



# Enhanced Crossings

## Helping pedestrians cross the street safely and comfortably

Crosswalk markings are simple enhancements that mark a crossing location to alert people driving of potential pedestrian movements across a roadway.

It is a common misconception that crosswalk markings create a false sense of security for pedestrians. However, research has shown that people walking tend to scan the street *more* at marked crosswalks, and after installing crosswalk markings, motorist speeds tend to decrease. Research is unclear why marked crossings are sometimes associated with an increase in crashes; the most reasonable explanation has been that more vulnerable road users (e.g., children, elderly) tend to rely on marked crosswalks, and for a number of reasons, crashes among these populations are both more likely to occur and more likely to have a severe outcome.<sup>1</sup>

Marked crossings on wide, high-volume, or high-speed roads, need enhancements in order to make crossing the street safer and more comfortable. Features such as high-visibility markings, curb extensions, median islands, warning signs, and beacons can help drivers notice and stop for pedestrians who are crossing; they can also make the crossing more comfortable for those using it.

### 1 MARKED CROSSWALKS

MnDOT uses high-visibility continental style crosswalk markings. They are more visible to approaching motorists than transverse crosswalks, which consist only of two white stripes on either side of the crosswalk.

### 2 ADDITIONAL ENHANCEMENTS

On wider, busier, or faster roads, consider enhancing the marked crosswalk with signs, geometric improvements, and pedestrian-activated warning devices. See Table 13-1 in the MnDOT Traffic Engineering Manual for facility treatment guidance in these situations.<sup>2</sup>

Minnesota state laws define a legal crosswalk as the extension of the sidewalks across a road, whether it has crosswalk markings or not.<sup>3</sup>

1 Adapted from MnDOT Tech Memo 15-01-T-01, page 5

2 MnDOT Traffic Engineering Manual, Chapter 13

3 MN STATUTE 169.011, subd. 20 and STATUTE 169.21, subd. 2

# Types of Crossing Enhancements

There are a variety of crossing enhancements available in addition to marking a crosswalk. Specific design treatments will vary depending on the context and individual roadway details, and must be designed with careful engineering judgment.

Common treatments include:<sup>4,5</sup>

- Improved street lighting
- Parking restrictions on the crosswalk approach
- Advanced STOP markings and signs<sup>6</sup>
- Curb extensions
- Pedestrian hybrid beacons (PHB)
- Rectangular Rapid Flashing Beacons (RRFB)



High-visibility crossing with pedestrian warning sign, curb extension, and median crossing island.



High-visibility crossing with advanced STOP marking and sign, median crossing island, and RRFB.

## Crosswalk Marking Spacing

People walking are especially sensitive to the length and directness of their trip, and they typically do not walk out of their way in order to cross to a desired destination. This applies in rural, suburban, and urban settings. Designers should:

- Locate marked crossings 150-660 feet apart, depending on local context.<sup>7,8</sup>
- Provide freeway crossings at least every half mile, as limited access roadways create significant barriers to walking.
- Consider marking a mid-block crosswalk when a key pedestrian destination, such as a school or grocery store, is located in the middle of the block.
- Avoid assuming that people will walk to a traffic signal if there is a closer, unsignalized intersection where they can cross. Both locations may need crosswalk markings or other enhancements.

4 Blackburn, L., Zegeer, C., and K. Brookshire. Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations. FHWA-SA-17-072. U.S. Department of Transportation, 2018.

5 Refer to FHWA Safe Transportation for Every Pedestrian (STEP), [https://safety.fhwa.dot.gov/ped\\_bike/step/](https://safety.fhwa.dot.gov/ped_bike/step/)

6 See MN MUTCD, Figure 3B-17

7 MnDOT Road Design Manual, Section 11-3.03

8 MnDOT Tech Memo 15-01-T-01

### DESIGN RESOURCES

*MnDOT Traffic Engineering Manual, Chapter 13: Non-Motorized Facilities*  
*MnDOT Report 2013-22: Minnesota's Best Practices for Pedestrian/Bicycle Safety*  
*FHWA-HEP-16-005: Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts*  
*FHWA-SA-17-072: Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*  
*FHWA Safe Transportation for Every Pedestrian (STEP Guide)*

### RELATED INFOSHEETS

*Separated Bikeways*  
*Median Crossing Islands*  
*Curb Extensions*  
*Where to Expect People Walking*