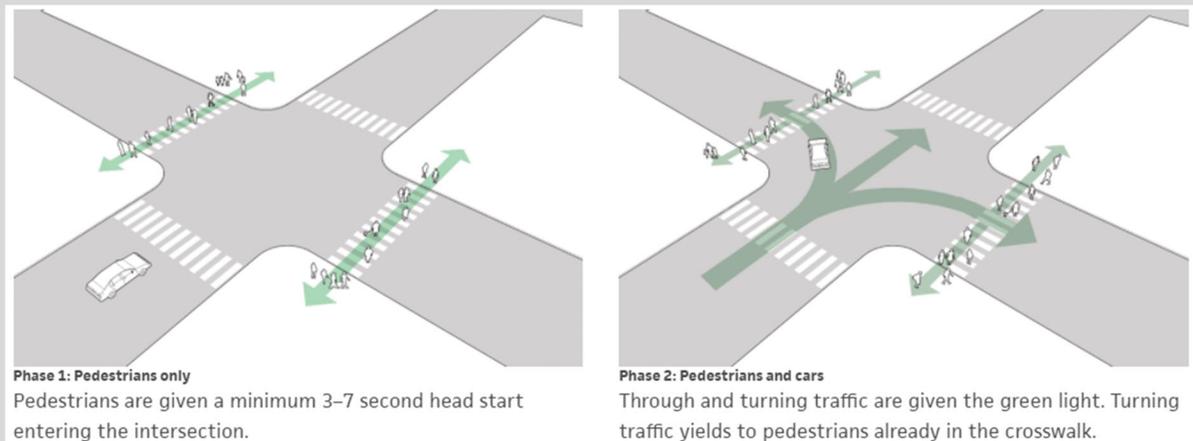


5.8 Leading Pedestrian and Leading Bicycle Intervals

Background

At intersections where there is an identified pattern of conflict between pedestrians beginning their crossing and drivers initiating turning movements without yielding to the entering pedestrians, pedestrians may be provided with a brief Leading Pedestrian Interval (LPI) (also called a “pedestrian head start”) to enter the crosswalk prior to vehicular movements receiving a green light. The LPI typically gives pedestrians 3 to 7 second head start (up to 10 seconds per some agencies) when entering an intersection ahead of the corresponding green signal in the same direction of travel. LPIs enhance the visibility of pedestrians in the intersection and reinforce their right-of-way over turning vehicles, especially in locations with a history of conflict (NACTO, 2013). LPIs have been shown to reduce pedestrian-vehicle collisions as much as 60% at treated intersections (NACTO, 2013) and have shown to be cost-effective safety measure given the low cost (Fayish, A. & Gross, F, 2010)



Source: NACTO

As discussed in Section 3.5, the current MUTCD Interim Approval restrictions for use of bicycle signal heads does not allow for the use of a Leading Bicycle Interval/Phase using a bicycle signal. However, at traffic signals where a multi-use path or shared bicycle and pedestrian facility crossing is controlled with a pedestrian indication, or where on-street bicycle lanes exist with signage per the MUTCD to allow bicyclists to use the ped signal, bicyclists may make use of a leading pedestrian phase.

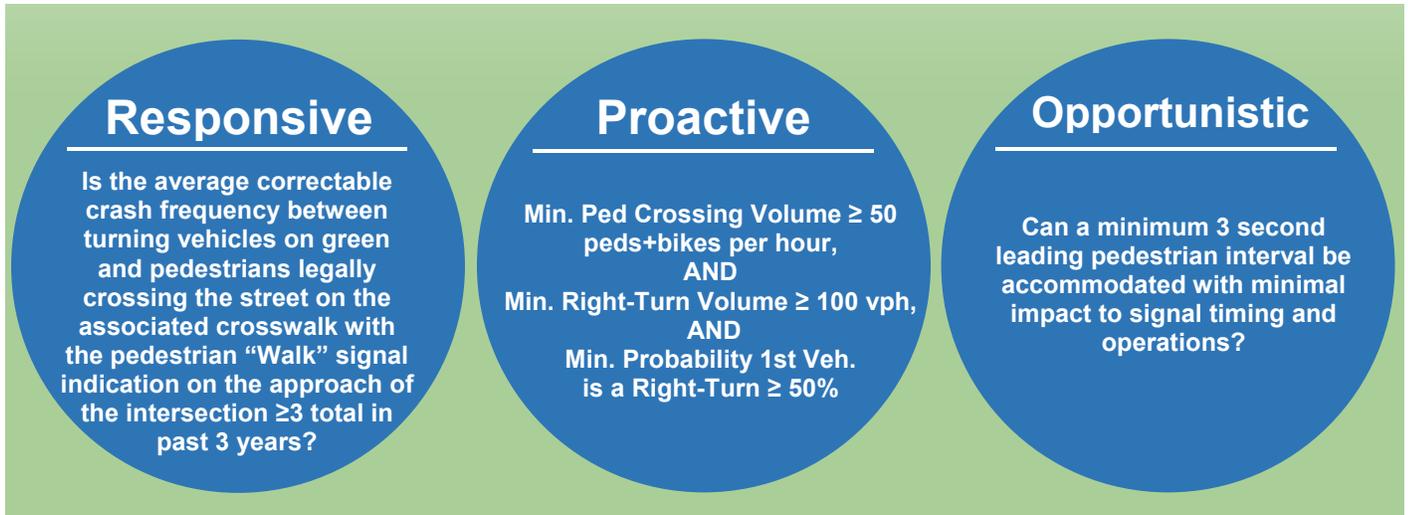
Practice: The City of Boulder has developed the Leading Pedestrian Interval Guidelines on the following page based on a compilation of research from peer communities. The City Engineer should consider the use of LPIs on a case-by-case basis, using engineering judgement, and under the following three general scenarios:

- **Responsive:** based on a documented crash history, typically identified via citizen requests, via contact from the police department, or through identification by City staff
- **Proactive:** where certain conditions exist that may lead to high exposure for pedestrians or bicyclists crossing parallel to a conflicting right-turn movement that could be mitigated with the use of an LPI.

- **Opportunistic:** locations identified by City staff where an LPI can be installed with minimal impact to motor vehicle operations

Figure 1 – City of Boulder Leading Pedestrian Interval Guidelines

A Leading Pedestrian Interval (LPI) should be considered for any of the three scenarios below, if the LPI is shown that it can be safely and effectively implemented based on an engineering assessment by City staff:



Leading Pedestrian Interval Notes (Supplemental to Figure 1):

1. A no right-turn on red restriction (static or blank-out/LED sign) should be considered in conjunction with an LPI.
2. The volume of cross-street traffic may also be considered where a high through traffic volume on a cross street can lead to a low possibility of right-turn-on-red movements (when “NO TURN ON RED” sign is not implemented) and can induce fast turning movements at the onset of a pedestrian signal.
3. LPIs will generally be implemented on a full-time basis, to provide consistency for pedestrians, though the City Engineer may assess a location on a 24-hour or specific time-of-day basis using these guidelines.
4. The City Engineer may also prescribe the use of an LPI due to the presence of a vulnerable population that would benefit from LPI, or unique physical and/or geometric conditions that create safety concerns that would be expected to be mitigated with an LPI.
5. Proactive and opportunistic installations are generally made only for actuated pedestrian movements, so that the LPI is activated only when one or more pedestrians are present to benefit from the LPI on that signal cycle.