

# TRAFFIC AND SAFETY INFORMATIONAL SERIES

## FREQUENTLY ASKED QUESTION #7

### WHAT FACTORS ARE CONSIDERED WHEN LOCATING, CONTROLLING, AND/OR MARKING PEDESTRIAN CROSSINGS?

#### **INTERSECTIONS AND PEDESTRIAN CROSSINGS**

Intersections are places of concentrated activity and conflicts between pedestrians and motorists. In fact, many suburban intersections can present difficulties for pedestrians because their configuration, size, and signal phasing and timing are often designed to efficiently serve motor vehicles rather than pedestrian traffic.

#### **PEDESTRIAN CROSSING LOCATIONS**

The locations of pedestrian crossings are determined by the volumes and patterns of existing or expected pedestrian trips. The most common locations for marked or unmarked pedestrian crossings are at intersections with traffic control (e.g., stop signs or traffic signals). However, if a significant number of pedestrians cross at midblock, marked crossings may also be designated at these locations.

#### **PEDESTRIAN CROSSING CONTROL**

Many pedestrian crossings are uncontrolled but are located at intersections controlled by stop signs or signals. There are, however, locations where the installation of a dedicated signal at a pedestrian crossing may be necessary to separate the conflicting flows of pedestrian and motor vehicle traffic and improve safety. For example, a signal such as a high-intensity activated crosswalk (HAWK) beacon might be added at a midblock pedestrian crossing. However, the installation of such devices can be expensive, and an engineering study needs to be performed to determine whether a signal is warranted.

The timing of the pedestrian signal with respect to the surrounding signals and the method of pedestrian actuation must also be considered. When a pedestrian crossing is at a regular intersection, pedestrian movements are often served at the same time as similar vehicle movements. However, more recent developments in pedestrian signal timing, such as leading pedestrian intervals, provide pedestrians with a dedicated amount of time to begin their crossing and establish themselves in the crosswalk before vehicular traffic is released.

#### **PEDESTRIAN CROSSING MARKING AND SIGNING**

##### *Marking*

In general, pavement markings at pedestrian crossings are meant to guide pedestrians across the roadway. Markings are especially important if there is any confusion about where pedestrians should cross. The markings at a crossing also serve as a cue (possibly along with some signing) to motorists that the crossing exists.

The marking and signing of pedestrian crossings are regulated by the requirements in the *Manual on Uniform Traffic Control Devices* (MUTCD). The MUTCD states that at locations controlled by traffic signals or on approaches controlled by “Stop” or “Yield” signs, crosswalk lines should be installed where engineering judgment indicates they are needed to direct pedestrians to the proper crossing path(s). An engineering study should be performed before a marked crosswalk is installed at a location

away from a traffic control signal or on an approach controlled by a “Stop” or “Yield” sign. Typically, a crossing is marked and/or signed when there is a high volume of crossing traffic (both motor vehicles and pedestrians). This can occur at crossings at regular intersections, in downtown areas, near schools, and even at midblock locations.

When crosswalk lines are used, they shall consist of solid white lines that mark the crosswalk. They shall not be less than 6 inches or greater than 24 inches in width. The width of the crossing should not be less than six feet, and it should extend the full width of the roadway pavement. At locations where additional visibility and attention is necessary, a zebra marking technique consisting of white diagonal lines at a 45-degree angle to the line of the crosswalk may be used. These diagonal marking lines should be about 12 to 24 inches wide and have a spacing of 12 to 60 inches between lines.

### *Signing*

The marking of pedestrian crossings is sometimes supplemented by signing. Advance crossing signs are used to warn drivers of unexpected pedestrian crossing locations. For example, crossings that are not located at intersections (i.e., midblock crossings) are unexpected and require the installation of an advance crossing sign. The advance crossing sign for pedestrians is shown in Figure 1. The distance to the crossing or an “Ahead” supplemental plaque (MUTCD W16-9P) may also be indicated on the same post as the advance crossing sign. In addition, where the crossing occurs at a specific point, the advance crossing sign can be supplemented by a downward arrow plaque (MUTCD W16-7P). These types of signs should be placed at the crossing location and often are used in urban areas and/or at marked crossings. Different advance crossing assemblies are used at locations where school children cross (MUTCD S1-1 and various supplemental plaques). The advance crossing sign for schools is shown in Figure 2.



**FIGURE 1 Pedestrian advance crossing sign (W11-2).**

*Reference: Manual on Uniform Traffic Control Devices.*



**FIGURE 2 School advance crossing sign (S1-1).**

*Reference: Manual on Uniform Traffic Control Devices.*