Safe Transportation for Every Pedestrian (STEP)

Systemic application of cost-effective countermeasures with known safety benefits can help reduce pedestrian fatalities at both uncontrolled and signalized crossing locations.

According to the National Highway Traffic Safety Administration, 2016 witnessed the most pedestrian fatalities since 1990, accounting for approximately 16% of all roadway fatalities (5,987). In 2016, 72% of pedestrian fatalities occurred away from intersections (e.g., mid-block locations) and approximately 26% occurred at intersections. Cost-effective countermeasures can be systemically applied to reduce these crashes and save lives.
Pedestrian Safety Countermeasures

Uncontrolled crossing locations and signalized intersections often give priority to vehicles and may hinder the safety of pedestrians. At signalized intersections equipped with pedestrian signals, conflicts with turning vehicles may occur when pedestrians see a walk signal and vehicles see a left turn signal. By focusing on all pedestrian crossing locations, urban and rural, and taking a systemic approach, agencies can comprehensively address a significant national safety problem and improve quality of life for pedestrians of all ages and abilities.

The following countermeasures can improve pedestrian safety when used in the appropriate roadway context:

**Rectangular rapid flashing beacons** (RRFBs) are active (user-actuated) or passive (automated detection) amber LEDs that use an irregular flash pattern at mid-block or uncontrolled crossing locations. They significantly increase driver yielding behavior. They have been found to reduce crashes by 36-47% (CMF Clearinghouse).

The FHWA issued a new Interim Approval for use of the RRFB in March 2018, [https://mutcd.fhwa.dot.gov/resources/interim_approval/ia21/index.htm](https://mutcd.fhwa.dot.gov/resources/interimApproval/ia21/index.htm), and CTDOT has received statewide approval for installation. In addition, CTDOT provides valuable resources to help with RRFB installation, [https://www.ct.gov/dot/cwp/view.asp?a=3199&q=592210](https://www.ct.gov/dot/cwp/view.asp?a=3199&q=592210).

**Leading pedestrian intervals** (LPIs) at signalized intersections allow pedestrians to walk, usually 3 to 4 seconds, before vehicles get a green signal to turn left or right. The LPI allows a pedestrian to establish presence in the crosswalk before vehicles turn and increases visibility, reduces conflicts, and improves yielding. They have been found to reduce crashes by 60% at intersections (FHWA).

**Crosswalk visibility enhancements** include crosswalk lighting and enhanced signage and markings which help drivers to detect pedestrians, particularly at night. They have been found to reduce crashes by 23-48% (FHWA).

**Raised crosswalks** can serve as a traffic calming measure and reduce vehicle speeds. They have been found to reduce pedestrian crashes by 45% (FHWA).
**Pedestrian crossing/refuge islands** allow pedestrians a safer place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for pedestrians with limited mobility. Raised medians have been found to reduce pedestrian crashes by 46% (FHWA), and pedestrian crossing islands have been found to reduce pedestrian crashes by 56% (FHWA).

**Pedestrian hybrid beacons** (PHBs) provide positive stop control for higher-speed, multilane roadways with high vehicular volumes. The PHB is an intermediate option between a flashing beacon and a full pedestrian signal. They have been found to reduce pedestrian crashes by 69%, total crashes by 29% and serious injury and fatal crashes by 15% (CMF Clearinghouse). The CTDOT has posted information on the High-Intensity Activated Crosswalk (HAWK) on their website at: [https://www.ct.gov/dot/lib/dot/documents/dtrafficdesign/safety/hawk.pdf](https://www.ct.gov/dot/lib/dot/documents/dtrafficdesign/safety/hawk.pdf)

**Road Diets** can reduce vehicle speeds and the number of lanes pedestrians cross, and they can create space to add new pedestrian facilities such as pedestrian crossing/refuge islands. They have been found to reduce crashes by 19-47% (FHWA).
Benefits

- **Improved Safety.** Countermeasures are available that offer proven solutions for reducing pedestrian fatalities at uncontrolled and signalized crossing locations.
- **Targeted Investment.** By focusing on pedestrian crossing locations, agencies can address a significant national safety problem.
- **Enhanced Quality of Life.** Improving crossing opportunities boosts quality of life for pedestrians of all ages and abilities.

Building on the 4 ‘E’ approach (engineering, enforcement, education, and emergency medical services) within each state, communities can deploy proven, cost-effective countermeasures to improve pedestrian safety.

State of the Practice

Communities across the nation are benefitting by using these countermeasures. In New York City, the effects of LPI treatments were dramatic. Where LPIs were installed, the overall number of pedestrians and bicyclists killed or severely injured dropped 37 percent. LPI use in Florida also yielded positive results, including reducing the percentage of vehicle-pedestrian conflicts between 25 and 100 percent at different intersections. The RRFB has greatly increased driver yielding rates in several communities, and a recent study demonstrated that it can reduce pedestrian crashes.


Resources:

- FHWA STEP Program: [https://safety.fhwa.dot.gov/ped_bike/step/](https://safety.fhwa.dot.gov/ped_bike/step/)
- Pedestrian and Bicycle Information Center: [http://www.pedbikeinfo.org/](http://www.pedbikeinfo.org/)
- EDC-5 Orientation Webinar: [https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/edc5-orientation-webinars.cfm](https://www.fhwa.dot.gov/innovation/everydaycounts/edc_5/edc5-orientation-webinars.cfm)

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