

Traffic Control Signal Design Manual

Interim Pedestrian Considerations - 1/30/20

11 PEDESTRIAN CONSIDERATIONS

This chapter establishes guidance for providing pedestrian facilities at traffic control signals and the associated type of phasing.

Pedestrian signals should be included in all signalized intersection projects where pedestrians are expected. All pedestrian provisions incorporated into a signal design should strive to achieve the latest accessibility guidelines. Refer to the Department's latest [Engineering Directive](#) regarding Accessibility Guidelines for further direction.

Pedestrian signal provisions and timings are to be in conformance with the [Manual on Uniform Traffic Control Devices](#) (MUTCD).

Determination of Pedestrian Facilities

Pedestrian provisions shall be considered at signalized intersections whenever:

- designing a traffic signal installation, replacement, or revision under a project (State or Town) or encroachment permit.
- other types of projects or encroachment permits are related to pedestrian movement, such as construction of sidewalk and sidewalk ramps through an existing signalized intersection, or proposed work impacts existing pedestrian features.
- nearby developments are proposed.

In general, pedestrian provisions are expected to be designed into the majority of signalized intersections, with some specific exceptions noted later in this chapter.

Engineering judgment is used to determine the extent of pedestrian facilities at signalized intersections and includes, but is not limited to, a review of the following:

- existing or proposed sidewalk network;
- existing or proposed bus stops;
- evidence of pedestrian activity, such as a worn path or field observations;
- existing surroundings (businesses, residences, schools, parking lots, etc.); Do they provide a reasonable expectation for a pedestrian to desire to cross the roadway?
- Local Traffic Authority input – knowledge of the area where physical evidence may not be apparent;
- anticipated pedestrian activity from a proposed development, such as an encroachment permit or a major traffic generator;
- crash history;
- [Bicycle and Pedestrian Travel Needs Assessment Form](#), where applicable;

- where a wide shoulder provides a reasonable in-roadway pedestrian refuge area and pedestrian activity is existing/anticipated.

A review shall be documented, by the designer, for each signalized intersection on a Pedestrian Provisions Check List (*currently under development*) and provided to the Division of Traffic Engineering.

There are a few exceptions where pedestrian facilities could potentially not be provided, which might include:

- The crossing would be to a pedestrian restricted area, such as freeway ramps, and there is no other reasonable expectation for pedestrians to cross the roadway.
- One of the termini at the crossing lacks a walking area or a reasonable in-roadway pedestrian refuge area, is considered undesirable for pedestrian presence (e.g., physically restricted by guide rail, steep embankment, retaining walls, bridge pier or abutments), and there is no other reasonable expectation for pedestrians to cross the roadway.
- Through coordination with the Local Traffic Authority, it is determined there is no existing or anticipated pedestrian presence at the intersection.

If pedestrian provisions are not provided for crossing the arterial roadway, “No Pedestrian Crossing” signs shall be installed.

Pedestrian Signal Phasing

Two types of phasing for pedestrian signals are:

- **Concurrent**: Pedestrians cross parallel to through vehicles during phases shared with vehicular traffic.
- **Exclusive**: All pedestrians cross simultaneously during a separate phase where all vehicular approaches have red indications.

Each intersection is to be reviewed on a case-by-case basis (geometry, lane arrangements, volumes, etc.) to determine the most desirable combination of vehicular and pedestrian phasing. The least restrictive vehicular phasing practical to facilitate pedestrian crossings should typically be utilized in an effort to minimize delays to both motorists and pedestrians. This is anticipated to be concurrent phasing in most cases.

“Protected” concurrent phases should be used when there are opportunities to provide no conflicts between pedestrians and concurrent vehicular movements (e.g., concurrent pedestrian crossing an off-ramp has no conflict with adjacent through lane, partial roadway crossings where medians are present for pedestrian refuge, etc.)

Concurrent pedestrian phasing is preferred for signals within a signal system, if concurrent phasing is appropriate based on the nature and type of pedestrian activity anticipated along the signal system corridor.

A Leading Pedestrian Interval (LPI) should be used in conjunction with concurrent pedestrian phasing wherever possible. However, LPI should typically not be used where protected/permitted left-turn phasing is provided for the parallel roadway.

Exclusive pedestrian phasing should be considered under the following scenarios:

- where sight distance is restricted between a turning motorist and a potential concurrent pedestrian (e.g., building, retaining wall, bushes/trees);
- where the pedestrian crossing would be in conflict with turning maneuvers from double turn lanes during a typical concurrent phase (arterial double right-turns, double left-turns or double right-turns from a split side street phase, double right-turns from a side street, etc.);
- with complex intersection geometry;
- near schools, parks, recreational areas, senior housing, hospitals, etc.

Accessible Pedestrian Signals (APS) shall be included with all pedestrian signals at State-owned traffic control signals and is recommended for Town/City signals on State highways.

Technical aspects associated with the signal design of pedestrian facilities are available within the Pedestrian Signal Design – Technical Info document.

A pedestrian hybrid beacon is a special type of traffic control device used to warn and control traffic at marked mid-block crosswalks and allows pedestrians to cross the roadway during an exclusive pedestrian phase. See Chapter 4 (Phasing) for more information on the two types of pedestrian hybrid beacons and their typical operation.