

CROSSWALKS

Florida Department of Transportation, November 2009

Strategic Highway Safety Plan (SHSP)

- Adopted in 2006
- Multiple Emphasis Areas, each of which affects pedestrian safety:
 - ▣ Aggressive Driving
 - ▣ Intersection Crashes
 - ▣ Vulnerable Users
 - ▣ Lane Departures

Intersection Strategies

- Improve intersection design and operation from minimum to **optimal** standards by:
 - Better signage, pavement markings, and channelization.
 - Install pedestrian signals at signalized intersections where needed, with countdown heads.
 - Provide refuge islands and other pedestrian friendly designs.
 - Support roundabouts and other innovative intersection treatments.

Vulnerable Road Users Strategies



- Conduct evaluations of countermeasures and safety improvements to determine effectiveness.
- Update roadway design guidelines to incorporate these strategies.
- Make training available for state and local agency staff.

Definitions

□ **316.003 Definitions.—**

□ (6) CROSSWALK.--

- (a) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway, measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway.
- (b) Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.

□ (47) SIDEWALK.—

- That portion of a street between the curbline, or the lateral line, of a roadway and the adjacent property lines, intended for use by pedestrians.

Research

- Evaluation of Traffic Crash Fatality Causes and Effects
 - ▣ Study of 2,080 fatal crashes on Florida's SHS from 1998-2000.
 - ▣ Included 353 pedestrian crashes.
 - ▣ Most common types:
 - (1) pedestrian crossing not at intersection with crosswalk (194, 9.2%)
 - (2) pedestrian crossing at intersection in crosswalk (33, 1.6%)
 - (3) other in road (29, 1.4%)
 - (4) pedestrian exited vehicle prior to crash (28, 1.3%)
 - (5) pedestrian walking along road (24, 1.1%).
 - ▣ In nearly half of the roadway crossing cases, pedestrians were attempting to cross the road within 600 feet of a crossing location with a traffic signal.
 - ▣ In 57% of the "walking along road" crashes, there was no sidewalk.

Standard Crosswalk Marking

- 12" parallel white lines with a min. width of 6' at intersections, typical width is 8'.



Special Emphasis Crosswalk Marking



Super Dooper Crosswalk Marking



2008 Legislative and DDE Direction

- Issue – Lack of consistent application on the marking of crosswalks on side streets at both stop controlled and signalized intersections.
- Florida Legislature added option for a stop condition for mid-block crosswalks if signed.
- Belief that marking of crosswalks:
 - Help drivers better identify intersection
 - Guide the pedestrian to the best crossing location
 - Provide guidance for people with low/no vision.

Personal Experience



2008 DDE Direction



All side street pedestrian crosswalks shall be marked when there is a sidewalk.





The diagram illustrates a cross-section of a multi-lane bridge deck. On the left, a vertical section shows lane widths: 60" Max. for the top lane, 24" for the middle lane, and 12" for the bottom lane. A vertical line labeled 4 Min. indicates the minimum width between the deck edge and the first lane. On the right, a horizontal section shows the deck with lane lines and load positions. Lane lines are labeled "Lane line". Load positions are indicated by arrows and labels: W for the top lane, $\frac{1}{2}W$ for the middle lane, and $\frac{1}{2}W$ for the bottom lane. A vertical line labeled 4 Min. indicates the minimum width between the deck edge and the first lane.

Index No.
17346

Florida Design Standards, Index 17346

SCHEME 1
Crosswalk
with Warning Signing

SCHEME 2
Crosswalk
with Yield Signing

SCHEME 3
Crosswalk
with Stop Signing

SCHEME 4
Signalized Crosswalk

APPROACH SPEED MPH	A-SUGGESTED DISTANCE (FT.)
25 Or Less	200
26 To 35	250
36 To 45	300
46 To 55	325

- Plans shall indicate which crosswalk scheme is to be used.
- The details shown do not depict the signing and markings for multi-lane roadways with divided medians. For these applications, additional signs shall be installed on the median side.
- All mid-block crosswalks shall use high emphasis crosswalk markings.
- Crosswalk marking should utilize preformed marking materials.

REVISIONS

DATE	BY	DESCRIPTION
11/05/08	C.H.	New sheet added to Special Markings Area.
06/15/09	C.H.	Sign text revised in SCHEME 3 R1-5bL with MUTCD changes.

2010 Interim Design Standard

SPECIAL MARKING AREAS

Index No. 17346

Interim Date: 07/01/08

Sheet No. 10 of 14

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□ 8.3.3 Crosswalks

- Occur at all intersections, whether or not they are marked and on any portion of a roadway distinctly indicated for pedestrian crossing by lines or other markings on the surface.
- Reasonable accommodation should be made to make crossings both convenient and safe, and minimize the pedestrian's exposure in the roadway.
- Additional guidance ... in the ***AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*** and ***FHWA's Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations: Executive Summary and Recommended Guidelines***

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□ 8.3.3.1 Crosswalks at Intersections

- ▣ As volume, speed and number of travel lanes increase, marked crosswalks are best used in conjunction with other treatments:
 - including signals, signs, beacons, curb extensions, raised medians, refuge islands, and enhanced overhead lighting.
- ▣ Marked crosswalks on an uncontrolled leg of an intersection (without signals, stop or yield signs) shall be supplemented:
 - Where posted speeds are greater than 40 mph.
 - On a roadway with 4 or more lanes without a raised median or raised traffic island that has an ADT of 12,000 or greater.
 - 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 ADT of 15,000 or greater.

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□ 8.3.3.2 Midblock Crosswalks

- Midblock crosswalks **can** be used to supplement the pedestrian crossing needs in an area between intersections. This can provide pedestrians with a more direct route to their destination.
- When used, midblock crosswalks should be illuminated, marked and signed in accordance with the ***MUTCD, Traffic Engineering Manual (Section 3.8)*** and ***Index 17346, Design Standards***.

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□ 8.3.3.2 Midblock Crosswalks (con.)

- ▣ Should not be located where:
 - spacing between adjacent intersections is $<$ than 660 feet.
 - distance to the nearest intersection (or crossing location) is $<$ than 300 feet.
 - where the ADA cross slope and grade criteria cannot be met.
- ▣ Shall not be provided where:
 - the crossing distance exceeds 60 feet (unless a median or a crossing island is provided).
 - the sight distance for both the pedestrian and motorist is inadequate.
- ▣ An engineering study is required.

Specifications and Materials

- Review of specifications and products used for crosswalk markings.
 - Preformed vs. hand-lined materials.

Other Research



- Report on patterned-textured pavement crosswalk markings and process for testing material.