



Countermeasures That Work – Pedestrians

The National Highway Traffic Safety Administration has published its tenth edition of *Countermeasures That Work*, a basic reference to assist State Highway Safety Offices and other highway safety professionals in selecting effective, evidence-based countermeasures for traffic safety problems. This Traffic Tech highlights the effective pedestrian countermeasures from Chapter 8, Pedestrian Safety.

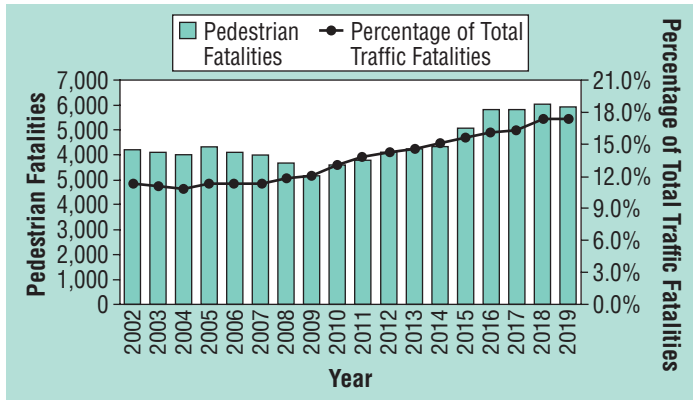
Background

Since 2003 there has been a gradual rise in the proportion of pedestrians among all roadway fatalities. In 2019 there were 6,205 pedestrians killed and approximately 76,000 injured in traffic crashes in the United States. Pedestrians accounted for 17% of traffic fatalities and 2.7% of traffic-related injuries. Of the pedestrian fatalities in 2019,

- 70% were males;
- 31% had blood alcohol concentrations of .08 g/dL or greater;
- 82% occurred in urban areas;
- 73% occurred at non-intersection locations; and
- 76% occurred when it was dark.

Trends in fatality rates—or fatalities adjusted per number of walking trips or miles traveled by walking—are unavailable because there is no systematically collected and consistent measure of walking (exposure) to estimate and compare fatality rates each year.

Pedestrian Fatalities in Motor Vehicle Crashes



Source: NCSA, 2020

Key Factors of Effective Pedestrian Countermeasures

The following sections discuss behavioral countermeasures for pedestrian safety that have been supported by research as consistently effective across situations (★★★★), effective in certain situations (★★★), or promising/likely effective (★★). For more information on these countermeasures, their effectiveness, cost, use, and time to implement, see the full *Countermeasures That Work* report.

School-Age Children

Countermeasure	Effectiveness	Cost	Use	Time
2.1 Elementary-Age Child Pedestrian Training	★★★	\$	Unknown	Short

Elementary-age child pedestrian training equips children with both knowledge and practice of how to walk safely in environments with traffic and other safety hazards. These programs often divide the curriculum by grade groups K-1, 2-3, and 4-5, to keep lessons developmentally appropriate.

Resources are also available to help parents become role models and provide ongoing practice and positive reinforcement. This countermeasure can be implemented in schools, faith-based settings, and other institutions.

Countermeasure	Effectiveness	Cost	Use	Time
2.2 Safe Routes to School	★★★	\$	High	Short

Safe Routes to School (SRTS) is an approach that promotes walking and bicycling to school through infrastructure improvements, enforcement, tools, safety education, and incentives to encourage walking and bicycling to school. SRTS programs are community based and are intended to be comprehensive in nature. Programs include education, training, enforcement and engineering activities to improve traffic safety and reduce or eliminate risky elements of the traffic environment.

Countermeasure	Effectiveness	Cost	Use	Time
2.3 Walking School Buses	★★★	\$	Low	Short

Walking School Buses use volunteer adults, usually parents, to walk a group of students on a specific route to and from school, collecting or dropping off children on the way. Active involvement from communities, schools, and State policy-makers are central to the development and maintenance of walking school bus programs. The presence of other safety

programs such as safe routes to school and school crossing guards is associated with increased school-organized walking school buses. Promotional activities such as educational campaigns and policies supporting comprehensive agendas toward increasing active transport to schools are prerequisites to effective programs.

All Pedestrians

Countermeasure	Effectiveness	Cost	Use	Time
4.1 Pedestrian Safety Zones	★★★★	\$\$\$	Low	Medium

Pedestrian Safety Zones are currently the top-rated countermeasure per effectiveness. The objective of pedestrian safety zones is to increase cost-effectiveness by focusing education, enforcement, and engineering activities to geographic areas and populations where significant pedestrian crash problems exist. Pedestrian zone programs can focus on all identified pedestrian crash problems in a limited geographic area or focus on resolving particular types of problems if those types make up a large portion of the problem.

Countermeasure	Effectiveness	Cost	Use	Time
4.2 Reduce and Enforce Speed Limits	★★★	\$	High	Varies

Reducing and Enforcing Speed Limits reduce speeding in high pedestrian traffic areas, increasing reaction time for both drivers and pedestrians and helping them to avoid crashes. This also reduces the severity of pedestrian injuries when crashes do occur. Higher vehicle speeds produce more frequent and more serious pedestrian crashes and casualties. However, without enforcement of new speed limits, awareness and buy-in from the public, and environmental/infrastructural changes, reducing speed limits won't be nearly as effective.

Countermeasure	Effectiveness	Cost	Use	Time
4.3 Conspicuity Enhancement	★★★	\$	Low	Medium

Enhancing Conspicuity for pedestrians increases the opportunity for drivers to see and avoid pedestrians, particularly when it is dark, since this is when 75% of pedestrian fatalities occur nationally. There are many ways to enhance conspicuity such as retroreflective materials built into shoes, gloves, vests and caps as well as strobing or flashing lights. The difficulty with most of these devices is that the user must decide in advance to take and use them. Due to this extra step and the

appearance of the conspicuity enhancements not looking like "normal" clothing, they are very much underused.

Countermeasure	Effectiveness	Cost	Use	Time
4.4 Enforcement Strategies	★★★	\$\$	Low	Short

Enforcement Strategies increase compliance with pedestrian and motorist traffic laws that are most likely to enhance the safety of pedestrians. Enforcement strategies are most effective when they are highly visible and publicized. This reinforces the required behavior and raises the expectation that failure to comply may result in legal consequences. Enforcement campaigns should be aimed at drivers and pedestrians, starting with the communications and outreach efforts that announce, describe, and publicize the traffic safety campaign through community meetings, media coverage, social media, mass emails, and signage.

Countermeasures Relating to Each Other

Although countermeasures are identified generally to a specific traffic safety area, countermeasures often affect the same populations and geographic areas and could be deployed jointly to address traffic safety problems in more comprehensive ways. *Speeding countermeasures* that seek to reduce vehicle speeds could be included with other *pedestrian safety countermeasures* such as engineering/infrastructure changes to enhance pedestrian safety. *Bicycle safety countermeasures* for children could be combined with *pedestrian safety countermeasures* to create well-rounded safety curricula.

Conclusion

There are several countermeasures that can be used to effectively create safe behaviors, environments, and policies to improve pedestrian safety. The most effective programs rely on comprehensive strategies, targeted implementation, and community-based support.

Reference

Venkatraman, V., Richard, C. M., Magee, K., & Johnson, K. (2021, July). *Countermeasures that work: A highway safety countermeasure guide for State Highway Safety Offices*, 10th edition, 2020 (Report No. DOT HS 813 097). National Highway Traffic Safety Administration. www.nhtsa.gov/sites/nhtsa.gov/files/2021-09/15100_Countermeasures10th_080621_v5_tag.pdf

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