

Pedestrian crossing improvements

Simple changes to intersections and crosswalks can prevent pedestrian crashes.

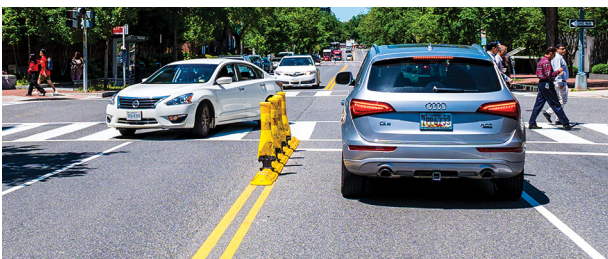
More than 7,000 pedestrians were killed in motor vehicle crashes in 2024, accounting for 18% of all crash fatalities. Around 40% of pedestrian deaths occurred while the victim was trying to cross a road or street.

Physical design improvements

- ▶ **Medians or pedestrian refuge islands at crosswalks** make pedestrians more obvious to drivers and give pedestrians a place to stop in the middle of wide or busy roads. The Federal Highway Administration (FHWA) estimates that medians and refuge islands slash pedestrian crashes at marked crosswalks by about half.¹
- ▶ Raised crosswalks work like speed humps, helping to slow traffic on streets with lower speed limits. A meta-analysis of research on their effectiveness suggests they cut pedestrian crashes that cause injuries by 46%.²



- ▶ **A reduced curb radius** forces vehicles to make sharper turns, lowering speeds. FHWA estimates that a smaller radius reduces pedestrian crashes by 37%.³



- ▶ **Centerline hardening** employs bollards and rubber curbs to prevent drivers from cutting across intersections at a diagonal while turning left. These changes slow turning vehicles and reduce conflicts with pedestrians, an IIHS study in Washington, D.C., showed.⁴

Adjustments to traffic lights

- ▶ **Exclusive pedestrian phasing** stops all vehicle traffic for part or all of the time that the walk signal is illuminated. A study in New York City showed that it reduced pedestrian crashes by 35%.⁵
- ▶ **Split phase timing** stops left- or right-turning vehicles with a red arrow while crossing pedestrians or cyclists have a walk sign. Another study in New York City showed that split phase timing cut pedestrian crashes by 38%.⁶
- ▶ **A leading pedestrian interval** lets pedestrians begin crossing 3 to 7 seconds before the release of turning vehicles. An FHWA study of data from Chicago; New York City; and Charlotte, North Carolina, found it cut pedestrian crashes 19%.⁷

Special pedestrian crossing signals



- ▶ **Pedestrian hybrid beacons** cycle through two yellow warning phases before giving drivers a red signal to stop. Best for challenging crossings because of extended wait times, they reduce pedestrian crashes resulting in an injury or fatality by 45%, a large-scale study conducted in Arizona showed.⁸



- ▶ **Rectangular rapid-flashing beacons (RRFBs)** flash in an irregular pattern when activated by a pedestrian or cyclist to get drivers' attention. Better suited to less-challenging crossings, RRFBs lower pedestrian crashes by 47%, a study pulling together results from 14 U.S. cities showed.⁹

Improving visibility at crosswalks

- ▶ Traditional **streetlights** at intersections cut nighttime pedestrian crashes that cause injuries by 42%.²
- ▶ **Crosswalk illuminators** are LED flood lights that shine horizontally across the street to light up the crosswalk at poorly lit locations. A small-scale IIHS study in Kalamazoo, Michigan, showed that they tripled the odds of drivers yielding to pedestrians at poorly lit locations and delivered even better results when paired with RRFBs.¹⁰
- ▶ **High-visibility crosswalks** use patterns, such as the painted stripes colloquially known as “zebra crossings,” that are visible from farther away than basic, transverse line crosswalks. A study conducted in New York City showed they can reduce pedestrian crashes as much as 48%.⁵
- ▶ **Warning signs** installed in advance of a marked crosswalk lower pedestrian crashes 25%.¹

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