

CROSSWALK MARKING GUIDELINES

Crosswalks may be marked or unmarked. They exist at all controlled intersections and may only be established by markings at non-intersection locations.

Not all locations are safe for pedestrians to cross due to traffic volumes, speed limits, sight distances, etc. Therefore, you need to perform an engineering study before installing a marked crosswalk.

According to the Manual on Uniform Traffic Control Devices (MUTCD), colored paint between the white lines of a crosswalk marking is permitted, as long as the paint does not:

- Degrade the contrast of the white lines.
- Use colors that may be misconceived by drivers as a traffic control device.
- Contain retroreflective materials.

(As determined by the FHWA Interpretation Letter 3-178(I) — http://mutcd.fhwa.dot.gov/resources/interpretations/3_178.htm)

Crosswalk markings may follow many patterns including solid, standard, continental, dashed, zebra and ladder patterns. There is no conclusive evidence that links the type of crosswalk pattern to improved pedestrian safety.

Solid



Standard



Continental



Dashed



Zebra



Ladder



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Recommendations for installing Marked Crosswalks and Other Needed Pedestrian Improvements at Uncontrolled Intersections

Roadway Type (Number of travel lanes and median type)	Vehicle Average Daily Traffic (ADT) < 9,000			Vehicle ADT > 9,000 to 12,000		
	Speed Limit					
	< 30mph	35 mph	40 mph	< 30mph	35 mph	40 mph
2 lanes	C	C	P	C	C	P
3 lanes	C	C	P	C	P	P
Multilane (4 or more lanes) with raised median	C	C	P	C	P	N
Multilane (4 or more lanes) without raised median	C	P	N	P	P	N
Roadway Type (Number of travel lanes and median type)	Vehicle ADT > 12,000 to 15,000			Vehicle ADT > 15,000		
	Speed Limit					
	< 30mph	35 mph	40 mph	< 30 mph	35 mph	40 mph
2 lanes	C	C	N	C	P	N
3 lanes	P	P	N	P	N	N
Multilane (4 or more lanes) with raised median	P	P	N	N	N	N

Key to Chart Abbreviations

- C= Candidate sites for marked crosswalks. Marked crosswalks must be installed carefully and selectively after an engineering study is preformed.
- P= Possible increase in pedestrian crash risk may occur if crosswalks are added without other pedestrian facility enhancements. Closely monitor these locations and enhance with other pedestrian crossing improvements, if necessary, before adding a marked crosswalk.
- N= Marked crosswalks alone are insufficient, since pedestrian crash risk may be increased due to providing marked crosswalks alone. Consider using other treatments, such as traffic calming, traffic signals with pedestrian signals where warranted, or other substantial crossing improvements to improve crossing safety for pedestrians.

Marked vs. unmarked

Crosswalk markings are intended to increase pedestrian safety. However, this is not always the case. According to a University of North Carolina study, “Under no condition was the presence of a marked crosswalk alone at an uncontrolled location associated with a significantly lower pedestrian crash rate compared to an unmarked crosswalk.”

The study concluded that there was an increase in pedestrian-related accidents under the following conditions:

- ✎ Multi-lane roads without raised medians and average daily traffic volume of about 12,000.
- ✎ Multi-lane roads with raised medians and average daily traffic volume above 15,000.

The study analyzed five years of data on pedestrian crashes at 2,000 crosswalks. Half of the sites were marked and half were unmarked in comparable locations. All of the sites were uncontrolled — that is, no signal or stop sign regulating traffic. The research determined that marked crosswalks often give pedestrians a false sense of security.

Evidence shows that enhancements such as roadway narrowing, raised medians, traffic signals, increasing overhead lighting, traffic calming and curb extensions increase pedestrian safety. Consider these factors during an engineering study in place of or in addition to installation of marked crosswalks.

Specifications

MUTCD places minimum and maximum standards on marking widths and spacing to enhance visibility of crosswalks.

The MUTCD suggests the following guidelines for crosswalk marking:

- ✎ Crosswalks should be marked at all intersections where

there is substantial conflict between vehicular and pedestrian movements.

- ✎ Marked crosswalks should be provided at other appropriate points of pedestrian concentration, such as at loading islands, mid-block pedestrian crossings or where pedestrians could not otherwise recognize the proper place to cross.

Design requirements for crosswalk pavement markings

Because non-intersection pedestrian crossings are usually unexpected by drivers, warning signs should be installed and adequate visibility should be provided by parking prohibitions. For instance, you might install street lights to help drivers identify where pedestrians cross the roadway.

When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted. This type of marking may be used at locations where substantial numbers of pedestrians cross without any other traffic control device, at locations where physical conditions are such that added visibility of the crosswalk is desired or at places where a pedestrian crosswalk might not be expected.

Wherever possible, install marking designs to avoid wheel paths.

Adapted with permission from the UNHT² Center Technical Note Crosswalk Marking.

Design Requirements for Crosswalk Pavement Markings		
Treatment	Minimum Design Requirements	Maximum Design Requirements
Solid white transverse crosswalk lines	✎ 6-in line width ✎ 6-ft gap between lines (crosswalk width)	✎ 24-in line width ✎ No maximum crosswalk width defined
Diagonal or longitudinal lines without transverse lines	✎ 6-ft crosswalk width ✎ 12-in line width ✎ 12-in spacing of lines	✎ No maximum crosswalk width ✎ 24-in line width ✎ 5-ft spacing of lines (not to exceed 2.5 times the line width)

For additional information, contact the Nevada T² Center at the address shown below.

StreetWise is published periodically by the Nevada Transportation Technology Transfer Center at the University of Nevada, Reno. The publication contains rewritten material compiled from reliable sources, but it assumes no responsibility for their correctness. The Nevada T² Center is part of the nationwide Local Technical Assistance Program. It is financed jointly by the Nevada Department of Transportation and the Federal Highway Administration.

StreetWise

Nevada T² Center/257

University of Nevada, Reno

Reno, NV 89557

Phone: 775/784-1433 • Fax: 775/784-1429



University of Nevada, Reno/0257
Nevada T² Center
Reno, NV 89557-0257

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