945, which restricts parking near driveways, intersections, crosswalks, railroad crossings, fire hydrants, and fire stations.
- Table 3-26: Parking Restrictions for Driveways, Intersections and Mid-Block Crosswalks
- Discuss exemptions from parking restrictions on low-speed urban roadways
- Reference to Chapter 15: Speed Management (formerly Traffic Calming) for additional parking restrictions.

### 3.11.2 At Grade Intersections

- Define at grade intersections and the contexts they may exist within.

#### 3.11.2.1 Turning and Merging Maneuvers

- Reorganized items under auxiliary lanes that were relevant to at grade intersections within this section.
- Turning maneuvers on rural, suburban, and urban roadways.
- Table 3-29: Length of Taper for Use in Conditions with Full Width Speed Change Lanes.
- Figure 3-23: Termination of Merging Lanes.
- Table 3-34: Turn Lanes – Curbed and Uncurbed Medians.
- Figure 3-25: Auxiliary Lanes for Deceleration at Intersections (Turn Lanes).
- Reference to FAC 14-15.010, MUTCD.
- Reference to 3.9 Cross Section Elements for minimum criteria for turn lane widths.

#### 3.11.2.2 Turning Radii

- Examples of turning radii for different contexts.
- Reference to AASHTO Green Book.

#### 3.11.2.3 Minimum Curb Radii

- Table 19-1: Curb Return Radii.
- Illustrations/visuals for different minimum radii.

##### 3.11.2.3.1 Cross Section Correlation

- Considerations of changes in slope with prioritization for major roadway.

##### 3.11.2.3.2 Median Openings

- Reference to 3.10 Access Control for spacing requirements for rural, suburban, and urban contexts.
- Reference to Chapter 4: Roadside Design for median curb termination requirements.

### 3.11.2.3.3 Channelization

- Define channelization of at grade intersections.
- Reference to 3.9 Cross Section Elements – Islands section.

### 3.11.2.3.4 Alternative Intersections

- Provide examples of alternative intersections for different contexts, including guidance about roundabouts from existing content, displaced left turn, restricted crossing U-turn, etc.

## 3.11.3 Turning Roadways at Intersections

- Design exceptions for turning roadways at intersections.

### 3.11.3.1 Design Speed

- Turning roadways with design speeds in excess of 40 mph shall be designed in accordance with the requirements for through roadways.
- Variable design speed may be used to establish cross section and alignment criteria for turning roadways.

### 3.11.3.2 Horizontal Alignment

- Table 3-35: Superelevation Rates for Curves at Intersections
- Table 3-36: Maximum Rate of Change in Pavement Edge Elevation for Curves at Intersections
- Table 3-37: Maximum Algebraic Difference in Pavement Cross Slope at Turning Roadway Terminals
- Reference to AASHTO Green Book for additional guidance on horizontal alignment of turning roadways.

### 3.11.3.3 Vertical Alignment

- The length of vertical curves shall be no less than necessary to provide minimum stopping distance. Reference to Table 3-4: Minimum Stopping Sight Distances.
- Reference to AASHTO Green Book for additional guidance on vertical alignment of turning roadways.

### 3.11.3.4 Cross Section Elements

- List of cross section design exception elements for turning roadways.

- Table 3-38: Derived Pavements Widths for Turning Roadways for Different Design Vehicles

### 3.11.4 Interchanges

- Merging maneuvers integrated into criteria for entrance and exit ramps for limited access highways.
- Discuss grade separation in different contexts and strategies to address changes in context of the merging roadway.

#### 3.11.4.1 Acceleration and Deceleration Lanes

- Reorganized items under auxiliary lanes that were relevant to Interchanges within this section.
- Length requirements for acceleration and deceleration lanes in the following tables (modified for Limited Access Highways):
  - Reference to Table 3-29: Length of Taper For Use in Conditions with Full Width Speed Change Lanes for the merging taper following the acceleration lane.
  - Table 3-30: Design Lengths of Speed Change Lanes Flat Grades - 3 Percent or Less
  - Table 3-31: Ratio of Length of Speed Change Lane on Grade to Length on Level
  - Table 3-32: Minimum Acceleration Lengths for Entrance Terminals
  - Table 3-33: Minimum Deceleration Lengths for Exit Terminals
  - Figure 3-24: Entrance for Deceleration Lane
- Reference to pavement width and cross slopes in 3.9.1.1 Cross Section Elements Freeways.

#### 3.11.4.2 Auxiliary Lanes

- Define auxiliary lanes within context of interchanges (not a regular turn lane or merging lane).
  - New figure to illustrate definition of auxiliary lanes.
- Reference to FDM 211.12.2 Interchange Connections for auxiliary lane design.
  - Successive auxiliary lanes less than 1,500 feet apart are prohibited. Auxiliary lanes may continue through an interchange to avoid this condition.

### 3.11.5 Clear Zones

- Define clear zones and potential need for them at intersections.
- Reference to Chapter 4: Roadside Design for minimum standards.

## 3.12 Other Design Factors

- The following factors will be addressed in this section:
  - Minimum Right of Way for Two-Lane Roads
  - [Local Cul-de-sac and Dead End Streets with ADT < 400 and Length < 600ft](#)
- Reference to other chapters for:
  - Chapter 8: Pedestrian Facilities
  - Chapter 9: Bicycle Facilities
  - Chapter 13: Public Transit
  - Chapter 14: Design Exceptions and Variations
  - Chapter 15: Speed Management (formerly Traffic Calming)
  - Chapter 17: Bridges and Other Structures Design