Florida Greenbook

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

Sub-committee Meeting

Chapter 8 – Pedestrian Facilities

Agenda

February 3, 2026
4:00 PM – 5:00 PM

Virtual on Microsoft Teams
MS Teams Link

4:00 PM	Welcome and Introductions	Derwood Sheppard
4:10 PM	Chapter 8 Draft Review (17th Edition)	Jacqui Morris, Kittelson Staff
4:30 PM	Sub-Committee Discussion	Chapter 3 Sub-Committee
4:40 PM	Action Items and Next Steps	Jacqui Morris, Kittelson Staff
4:50 PM	Closing remarks • Public Comment	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 8 – Pedestrian Facilities

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Public Meeting

FDOT

Welcome & Introductions

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4:50 PM	Closing remarks • Public Comment	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.

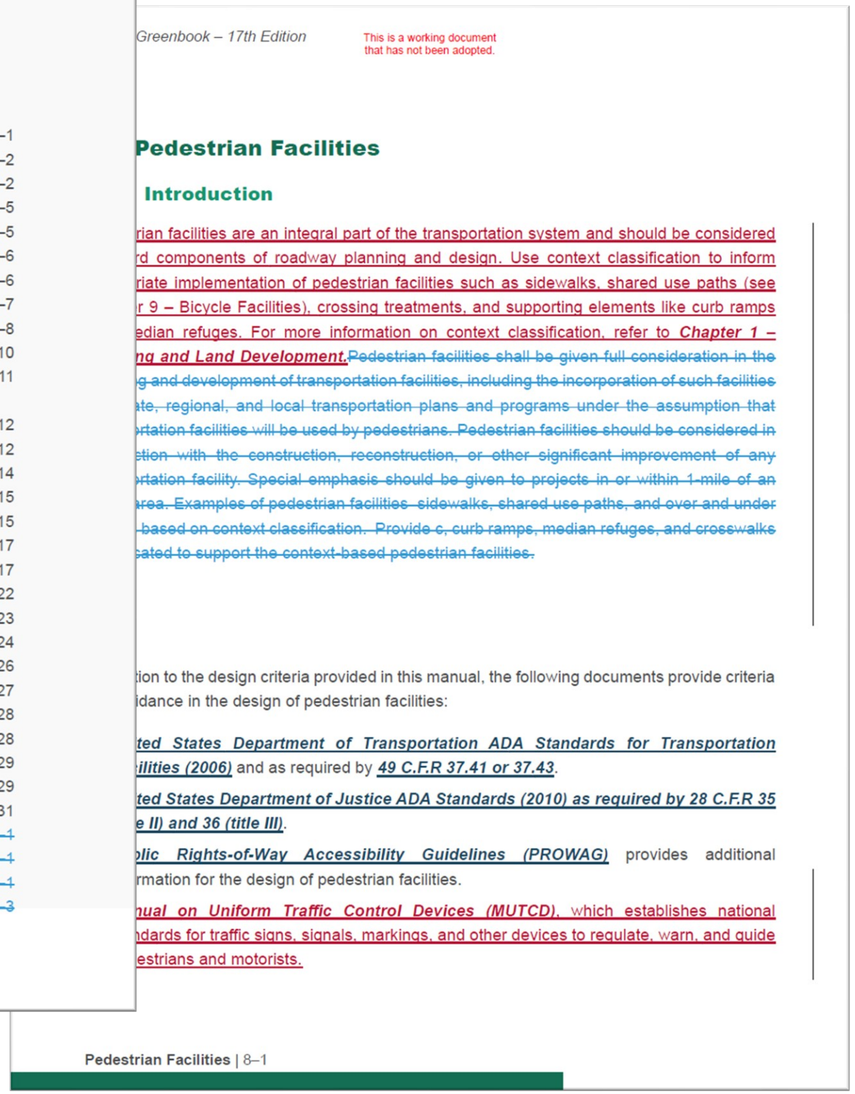
Raise your virtual hand to ask a live question.

Chapter 8 - Review

This is a working document that has not been adopted.

Chapter 8

Pedestrian Facilities



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Pedestrian Facilities

Introduction

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17th Edition

Subcommittee Discussion

General Discussion

Open for public comment

Online Attendees

Microsoft Teams 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.

Thank you for attending!

Contact

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

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FDOT

Florida Greenbook

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

Sub-committee Meeting

Chapter 8 – Pedestrian Facilities

Agenda

February 3, 2026
4:00 PM – 5:00 PM

Virtual on Microsoft Teams

Attendees

Modeline Acreus
Rafael Aguilar
Evana Ahmed
Mo Ansari
Daniel Ashworth
Alex Barrero
Robert Behar
Richard Ceska
Colleen Crigger
Dana Crosby
Kenneth Dudley
Leo Francis
Andres (Andy) Garganta
Ramon Gavarrete
Nathan George
Andrew Gray
Sarah Griffin
Michael Grzelka
Laura Hardwicke
Gene Howerton
Chad Johnson
Ed Kestory
William Leidy
Kenneth Leeming
Min-Tang Li
Naresh Machavarapu
Erica McCaughey
Rick Morrow
Dilip Mundkur
Lori Palaio
Terra Parish
John Patrick
Jarad Patsch
Douglas Reed
Joan Rice
Amy Serles
Shad Smith
Kyle Simpson
Miguel Soria
Brian Stanger
Andrew Stastny
Margie Tamblyn
Allan Urbonas
Caitlin Ward

Florida Greenbook

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

	Barry Westmark Chase Wilkinson	Jacqueline (Jacqui) Morris Allie Caldwell Jennifer Musselman DeWayne Carver

Topic		
1	Welcome and Introduction [Slide #1 – 3]	Jacqui Morris
	Jaqui Morris introduced herself and welcomed everyone. Jacqui invited committee members and FDOT technical staff to introduce themselves.	
2	Chapter 8 Review (17th Edition) [Slide #4]	Jacqui Morris, Kittelson Staff
	• DeWayne shared an overview of proposed Chapter 8 changes • Language strengthened in the introduction • Updated references to MUTCD • DeWayne requested committee members pay particular attention to new requirements to may sure they don't create undue burden • Introduced concept of sidewalk zones with buffer, pedestrian, and frontage zones • DeWayne highlighted areas where criteria is located in other chapters and therefore streamlined in Chapter 8, such as shared use paths (Chapter 9), barrier separation (Chapter 4), and sight distance (Chapter 3) • Additional guidance added on shared streets based on context • Additional guidance on how to minimize conflicts in different contexts • Refined guidance on where grade separated crossings may be appropriate • Option to provide a graphic to clarify drop off hazard criteria • Clarification on the definition of a crosswalk • Additional guidance on how midblock crosswalks are handled in different contexts • DeWayne asked the committee if the terms "turnout" and "urban flared turnout" are still used	

	• DeWayne said that the chapter is generally written with *should* and *shall* language	
4	Sub-Committee Discussion [Slide #5]	Chapter 13 Sub-Committee

	• Andy asked if there is any discussion on clear unobstructed sidewalk width to the back of curb, a monolithic sidewalk
	  ○ DeWayne clarified that the chapter cover pedestrian clear space more generally, but does not cover monolithic sidewalk
	  ○ Andy suggested including as an option in constrained areas
	  ○ Jacqui suggested doing additional research on the topic
	• Andy asked for clarification if sidewalk sloped is measured perpendicular to the wheel chair path in curb ramps
	  ○ DeWayne shared the figures showing the perpendicular slope
	• Andy asked if landscape obstructions were covered in Chapter 8
	  ○ DeWayne shared that the team will consider and find the right place for the guidance
	• Allan shred that turnouts are called paved and graded driveways. Urban flared driveways are usually called concrete flared driveway
	• Allan shared that specs generally refer to everything as driveways except in section 210 - reworking limerock base
	• Andy and Allan shared that the minimizing conflict table is helpful
	• Andy asked if there is guidance on crosswalk placement and sight distance
	  ○ DeWayne clarified that sight distance is covered in Chapter 3
	• Jacqui clarified that another meeting will be scheduled to review additional feedback
	• Andy asked if there was anything to address conflicts between pedestrians and railroads
	  ○ Jacqui shared this could be considered in Chapter 7
	  ○ DeWayne mentioned there is some guidance in Chapter 8
	• Jacqui asked if four weeks was enough time to review the material	

5	Closing Remarks Public Comment [Slide #6-7]	Jacqui Morris
	Jacqui provided a reminder that this is a public meeting and provided an opportunity for public comment.	

- Rafael asked if it was possible to reference the FDM if the criteria is the same.
    - Jacqui clarified that as a rule document, criteria must be in the Greenbook to be considered a requirement, it cannot be referenced
- Rafael asked for guidance on crosswalk placement from edge of parallel travel way. A two foot minimum is generally considered but it is not in the Greenbook.
- Rafael asked if LAP projects can use FDM.
- Laura asked if the committee was interested in having the vision zero emphasis area for the ped/bike safety coalition review the chapter.
- Laura shared they often get pushback when requested wider curb ramps. The Greenbook does not provide enough justification and trade-offs.
- Laura asked if any changes are needed based on the increasing size of vehicles and hood heights such as stop bar distances
- Laura suggested Table 8 include distance between marked crossings
- Caitlin shared that Table 8 implies RRFBs can be used on higher speed roads than is allowed.
- Caitlin mentioned that certain pedestrian signage is only required on multi-lane roads
- Jarad asked for clarification on the requirement for stop bars before crosswalks and how that works with raised crosswalks

Jacqui thanked everyone for their time and participation.

Meeting adjourned at 5:08 p.m.

Chapter 8

Pedestrian Facilities

This is a working document
that has not been adopted.

Figures

This is a working document that has not been adopted.

8 Pedestrian Facilities

8.1 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.~~

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.

The ***2023 Florida Building Code, Accessibility, 8th Edition*** as required by ***61G20-4.002*** contains ADA requirements for accessibility to sites, facilities, buildings, and elements by people with disabilities.

Each transportation agency responsible for a system of streets and highways should establish and maintain a program for implementing pedestrian facilities, and for maintaining existing pedestrian facilities.

8.2 Types of Pedestrian Facilities

There are several ways in which pedestrians can be ~~accommodated~~ designed for in the public right of way, including sidewalks, shared use paths, and shared streets.

8.2.1 Sidewalks

Sidewalks are walkways parallel to the roadway and designed for use by pedestrians. Align the design of sidewalks with the associated roadway's context classification. Where context classification has not yet been assigned, provide s~~S~~idewalks ~~should be provided~~ along both sides of roadways that are in or within 1-mile of an urban area.

If sidewalks are constructed on the approaches to bridges, they should be continued across the structure. If continuous sidewalks ~~are~~ can be constructed on only one side of the street, pedestrians should be provided access to facilities and services located on the opposite side of the street. For more information on crossings, refer to **Section 8.7.** Newly constructed, reconstructed, or altered sidewalks shall be accessible to and usable by people of all ages and abilities.~~persons with disabilities.~~

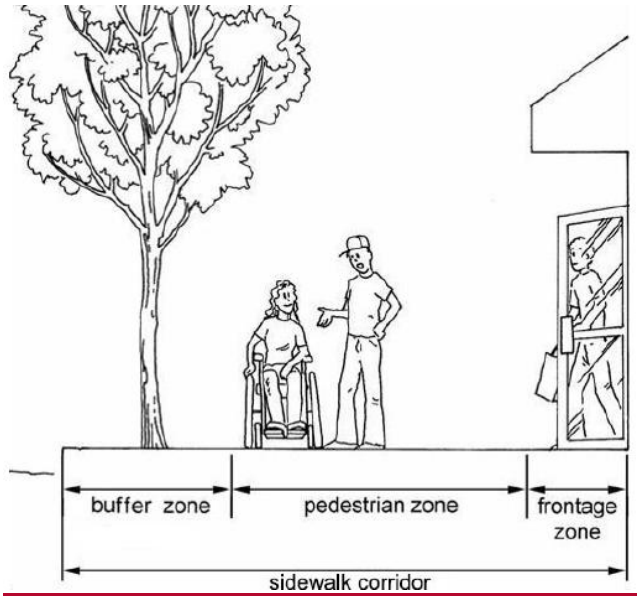
Where existing physical constraints make it impracticable for altered elements, spaces, or facilities to fully comply with the requirements for new construction, compliance is required to the extent practicable within the scope of the project. Existing physical constraints include, but are not limited to, underlying terrain, right-of-way availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.

8.2.1.1 Sidewalk Width

~~The minimum width of a sidewalk shall be 5 feet on both curb and gutter, and flush shoulder roadways. The minimum separation for a 5-foot sidewalk from the back of curb is 2 feet. If the sidewalk is located adjacent to the curb, the minimum width of sidewalk is 6 feet.~~ ***Chapter 3 – Geometric Design*** includes criteria for sidewalk width based on context classification. The

sidewalk zones shown in **Figure 8-1** provide a useful way to plan and allocate sidewalk space, with a buffer zone adjacent to the roadway, a pedestrian zone for movement, and a frontage 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 or dining, should be allocated to either the buffer zone or frontage zone to maintain a free and clear pedestrian zone for pedestrian movement. More information about the role and design of the buffer zone is found in **Section 8.3.2.2**.

Figure 8-1 Sidewalk Zones and Pedestrian Access Route



Option to recreate in FGB style

Provide a minimum 1-foot wide level graded area with a maximum slope of 1:6 along both sides of the sidewalk, unless ~~. This would not apply to the side of~~ the sidewalk is located immediately adjacent to a curb~~,~~ or structure~~, or the right of way line~~. Avoid placing the edge of the sidewalk at the right of way line to maintain space for future utilities, drainage needs, and lateral clearance for maintenance. ~~Wider sidewalks should be considered in Central Business Districts and in areas where heavy two-way pedestrian traffic is expected.~~

~~A 5-foot wide (minimum) sidewalk that connects a transit stop or facility with an existing sidewalk or shared use path shall be included to comply with ADA accessibility standards. **Chapter 13 – Transit** provides illustrations of the connection between the sidewalk and transit facility.~~For new construction and reconstructed roadways, longitudinal grades on sidewalks or shared use paths shall not exceed 5%, unless accessible ramps and landings are provided. In roadway right-of-

way, hHowever, in a roadway right of way, the grade of sidewalks or shared use paths may follow is permitted to equal the general grade established for the adjacent street or highway, even if it exceeds 5%. There should be enough sidewalk or path cross slope to allow for adequate drainage, however the maximum shall be no more than 2% to comply with ADA requirements.

Where existing physical constraints make it impracticable for altered elements, spaces, or facilities to fully comply with the requirements for new construction, compliance is required to the extent practicable within the scope of the project. Existing physical constraints include, but are not limited to, underlying terrain, right-of-way availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.

Edge drop-offs should be avoided. When drop-offs cannot be avoided, they should be shielded as discussed in Section F8.6, Drop-Off Hazards for Pedestrians.

8.2.1.2 Transit Connections

A 5-foot wide (minimum) sidewalk that connects a transit stop or facility with an existing sidewalk or shared use path shall be included to comply with ADA accessibility standards. ***Chapter 13 – Transit*** provides illustrations of the connection between the sidewalk and transit facility.

8.2.1.3 Project Termini

Particular attention shall be given to pedestrian integrationaccommodations at the termini of each project. If full accommodations provisions cannot be provided due to the limited scope or phasing of a roadway project or an existing sidewalk is not present at the termini, consider extending the sidewalk to the next appropriate pedestrian crossing or access point.an extension of the sidewalk to the next appropriate pedestrian crossing or access point should be considered. If pedestrian facilities are provided, they shall be connected with facilities (e.g., sidewalks, shared use path, and crosswalks on the adjoining projects).

8.2.1.4 Utility Pole Placement

For new construction and reconstructed roadways, grades on sidewalks or shared use paths shall not exceed 5%, unless accessible ramps and landings are provided. However, in a roadway right of way, the grade of sidewalks or shared use paths is permitted to equal the general grade established for the adjacent street or highway. There should be enough sidewalk or path cross slope to allow for adequate drainage, however the maximum shall be no more than 2% to comply with ADA requirements.

Where existing physical constraints make it impracticable for altered elements, spaces, or facilities to fully comply with the requirements for new construction, compliance is required to the

~~extent practicable within the scope of the project. Existing physical constraints include, but are not limited to, underlying terrain, right-of-way availability, underground structures, adjacent developed facilities, drainage, or the presence of a notable natural or historic feature.~~

The location of new poles or relocated poles shall provide at least 48" minimum unobstructed sidewalk width.

8.2.1.5 Driveways and Turnouts

Evaluate existing driveways and turnouts for compliance ~~to~~ with ADA requirements. ~~Nonconforming driveways are not required to be upgraded if it is not feasible within the scope of the project.~~

~~Edge drop-offs should be avoided. When drop-offs cannot be avoided, they should be shielded as discussed in Section F, Drop-Off Hazards for Pedestrians.~~

~~For additional information concerning the design of sidewalks, refer to **Section 3.3.7.4** of **Chapter 3 – Geometric Design**.~~

8.2.2 Shared Use Paths

Shared use p~~P~~aths are ~~usually~~ set back from the roadway and separated by a green area, ditch, swale~~s~~, or trees. They~~Shared use paths~~ are intended for ~~the~~ use by both pedestrians and bicyclists and they shall be accessible. On rural or suburban roadways, particularly those classified as C1 (Natural), C2 (Rural), or C3R (Suburban Residential), a shared ~~-~~use path adjacent to the main roadway may be used in place of a sidewalk. For ~~additional information concerning the design of~~ shared ~~-~~use path~~s~~ design criteria, refer to ***Chapter 9 – Bicycle Facilities***.

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.

8.2.4 Shoulders

Highway shoulders are not intended for frequent use by pedestrians, but do accommodate occasional pedestrian traffic. Highway shoulders often have cross slopes which exceed 2%; consequently, they are not considered or expected to fully meet ADA criteria. For shoulder design criteria, refer to ***Chapter 3 – Geometric Design***.

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:

- Sidewalks and/or shared use paths parallel to the roadway
- Marked pedestrian crossings
- Raised median or refuge islands
- Pedestrian signal features such as pedestrian signal heads and detectors
- Transit stops and shelters

In some situations, it may be possible to eliminate a vehicle-pedestrian conflict through close coordination with the planning of pedestrian facilities and activity outside of the streethighway right of way. Care should be exercised to ensure the elimination of a given conflict point does not transfer the problem to a different location. Any effort to minimize or eliminate conflict points shouldmust consider the mobility needs of the pedestrian. The desired travel path should not be severed and the number of required crossing points and/or walking distances should not be significantly increased. Some crossings should be redesigned rather than eliminated or relocated.

This is a working document that has not been adopted.

8.3.1 General Needs

Minimizing vehicle-pedestrian conflicts can be accomplished by providing adequate horizontal, physical, or vertical (primarily for crossings) separation between the roadway and the pedestrian facility. Examples of context-based design elements that minimize conflicts are summarized in **Table 8-1**.

Committee: Let us know if there are additional strategies you'd like added to the table you have classification.

Table 8-1. Strategies to Minimize Pedestrian Conflicts

Context	Strategies to Minimize Conflicts
C5 Urban Center & C6 Urban Core	• Select appropriate design speed based on the expected level of multimodal activity. See **Chapter 3 – Geometric Design** for more information. • Wide sidewalks separate users and integrate activities (e.g., outdoor dining). • Medians, refuge islands, and curb extensions reduce crossing exposure. • Signal timing strategies such as leading pedestrian intervals, protected left-turn phasing, and right turn on red restrictions can separate users in time. • Right turn lanes should be avoided when possible.
C4 Urban General	• Select appropriate design speed based on the expected level of multimodal activity. • Sidewalks separate modes. • Marked crossings define predictable conflict points. • Medians and refuge islands reduce crossing exposure. • Signal timing strategies such as leading pedestrian intervals, protected left-turn phasing, and right turn on red restrictions can separate users in time. • Right turn auxiliary lanes should be avoided when possible.
C3 Suburban	• Sidewalks separate pedestrians from traffic. Shared use paths may be appropriate but may introduce conflicts with bicyclists.

	• Marked midblock crosswalks break up long blocks for speed management and also provide expected crossing points for pedestrians. • Channelization devices encourage pedestrians to cross at expected locations. • Consider additional crossing treatments, such as Pedestrian Hybrid Beacons (PHBs) and Rectangular Rapid Flashing Beacons (RRFBs), in higher speed environments.
C1 Natural & C2 Rural	• Shared use paths separate recreational pedestrians/bicyclists from high-speed traffic. • Crossings at key points reduce unexpected pedestrian entry. • Medians shorten exposure distance on higher -speed roads.

8.3.2 Horizontal Separation

Where pedestrians and motor vehicles operate adjacent to one another, the preferred design is to provide a physically independent pedestrian facility. Horizontal separation may include a raised curb, planter or parked-car buffer, or contrasting materials ~~contrast~~ to demarcate the pedestrian zone.

~~The development of independent systems for pedestrian and motor vehicular traffic is the preferred method for providing adequate horizontal separation.~~

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.

New sidewalks should be placed as far from the roadway as practical in the following sequence of desirability:

1. As near the right of way line as possible. ~~(~~Ideally, 3 feet of buffer ~~width~~ should be provided behind the sidewalk for above ground utilities~~.)~~.
2. Outside of the clear zone.
3. Sufficiently off-set from the curb to allow for the placement of street trees, signs, utilities, parking meters, benches, or other street furniture ~~outside of the sidewalk~~without

encroaching on the pedestrian zone in urban ~~locations (e.g., town center, business, or entertainment district)~~contexts. See **Section 8.3.2.2** for buffer width guidance.

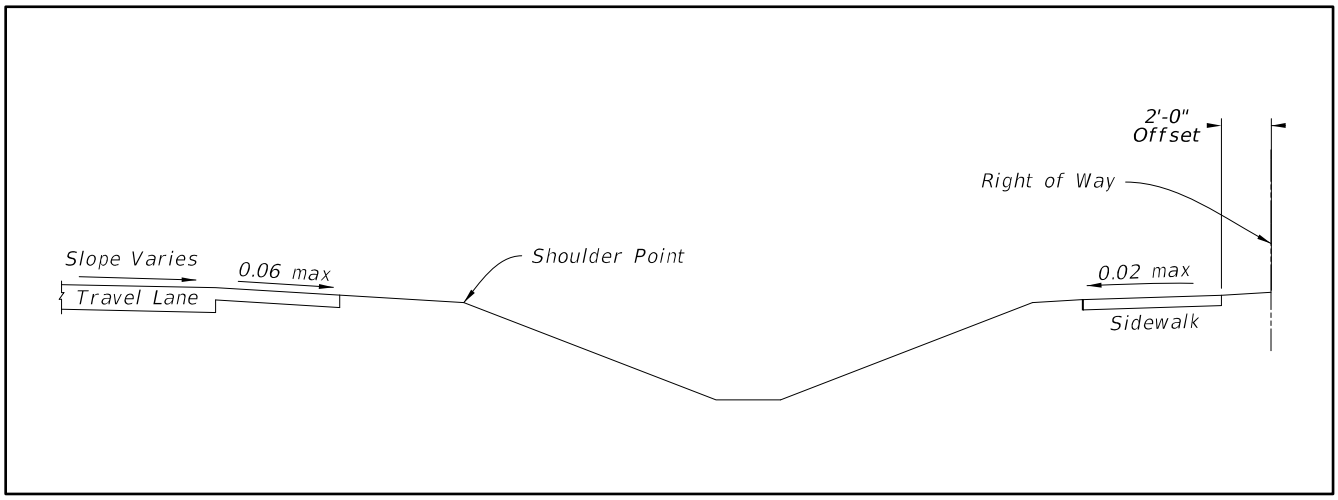
4. Five feet from the shoulder point on flush shoulder ~~roadways~~streets.
5. At the grass shoulder point of flush shoulder roadways.

Figure 8 – ~~1~~2 Shoulder Point with Sidewalk provides an illustration of the location of the shoulder point.

On arterial or collector roadways, sidewalks shall not be constructed directly adjacent to roadway pavement unless a curb, on-street parking, or other physical barrier is provided to separate pedestrians from traffic. Nearing intersections, the sidewalk should be transitioned as necessary to provide a more functional crossing location that also meets driver's expectation. Further guidance on the placement of stop or yield lines and crosswalks is provided in the ***MUTCD, Part 3***.

Figure 8-2 Shoulder Point with Sidewalk

[Update the graphic to show 3' behind the sidewalk for above utilities, not 2'. As indicated in 8.3.2.1.1.]



~~8.3.2.1~~8.3.2.2 Buffer Widths

Providing a buffer can improve pedestrian safety and enhance the overall walking experience. Buffer width is defined as the space between the sidewalk and the edge of traveled way. ~~On-street parking or bike lanes can also act as an additional buffer.~~ The buffer may include street trees, utility poles, street furniture, on-street parking, and bicycle lanes. Buffer width behind the

curb can facilitate driveway ramps and sidewalk cross-slope requirements as well. The planting strip or buffer strip should be 6 feet where practical to eliminate the need to narrow or reroute sidewalks around driveways. Minimum recommended total buffer widths are based on the speed of the roadway and shown in Error! Reference source not found.. Provide a minimum 2-foot buffer behind curbs for lateral offset and utilities, with a wider buffer behind the curb if needed. AASHTO recommends a minimum width of 6.5 feet behind the curb if street trees are to be accommodated. The buffer behind the curb can be an unpaved space or can be integrated into a wider sidewalk. Where on-street parking is provided, the buffer is customarily paved to accommodate access to the parked vehicle. Where there is no parking, an unpaved or planted buffer may be more appropriate to delineate the buffer space between the street and sidewalk. With this wider buffer strip, the sidewalk is placed far enough back so that the driveway slope does not have to encroach into the sidewalk

Additional guidance on buffer widths can be found in ***Chapter 3 – Geometric Design*** and in the ***AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities***.

8.3.3 Other Considerations

When designing urban highways, the following measures may be considered to help increase the safe and efficient operation of the highway for pedestrians:

- Use narrower lanes and introduce raised medians to provide pedestrian refuge areas
- Provide pedestrian signal features and detectors
- Prohibit right turn on red
- Control, reduce, or eliminate left and/or right turns
- Prohibit free flow right turn movements

Reduce the number of la

-

8.4 Barrier Separation

Barriers may be used to assist in the separation of motor vehicular and pedestrian traffic, particularly where higher speeds, volumes, or constrained rights-of-way present increased safety concerns. Additional guidance on the selection, placement, and design of barriers for pedestrian protection can be found in ***Chapter 4 - Roadside Design***.

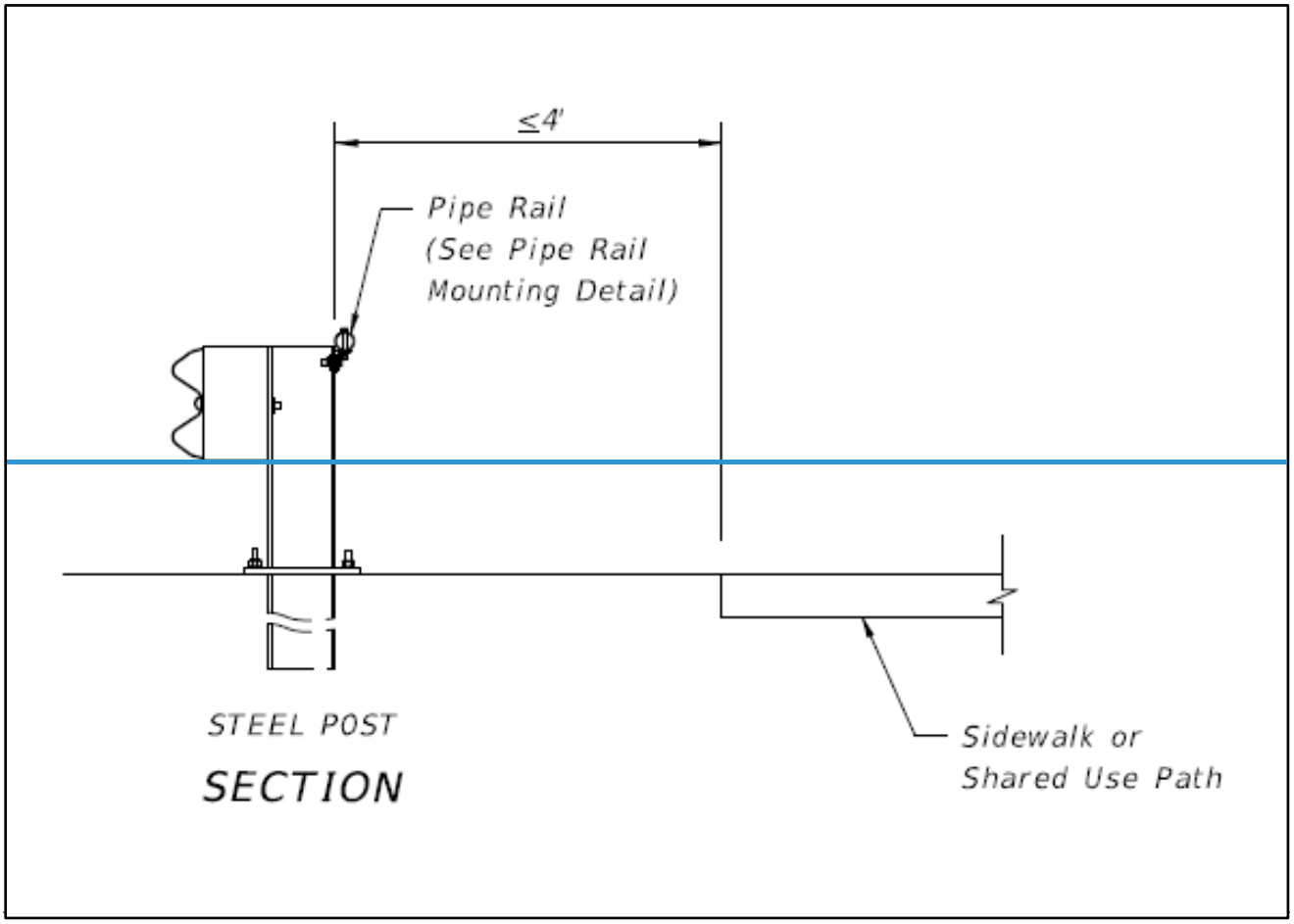
8.4.1 Longitudinal Barriers

Longitudinal barriers such as guardrails, rigid barriers, and bridge railings are designed primarily to redirect errant vehicles away from roadside hazards. These barriers can also be used to ~~provide valuable protection of~~protect pedestrian facilities from out-of-control ~~out-of-control~~ vehicles.

~~Where adequate horizontal separation is not feasible, or where there is a significant hazard from out-of-control vehicles, longitudinal barriers may be utilized. If electing to use barriers, special consideration should be made to ensure proper sight distance near driveways and intersections is maintained.~~ See ***Chapter 4 – Roadside Design*** ~~, **Figure 4 – 8 Location of Guardrail**~~ for information on the correct placement of a sidewalk in conjunction with a guardrail.

~~When a new sidewalk or shared use path is within 4 feet of the back of a guardrail with steel posts, a pipe rail shall be installed on the back of the post. For a guardrail with timber posts, the bolt ends shall be trimmed flush with the post or recessed. See **Figure 8 – 2 Guardrail with Pipe Rail Detail** for an illustration of when a pipe rail is needed. Additional information on the design of guardrails adjacent to a sidewalk or shared use path can be found in the FDOT ***Standard Plans***.~~

~~Figure 8-2 Guardrail with Pipe Rail Detail~~



8.4.2 Fencing, Pedestrian Channelization Devices or Landscaping

Fencing, pedestrian channelization devices, or landscape features may be used to discourage pedestrian access to the roadway and to guide pedestrian traffic to appropriate crossing points. ~~aid in channeling pedestrian traffic to the proper crossing points.~~ These elements should not be considered a substitute for longitudinal barriers~~,~~ but may be used in conjunction with redirection devices. Their application should be limited to locations where pedestrian activity outside designated crossings poses significant safety risks. Fencing and channelization are generally not appropriate in urban contexts (C4, C5, C6) or in rural town settings.

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~~

~~the traffic volume on the roadway is at or near capacity or where speeds are high. Overpasses or underpasses may be justified at major pedestrian generators such as schools, shopping centers, sports and amusement facilities, transit centers, commercial buildings, parks and playgrounds, hospitals, and parking facilities.~~

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.

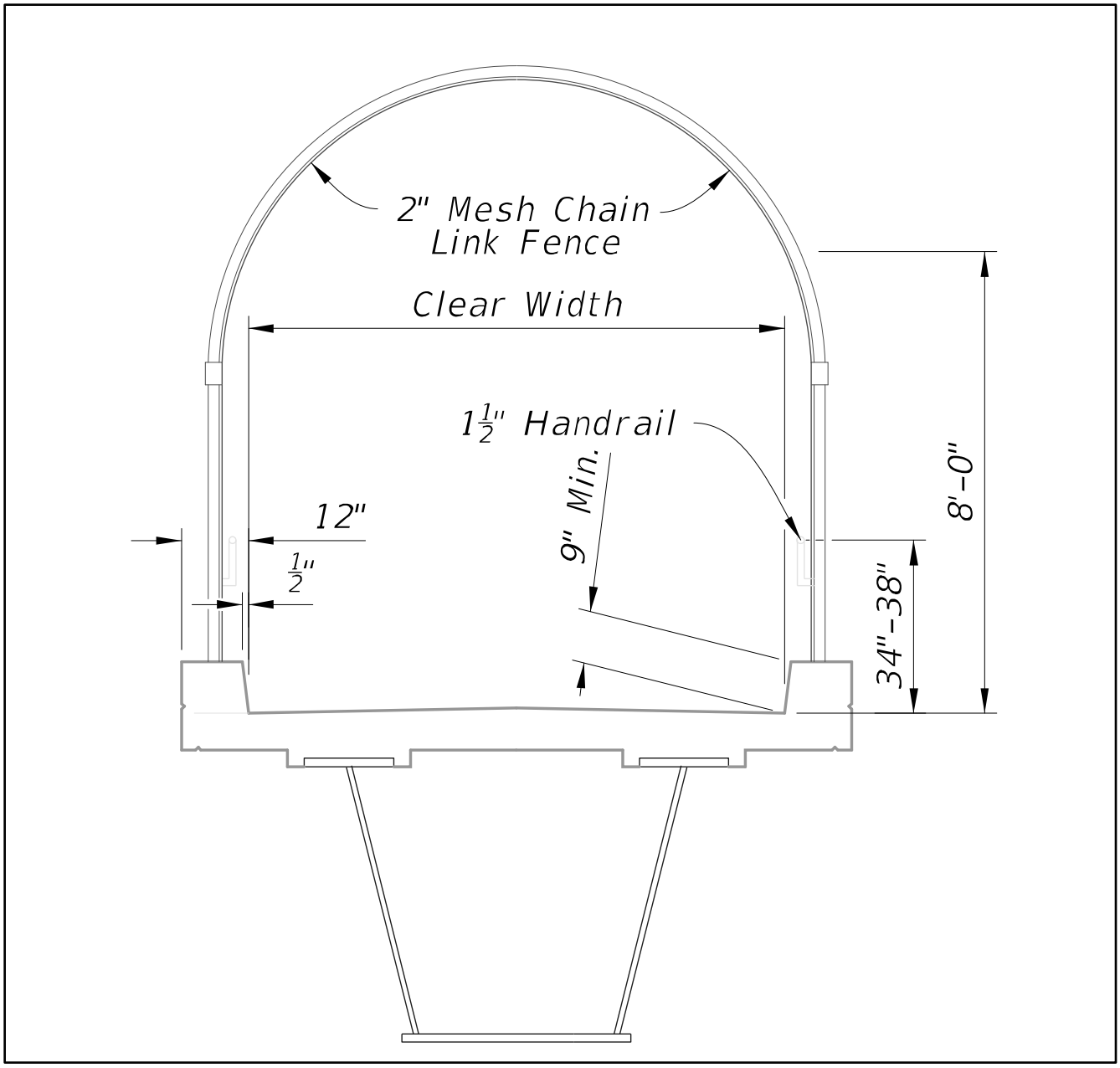
In urban contexts, overpasses and underpasses should generally be avoided, except where they directly serve adjacent land uses (e.g., a bridge between a parking structure and the building it serves).

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~~8~~ feet. However, if the contiguous sidewalk or path is greater than 12~~8~~ 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.

~~The~~ FDOT ***Structures Manual - Volume 1 - Structures Design Guidelines (SDG), Section 10*** provide**s** additional guidance on engineered steel and concrete pedestrian bridges.

Figure 8-3 Pedestrian Bridge Typical Section

[Redraw dimensions to show where the 8’ is capped]



Notes:

1. Pedestrian handrails may be required. See the ***2006 Americans with Disabilities Act Standards for Transportation Facilities***.
2. Other superstructure configurations may be used provided an 8 ft. minimum headroom is maintained.

8.5.1 Overpasses

Pedestrian overpasses are typically bridge structures over major roadways or railroads. Overpasses should provide elevator access if they are not designed to provide accessible ramps with compliant slopes, level landings, and handrails on both sides. Bridges over roadways should be covered or screened to reduce the likelihood of objects being dropped or thrown below. The

area adjacent to overpasses may be fenced to prevent unsafe crossings and to channel pedestrians to the overpass structure.

8.5.2 Underpasses

Pedestrian underpasses or tunnels perform the same function as overpasses. Their use is convenient when the roadway is elevated above the surrounding terrain.

Underpasses should be adequately maintained to reduce potential problems within lighting, cleaning, policing, and flooding and to maximize safety. Proper lighting is especially critical to enhance visibility, deter crime, and increase user comfort at all times of day. The area adjacent to underpasses may be fenced to prevent unsafe crossings and to channel pedestrians to the underpass structure.

Refer to ***Chapter 6 – Lighting*** for criteria on lighting in underpasses.

8.6 Drop-Off Hazards for Pedestrians

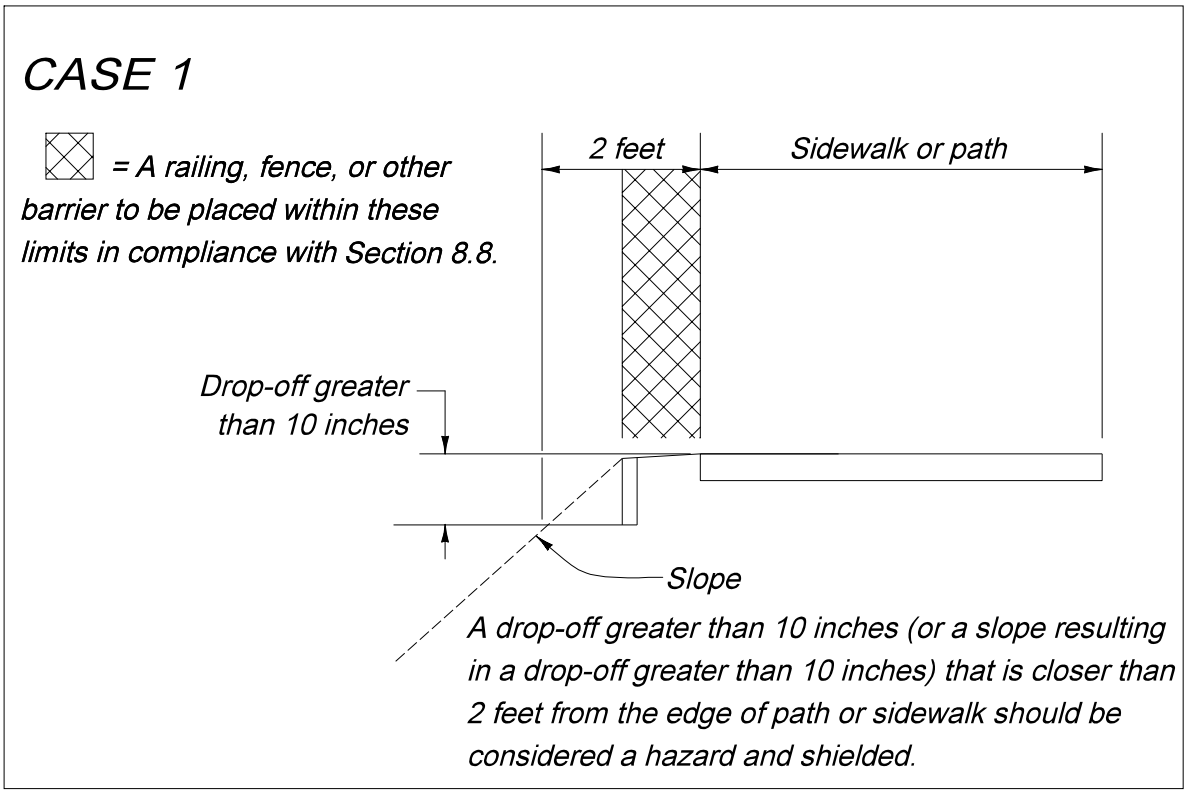
Drop-off hazards are defined as steep or abrupt downward slopes that can be perilous to pedestrians and bicyclists. Consider shielding any drop-off determined to be a hazard. Care should be taken when using pedestrian/bicycle railings or fencing near intersections or driveways as they could obstruct the driver's line of sight. To reduce the need for railings as a sidewalk or shared use path approaches an intersection, consider extending cross drains and side drains to minimize drop-offs.

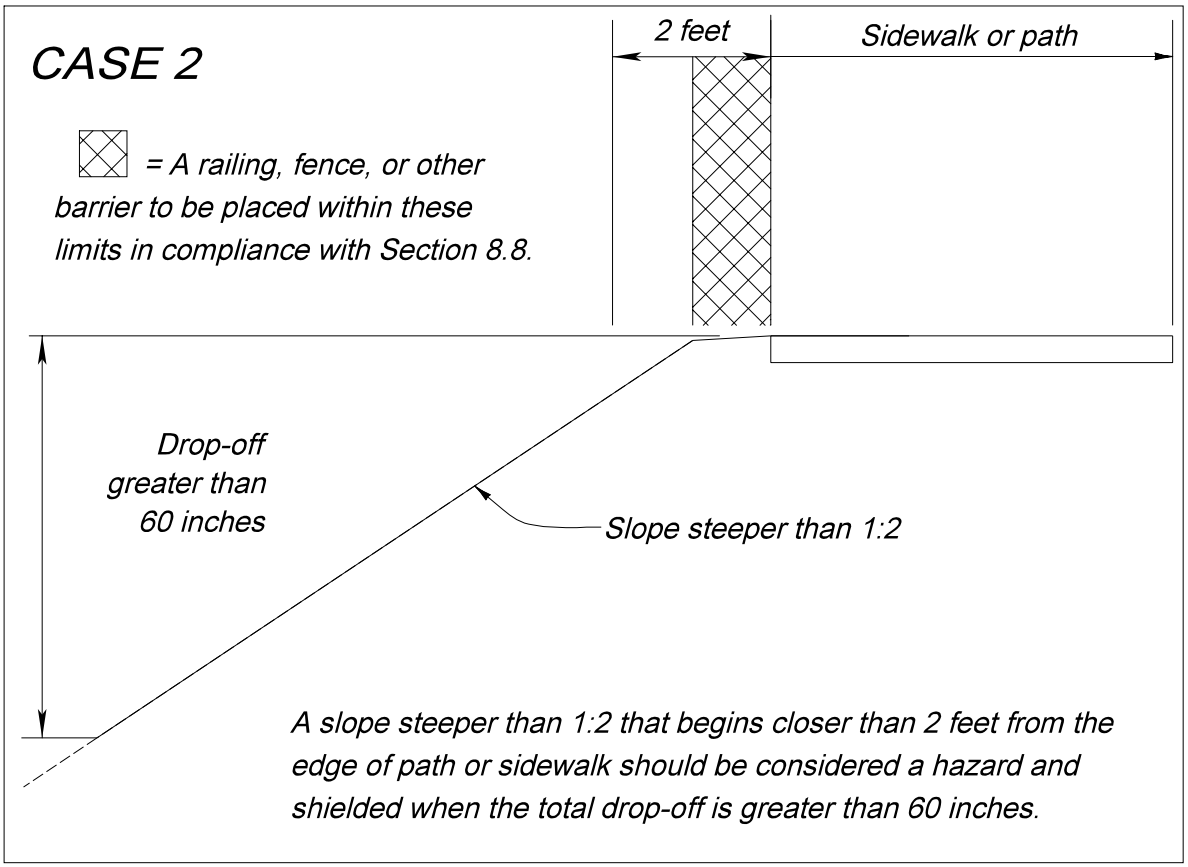
Option to create a graphic to showcase what is said in this paragraph.

There are two cases that require shielding as shown in **Figure 8 – 4 Drop-Off Hazards for Pedestrians and Bicyclists**. Depending on the depth of the drop-off and the severity of the conditions below, shielding may be necessary for cases other than described above.

Railings or fences should be provided for vertical drop-off hazards or where shielding is required. The standard height for a pedestrian/bicycle railing is 42 inches. A 48-inch hightall pedestrian/bicycle railing should be used where bicycle traffic is expected and sidewalk grades are steeper than 5% and bicycle travel is expected. A standard railing is generally intended for urbanized areas, locations attaching to bridge rail or along concrete walkways. Fencing is generally intended for use in rural and natural contexts areas along paths and trails.

Figure 8-4 Drop-Off Hazards for Pedestrians and Bicyclists





8.7 Pedestrian Crossings

The design of pedestrian crossings and parallel pathways within the right of way shall be considered an integral part of the overall design of a street or roadway~~highway~~. Crossings are most effective when design and operational factors support pedestrian use, including short crossing distances, reduced or separated conflicts with vehicular movements, lower motor vehicle speeds, and signal timing based on walking speeds appropriate to the expected users with minimal delay.

An engineering study is recommended before installing a marked crosswalk at midblock or unsignalized locations. For more information on pedestrian crossing studies, refer to the ***FDOT Traffic Engineering Manual (TEM).***

~~The development of protection at any remaining crossings or conflict points must be adequate to achieve a total pedestrian transportation mode that is reasonably safe.~~

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***..

8.7.1.1 Marked Crosswalks

Marked crosswalks are one ~~tool~~ treatment which~~to~~ allows pedestrians to cross the roadway safely. They are often used in combination with other treatments (signs, flashing beacons, curb extensions, pedestrian signals, raised median or refuge islands, and enhanced overhead

lighting). Marked crosswalks serve two purposes: 1) to inform motorists of the location of a pedestrian crossing so that they have time to lawfully yield to or stop for a crossing pedestrian; and 2) to assure communicate to the pedestrian that a legal crosswalk exists at a particular location. See **Figure 8 – 5 Pedestrian Median Refuge with and Curb Extensions** for an examples of a pedestrian median refuge with and a curb extension.

Figure 8-5 Pedestrian Median Refuge with and Curb Extension

Source: Urban Street Design Guide, National Association of City Transportation Officials (NACTO) (left); Kittelson & Associates, Inc. (right)

Marked crosswalks on an uncontrolled leg of an intersection or a mid-block location shall be supplemented with other treatments (such as signing, beacons, curb extensions, raised medians, raised traffic islands, or enhanced overhead lighting) in when any of the following conditions exist:accordance with ***FHWA's Safe Transportation for Every Pedestrian (STEP)*** guidance when any of the following conditions exist:

1. PWhere posted speeds are greater than 340 mph.
2. On a roadway with 4 or more lanes without a raised median or raised traffic island that has an AADT of 12,000 or greater.
3. On a roadway with 4 or more lanes with a raised median or raised traffic island that has or is projected to have (within 5 years) an AADT of 15,000 or greater.

See **Chapter 6 – Lighting** for information on illuminating crosswalks and pedestrian facilities.

Additional guidance on marked crosswalks can be found in the ***AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities***, the ***Manual on Uniform Traffic***

Control Devices (MUTCD) – Section 3C, and ***FHWA's Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines***.

Marked crosswalks can also be used to create midblock crossings.

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.

~~Midblock crossings should not be installed where sight distance or sight lines are limited for either the motorist or pedestrian.~~

~~Midblock crossings should be marked and signed in accordance with the ***MUTCD***.~~ See **Figure 8 – 6 ~~Raised~~ Midblock Crosswalk~~s~~** for an example of a midblock crosswalk.

Figure 8-6 ~~Raised~~ Midblock Crosswalk

~~Suwannee Street, Tallahassee~~Source: Kittelson & Associates, Inc. ~~, Florida~~

~~Crosswalks may be supplemented with Pedestrian Hybrid Beacons (PHB) or Rectangular Rapid Flashing Beacons (RRFBs). Illumination should be evaluated if night-time pedestrian activity is expected. See Chapter 6 – Lighting for further information.~~

~~A PHB is a special type of beacon used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk. ***MUTCD Chapter 4J*** provides additional information regarding their installation. See **Figure 8 – 7 Pedestrian Hybrid Beacon** for an example of a pedestrian hybrid beacon.~~

~~Figure 8-7 Pedestrian Hybrid Beacon (PHB)~~

~~16th Street South, St. Petersburg, Florida~~

~~The RRFB uses rectangular-shaped high-intensity LED-based indications, flashes rapidly in a wig-wag "flickering" flash pattern, and is mounted immediately between the crossing sign and the sign's supplemental arrow plaque. Use of PHBs should be limited to locations with the most critical safety concerns, such as pedestrian and school crosswalks across uncontrolled approaches.~~

~~See **Figure 8 – 8 Pedestrian Median Refuge with Rectangular Rapid Flashing Beacon** for an example of a Rectangular Rapid Flashing Beacon (RRFB).~~

~~Figure 8-8 Pedestrian Median Refuge with Rectangular Rapid Flashing Beacons (RRFB)~~

~~4th Street North, St. Petersburg, Florida~~

8.7.2 Pedestrian Hybrid Beacon

Crosswalks may be supplemented with Pedestrian Hybrid Beacons (PHBs), particularly where pedestrians need to cross multilane or high-speed roadways, or at locations with a documented pedestrian crash history.

Key considerations for PHB use include:

- Application: PHBs are most applicable on multilane roadways with higher vehicle speeds (≥35 mph), or where pedestrian demand justifies a high level of protection.
- Compliance: MUTCD Chapter 4J provides criteria for warrants, placement, and signal display sequence.

See **Figure 8-7 Pedestrian Hybrid Beacon (PHB)** for an example installation.

Figure 8-7 Pedestrian Hybrid Beacon (PHB)

16th Street South, St. Petersburg, Florida

8.7.3 Rectangular Rapid Flashing Beacon

Crosswalks may also be supplemented with Rectangular Rapid Flashing Beacons (RRFBs). RRFBs may be effective where additional driver awareness is needed but a full signal or PHB is not warranted.

Key considerations for RRFB use include:

- Application: Consider for ~~on~~ streets with posted speeds of 35 mph or below and four through lanes (both directions) or less regardless of median presence or five lanes with a median refuge island. On multilane undivided roadways, consider installing overhead RRFBs.
- Integration with other treatments: May be combined with pedestrian refuge islands, curb extensions, or other enhancements to increase effectiveness.
- Compliance: ***MUTCD Chapter 4L*** provides specifications on beacon placement, flash pattern, and sign integration.

See **Figure 8-8 Pedestrian Median Refuge with Rectangular Rapid Flashing Beacons (RRFBs)** for an example installation.

Figure 8-8 Pedestrian Median Refuge with Rectangular Rapid Flashing Beacons (RRFBs)

4th Street North, St. Petersburg, Florida

8.7.28.7.4 Curb Ramps and Blended Transitions

A continuous accessible pedestrian route, including curb ramps and blended transitions, is needed along pedestrian networks. Blended transitions are raised pedestrian street crossings, depressed corners, or similar connections between pedestrian access routes. They are at the level of the sidewalk or shared use path and level of the pedestrian street crossing that have a grade of 5% or less. Blended transitions can be used when geometrics and allocated space does not allow for separated curb ramps.

Curb ramps shall be provided at all intersections with curb (**Section 336.045 (3), Florida Statutes**). Each crossing should have separate curb ramps, perpendicular or parallel with the curb, and landing within theleading to each crosswalk. **Figure 8-9** shows example curb ramp layouts.

Committee: Is the term "turnouts" still used?

Include sidewalk curb ramps at the following locations:

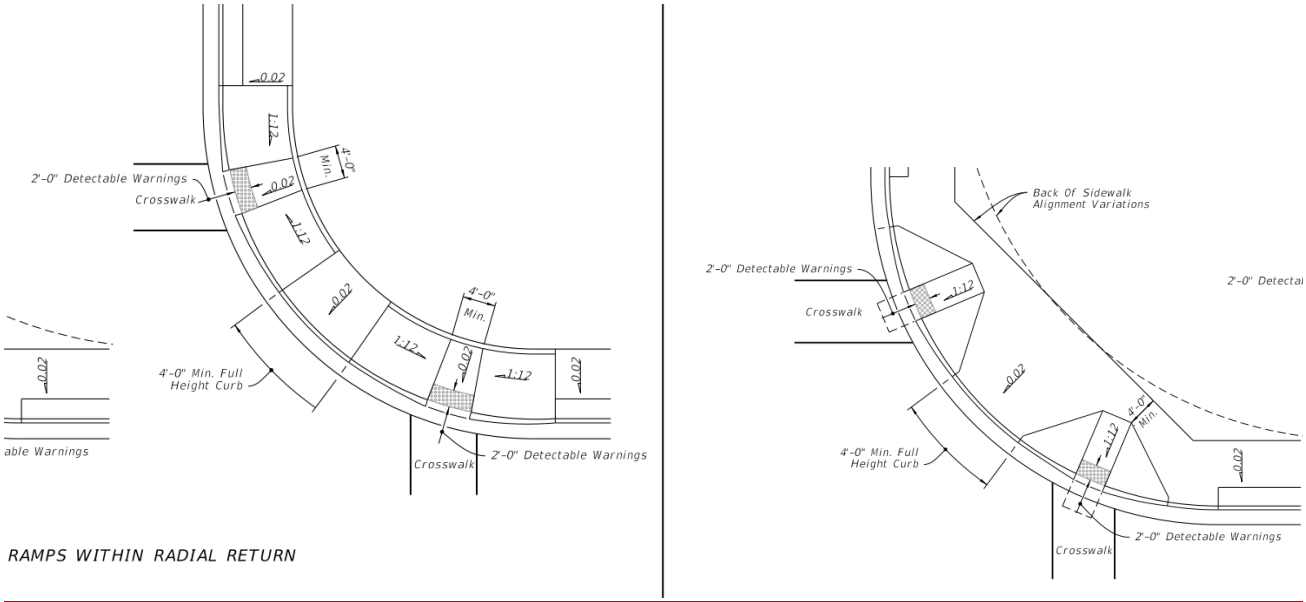
- At curbed returns for intersections, driveways, and turnouts.

This is a working document that has not been adopted.

- On curbed roadways between intersections where a crosswalk ~~has been established~~exists, such as midblock crossings and side streets.

Figure 8-9 Example Curb Ramps

[Currently FDOT drawings. Option to redraw in FGB style.]



Relocate or adjust pull boxes, manholes and other types of existing surface features outside curb ramps where possible. Where relocation is not feasible,~~to meet the~~ ADA requirements shall be met for nonslip top surfaces, ¼ inch height protrusion, and slopes flush with the surrounding surface.

On sidewalks, the curb ramp width shall be a minimum of 4 feet; the bottom of the curb ramp should be wholly contained within the width of the crosswalk~~ curb ramp widths equal to crosswalk widths are encouraged~~. For shared use paths, the curb ramp shall be at least as wide as the approaching width of the path. Curb ramp slopes shall not exceed 1:12 and shall have a firm, stable, slip resistant surface texture.

Curb ramps should be in line with the crossing. At intersections where more than one road is crossed, there must be a curb ramp present at every point where a pedestrian is crossing the street~~provide separate curb ramps at both ends of each crossing~~. Two ramps per corner, one in each direction of travel, are preferred to minimize the ~~problems~~ challenges with entry angle and to decrease the delay to pedestrians~~ entering and exiting the roadway~~.

Crosswalks~~ings~~ are required to meet the same grade and cross slope requirements as sidewalks. Maximum slope of a crossing within the road should not exceed a slope of 0.02 (2%).

Where criteria for maximum cross slope of the crossing cannot be met, such as where the longitudinal grade of the street is steeper than 2%, provide the minimum attainable cross slope. When following the profile grade of the roadway, curb ramps are not required to exceed 15 feet in length.

Curb ramps whose sides have returned curbs on the outside edges provide useful directional cues when they are aligned with the pedestrian street crossing and are protected from cross travel by a buffer area or landscaping.

Provide transition slopes (flared sides) where a pedestrian circulation path crosses the curb ramp. The maximum slope of transition slopes is 1:10, measured parallel with and adjacent to the curb line.

A turning space at least 4 feet by 4 feet wide shall be provided at the top of the curb ramp and shall be permitted to overlap other turning spaces and clear spaces. Where the turning space is constrained at the back-of-sidewalk, the turning space shall be at least 4 feet by 5 feet. The 5-foot dimension shall be provided in the direction of the ramp run.

When altering an existing pedestrian facility and conditions preclude the accommodation of a curb ramp slope of 1:12 (8.33%), consider alternatives that start the ramp transition farther back in the sidewalk. provide a slope from 1:12 to 1:10 with a maximum rise of 6 inches.

Further information on curb ramps, landings and blended transitions is provided in the FDOT ***Standard Plans***. Additional guidance is also provided in ***Transit Cooperated Research Program (TCRP) Research Report 248 Tactile Wayfinding in Transportation Settings for Travelers Who Are Blind or Visually Impaired***.

8.7.38.7.5 Detectable Warnings

Install detectable warnings to cover the full width of the walking surface and 2 feet in length. They Detectable warnings shall be included are required on sidewalks and shared use paths at the following locations:

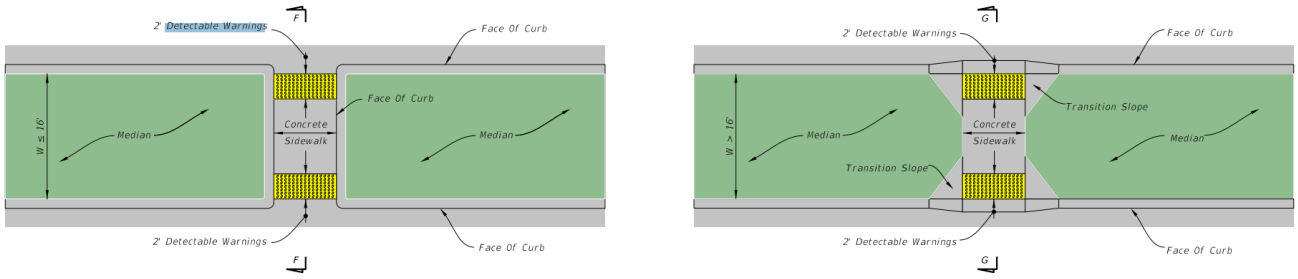
- Curb ramps and blended transitions at street crossings
- Cut-through pedestrian refuge islands or medians six feet wide or greater
- Pedestrian at-grade rail crossings
- Commercial driveways with a stop sign, yield sign or traffic signal
- Boarding and alighting areas adjacent to the roadway at bus stops where there is an at-grade connection to the roadway

- Edges of rail boarding platforms not protected by screens or guards

Figure 8-10 shows example placement of detectable warnings.

Figure 8-10 Example Detectable Warnings

[Option to redraw in FGB style]



Committee: Is the term "urban flared turnouts" still used?

Install detectable warnings at the point where a curb ramp meets the roadway to cover the full width of the walking surface and be 2 feet in length. Detectable warnings are not required where sidewalk intersects urban flared turnouts or sidewalks that run continuously through driveways. Do not place detectable warnings on transition slopes or over grade breaks.

The detectable warning systems on the ~~Department's~~ FDOT **Approved Product List (APL)** are designed to work with concrete surfaces. In areas where the pedestrian facility has an asphalt surface, such as a shared use path, specify an appropriate detectable warning system. In these cases, consider including a short section of concrete that will accommodate any system on the FDOT **Approved Product List (APL)**.

Additionally, when designing pedestrian crossings, refer to the ***Manual on Uniform Traffic Control Devices (MUTCD) – Section 2B*** for guidance on appropriate signage, including "Yield to Pedestrians" and "Stop Here for Pedestrians" signs. These signs enhance pedestrian safety by improving driver awareness and reinforcing legal crossing behavior.

Further information on detectable warnings ~~are~~ is provided in the FDOT ***Standard Plans***.

~~8.7.4~~8.7.6 Curb Extensions

Curb extensions (also known as~~a.k.a.,~~ bulb-outs) may be used in conjunction with on-street parking at intersections or midblock locations where there is a crosswalk, provided there is adequate width for existing traffic movements. Curb extensions shorten the crossing distance~~,~~

and provide additional space at intersections, and allowing pedestrians to see and be seen before entering a crosswalk. The design of curb extensions should must take into consideration the needs of transit vehicles, drainage, and bicyclists, as well as design and control vehicles, including emergency vehicles.

Practitioners or designers can consult the ***FDOT Design Manual (FDM)*** for guidance on appropriate curb extension geometry, turning templates, and drainage considerations to provide compatibility with all roadway users, including transit vehicles, bicyclists, and emergency vehiclefirst responders.

8.7.58.7.7 Accessible Pedestrian Signals

Signs, signals, and pavement markings should be utilized used to provide the necessary information and directions for pedestrians. All directions and regulations should be clear, consistent, and logical, and should, at a minimum, conform to the requirements given in the ***MUTCD***. The installation of accessible pedestrian signals that include audible and/or vibro-tactile, and visual signals should be considered.

Consider the installation of Accessible Pedestrian Signal (APS) devices at all new and reconstructed signalized intersections and signalized crossing locations where pedestrian facilities are provided or planned. Where pedestrian facilities are provided or planned, iInclude provisions (e.g., conduits, conductors, signal cables, push button pedestals, curb ramps) needed for future installation of Accessible Pedestrian Signal (APS) devices on all new and reconstructed signalized intersections and signalized crossing locations, even if the devices are not initially installed.

Provide a level landing at the base of all pedestrian pushbutton locations. The landing mustshall provide a clear area of 30 inches by 48 inches 4 feet by 4 feet (in either direction) directly in front of and centered on, the pedestrian pushbutton to allow persons using a wheeled mobility device to actuate the button while remaining stationary.

8.7.68.7.8 Sight Distance

At pedestrian crossings, provide sufficient reciprocal visibility between pedestrians and drivers by minimizing obstructions in critical sight lines. Avoid locating crossings where sight distance is restricted by horizontal or vertical curvature. Where sight obstructions cannot be reasonably addressed, consider context-sensitive solutions such as curb extensions to improve pedestrian visibility. Balance the need for visibility with speed management objectives and avoid over-clearing areas and inadvertently encouraging higher vehicle speeds. Refer to **Chapter 3 – Geometric Design** for general driver sight distance requirements.

~~The general requirements for sight distances for the driver are given **in Chapter 3 - Geometric Design**.~~

~~Stopping sight distances greater than the minimum should be provided at all pedestrian crossings. These sight distances should include a clear view of the pedestrian approach pathway. Where parallel pedestrian pathways are within the roadside recovery area, or where casual pedestrian crossings are likely, the normal required stopping sight distance should also include a clear view of the entire roadside recovery area.~~

~~Sight distances shall be based upon a driver's eye and object height as discussed in **Chapter 3 – Geometric Design**. Due to the small size of some pedestrians (particularly children), they are generally easy to confuse with other background objects.~~

~~Parking shall be prohibited where it would interfere with the required sight distance. Particular care should be exercised to ensure ample mutual sight distances are provided at all intersections and driveways.~~

~~8.7.7~~8.7.9 Rail Crossings

~~Roadways, sidewalks, and shared use paths at grade may cross light rail, street car rail, passenger rail, and freight railroads.~~ Special design considerations are needed for ~~these~~ pedestrian rail crossing~~intersections so that~~to warn pedestrians ~~are warned~~ of the crossing and potential presence of a train. In addition, these crossings have specific accessibility requirements for ~~relating to~~ surface continuity which ~~must~~ shall be met. See **Chapter 7 – Rail-Highway Crossings** for further information. The ***Federal Railroad Administration*** may impose additional requirements for the design and construction of rail crossings.

8.8 Lighting

Lighting of the roadway itself is not only important for the safety of vehicular traffic, but also ~~valuable~~ for the ~~ protection of pedestrians. Vehicle headlamps often do not provide sufficient lighting to achieve the required stopping sight distance. Since this requirement is of vital importance at any potential pedestrian crossing location,~~point,~~ lighting of the crossing should be considered. Lighting a street or highway is also valuable in improving the pedestrian's view of oncoming vehicles. At intersections or other locations with vehicular~~le~~ turning maneuvers, vehicle headlights may not be readily visible to the pedestrian. The general requirements for lighting on streets and highways are given in **Chapter 6 – Lighting**.

Committee: Suggest moving struck through text to lighting chapter.

Lighting shall be provided in pedestrian underpasses and should be considered on pedestrian overpasses. All pedestrian lighting shall be vandal resistant. The installation of daytime lighting is warranted when underpass user visibility requirements are not met with sunlight. Pedestrian underpass and overpass lighting should conform to the general lighting requirements given in the American Association of State Highway and Transportation Officials (AASHTO) Roadway Lighting Design Guide.

The general requirements for lighting on streets and highways are given in **Chapter 6 – Lighting**. Pathways adjacent to a street or highway should not be illuminated to a level more than twice that of the roadway itself.

In general, lighting should be considered as warranted when it is necessary, at night, to provide the mutual sight distance capabilities described in the preceding **Chapter 3 – Geometric Design**. Locations with significant night time pedestrian traffic that should be considered for lighting of the roadway and adjacent pedestrian facilities include the following:

- Any street or highway that meets the warranting criteria given in **Chapter 6 – Lighting**
- Streets and highways with speed limits more than 40 mph that do not have adequate pedestrian conflict elimination
- Sections of highway with minimal separation of parallel pedestrian pathways
- Intersections, access and decision points, and areas adjacent to changes in alignment or cross sections
- Areas adjacent to pedestrian generators
- Transit stops and other mass transit transfer locations
- Parking facilities
- Entertainment districts, sports/recreation complexes, schools, and other activity centers generating night travel
- Pedestrian crossings
- Any location where improvement of night time sight distance will reduce the hazard of vehicle-pedestrian conflicts

See **Chapter 6 – Lighting** for further information on lighting of pedestrian facilities and shared use paths.

8.9 References for Informational Purposes

- Florida Department of Transportation Transit Facility Design

  https://www.fdot.gov/fdottransit/transitofficehome/transitplanning.shtm/newtransitfacilitiesdesign.shtm
- USDOT/FHWA ADA Standards for Accessible Design (ADAAG)

  http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards
- 2006 Americans with Disabilities Act Standards for Transportation Facilities

  https://www.access-board.gov/files/ada/ADAdotstandards.pdf
- 2023 Florida Accessibility Code for Building Construction

  https://codes.iccsafe.org/content/FLAC2023P1
- AASHTO – Guide for the Planning, Design, and Operation of Pedestrian Facilities

  https://store.transportation.org/
- AASHTO – Roadway Lighting Design Guide

  https://store.transportation.org/
- NACTO Urban Streets Design Guide

  https://nacto.org/publication/urban-street-design-guide/
- Designing Walkable Urban Thoroughfares (CNU and ITE)

  https://www.cnu.org/our-projects/cnu-ite-manual
- FHWA Policy Memo for Flexibility in Pedestrian and Bicycle Facility Design

  https://nacto.org/wp-content/uploads/2013/09/design_flexibility_memorandum_092013.pdf
- AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications, 6th Edition, (2012) with 2013 Interim Revisions

  https://store.transportation.org/
- Federal Railroad Administration General Manual - Policies, Procedures, and General Technical Bulletins (July 2014)

  https://railroads.dot.gov/about-fra/about-fra