

LEADING BICYCLE INTERVALS AND LEADING PEDESTRIAN INTERVALS

Purpose

Extends crossing time for pedestrians and bicyclists at signalized intersections.

Description

Leading bicycle intervals (LBIs) or leading pedestrian intervals (LPIS) are adjustments to traffic signals to give bicyclists or pedestrians a three-to-seven-second head start before motorists enter the intersection.

Estimated Cost



Applicable Locations

LBIs are a treatment option at:

- Intersections with high bicycle volumes
- Intersections with separated bike lanes or contraflow bike lanes
- Intersections where shared-use paths or other bicycle routes cross a major, signalized intersection

LPIS are a treatment option at:

- Signalized intersections.
- Intersections with a significant number of turning vehicles and pedestrian volumes.

Applicable Street Types

- Downtown Boulevard
- Downtown Street
- Boulevard
- Town Center Boulevard
- Town Center Street
- Neighborhood Connector
- Industrial Street

Safety Benefits

- Increase visibility of pedestrians and bicyclists.
- Increase motorist yielding.
- More crossing time provided for pedestrians and bicyclists.

Expected Crash Reduction

Thirteen percent for vehicle-pedestrian crashes.²⁸

An estimated crash reduction has not yet been determined for LBIs.

Design Guidance

LBIs should be installed with:

- Bicycle Signal sign (MUTCD R10-10) if bicycle signal is present, otherwise, direct bicyclists to follow pedestrian signal (MUTCD R9-5).²⁹
- “No Right Turn on Red” sign (MUTCD R10-11).³⁰

LPIs should be installed with:

- High-visibility crosswalk markings, curb ramps, accessible pedestrian signals, and “No Right Turn on Red” sign (MUTCD R10-11).³¹

Considerations

- LBIs or LPIs can be provided actively or provided only when actuated. Active detection requires an accessible pushbutton.
- The length of LPIs or LBIs can be increased where pedestrian or bicyclist volumes are high.
- Right-turn-on-red rules may limit the effectiveness of LBIs and LPIs.
- LPI may be accompanied with an audible noise for visually-impaired pedestrians.

Systemic Safety Potential

LBIs are best as a spot treatment, or on corridors with high bicycle volumes and vehicle turning.

LPIs are suited for systemic use in areas with existing or planned pedestrian signals and high pedestrian and vehicle volumes.

Additional Information

- Pedestrian and Bicycle Information Center — Signals and Signs
- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System

