

Chapter 14

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14 Pedestrian Signal Plan

14.1 General

A pedestrian signal is a very specific type traffic signal, installed mid-block, consisting of Type 2 signal heads mounted overhead to control vehicles and pedestrian signals with push buttons to control pedestrians. The signal heads remain green until the push button is activated. See Figure 14-1, Figure 14-2, and Figure 14-3 for examples. Design of pedestrian signals (mast arm poles, signal heads, pushbuttons, conduit, junction boxes, wiring, detection, etc.) should follow the applicable parts of Chapter 5 and Chapter 6.

Pedestrian signals require STRE operational approval. Pedestrian signals in Oregon are rare due to the high pedestrian volume thresholds that are needed to meet MUTCD warrant 4 (pedestrian volume) or warrant 5 (school crossing). Other types of devices that have lower recommended volume thresholds such as rectangular rapid flashing beacons (RRFB) and pedestrian hybrid beacons are typically used instead to aid pedestrians crossing the roadway. See Chapter 12 for more information on RRFB and pedestrian hybrid beacons.

Note that many of the, old archived “pedestrian signal” plan sheets are actually overhead continuous operation warning beacons with pedestrian crossing signs, not true pedestrian signals.

Figure 14-1 | Pedestrian Signal Installed Mid-Block, Example 1



Figure 14-2 | Pedestrian Signal Installed Mid-Block, Example 2



Figure 14-3 | Pedestrian Signal Installed Mid-Block, Example 3



14.1.1 Controller and Service

Pedestrian signals use a standard base mounted service cabinet and 332S signal controller cabinet with an ATC controller.

14.1.2 Striping and Signing

Pedestrian signals require a marked crosswalk with a stop line installed at least 45 feet in advance.

A minimum of one CROSSWALK STOP ON RED (R10-23) sign per approach shall be mounted between the type 2 signal heads. Note that the pedestrian warning sign (W11-2) was used in the past and is no longer used for new construction.

A STOP HERE ON RED (R10-6) sign shall be used near the stop line.

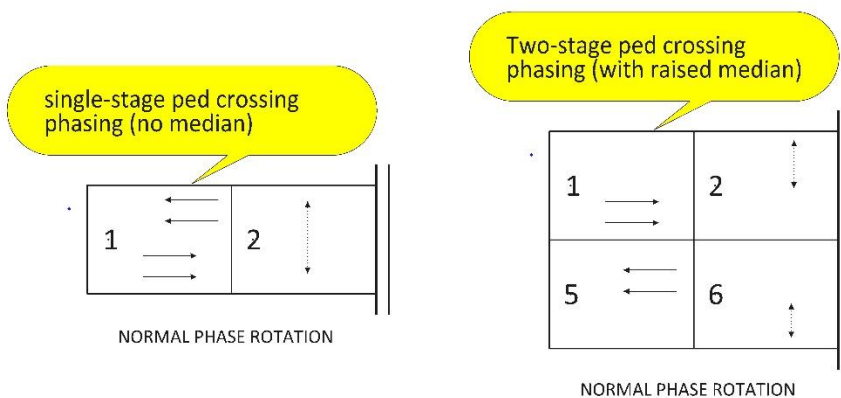
14.1.3 Detection

The operational approval will specify if the pedestrian signal needs to be coordinated with other nearby signals and/or needs advance detection to better protect the dilemma zone. If the pedestrian signal will always be in coordination, detection is not necessary. Other detection functions, such as count detection may also be desirable. See chapter 6 for more info on detection design. Work with Region Traffic to determine the appropriate detection needs.

14.1.4 Phasing and Fire Preemption

A ring and barrier diagram on the plan sheet is required, typically with phase 1 as the vehicle phase and phase 2 as the pedestrian phase for a single-stage pedestrian crossing with no raised median. If a two-stage crossing with a raised median is used, phase 5 (for vehicles) and phase 6 (for pedestrians) are added for the second stage. See Figure 14-4. Fire preemption is also typically installed if the jurisdiction is approved for use of fire preemption.

Figure 14-4 | Typical Pedestrian Signal Phasing



14.1.5 Bicycle Design Considerations

If the pedestrian signal will be serving higher numbers of people riding bicycles, the operational approval may require bike phase(s) with bicycle signal indications to improve the user experience and help reduce minimum green times when only a bicyclist is present.

When bicycle phases are used, bicycle-specific detection buttons or passive detection zones (with bicycle detection pavement marking) should be used.

14.2 Half Signals

In the past, some pedestrian signals were installed at intersections and are more commonly referred to as “half-signals”, as the mainline traffic is controlled by signal indications that cycle based on pedestrian actuations while traffic on a full-access side street is controlled by STOP signs. Half-signals are prohibited on the state highway system. See Figure 14-5 for an example of a half signal.

Figure 14-5 | Pedestrian Signal Installed at Intersection (Half-Signal), Prohibited



Half-signals are PROHIBITED on the State Highway.