



PUBLIC HEALTH IMPACT: COMMUNITY SPEED REDUCTION

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Health Resources in Action
Advancing Public Health and Medical Research

WHAT'S THE ISSUE?

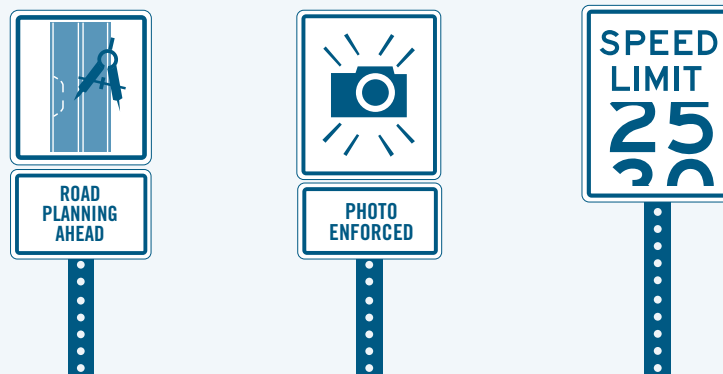
Motor vehicle crashes, which are the leading cause of unintentional injury deaths in the United States each year, killed over 30,000 people in 2010.^{1,2} Vehicle speed is a major factor in many of these collisions, and higher speeds are especially dangerous for pedestrians and cyclists when collisions occur.

Multiple factors contribute to the problem of unsafe traffic speed. Among the most common are road designs that encourage higher speeds, speed limits that are set too high, and speeding (people driving faster than the speed limit or too fast for road conditions). Speeding is the most studied of the three factors.

Police reports indicate that speeding played a role in nearly 1 in 3 crash deaths (9,944 people in 2011).³ In fact, almost 9 out of 10 speeding-related deaths took place on non-Interstate highways, most of which have speed limits of 55 mph or less.³

Small traffic speed reductions can lead to fewer motor vehicle crashes, injuries, and deaths.⁸ Slower speeds may also promote physical activity by making roads safer and more inviting for pedestrians and cyclists — especially when combined with specific road features for those users. Proven measures exist to reduce vehicle speeds to levels that are safer for everyone on the road.

In 2011, **SPEEDING** played a role in **NEARLY 1 IN 3** crash deaths.



Better ROAD DESIGNS, AUTOMATED ENFORCEMENT, and LOWER SPEED LIMITS can **SLOW TRAFFIC** and **SAVE LIVES.**

Controlling speed

Communities have traditionally used the following strategies to control vehicle speed:



Engineering and Design: Building or changing the road to slow traffic



Enforcement: Encouraging drivers to adhere to posted speed limits through police-issued citations or tickets



Education: Building public awareness, changing perceptions, and influencing driver behavior through communication efforts

While all three can be used to reduce speeds, this brief focuses on community-wide engineering, design, and enforcement strategies that require motorists to drive at safe speeds.

Community-wide speed reduction

Speed control efforts can be applied in a community-wide fashion or at hot-spot intersections or streets where collisions and/or speeding occur frequently. The community-wide strategies described in this brief include those that are implemented in:

- Large areas, such as a neighborhood,
- Networks of residential or high volume/high capacity arterial roads, and
- Densely populated areas where pedestrians and cyclists are often present.

SMALL INCREASES in vehicle speed put pedestrians at much GREATER RISK OF DEATH⁸

PEDESTRIAN DEATHS / 100 AUTOMOBILE-PEDESTRIAN COLLISIONS



20mph



AT 20 MPH, THE RISK OF DEATH IS 6%



30mph



THE RISK OF DEATH AT 30 MPH IS 19%
3 TIMES GREATER THAN 20 MPH



45mph



THE RISK OF DEATH AT 45 MPH IS 65%
11 TIMES GREATER THAN 20 MPH

WHAT DO WE KNOW ABOUT THE PROBLEM?

- **Higher speeds mean more crashes.** Studies show that faster traffic leads to more collisions, injuries, and fatalities.^{4, 5}
- **Speeding presents a danger on all types of roads.** Speeding is a major factor in crashes on roads with low and high speed limits.³
- **Speeding is pervasive in the United States.** Data indicate that most drivers on United States roads travel faster than the posted speed limit.⁶
- **Small increases in speed lead to high risks for pedestrians — especially older adult pedestrians.**^{7, 8}
A pedestrian hit at 30 mph is nearly three times more likely to die than one hit at 20 mph.⁸ At 20 mph, a 70-year-old pedestrian is as likely to die as a 30-year-old hit by a vehicle traveling at 32 mph.⁸
- **High traffic speed and other road hazards are especially problematic for populations who rely on walking, bicycling, and public transit.**^{9, 10, 11, 12}
Low-income and minority neighborhoods often have less investment in pedestrian and cycling infrastructure, less access to personal vehicles, and a greater reliance on public transit, all resulting in higher rates of road traffic injuries.^{1, 13, 14, 15}
- **High vehicle speed contributes to real and perceived road dangers that make people less likely to walk and bike.**¹⁶
- **The economic cost to society of speeding-related crashes is enormous** — estimated at \$40.4 billion per year.⁶

Dispelling some **COMMON MYTHS** about speed



Myth: Lower speed limits cause traffic delays.

Fact: Lower speed limits may actually improve traffic flow and reduce delays at intersections, making journey time the same or quicker in some cases.^{18, 20}



Myth: A few more miles per hour in speed doesn't make a difference in safety.

Fact: At slow speeds, risk of severe injury and fatality is low. But as speed increases above 20 mph, small changes in speed lead to dramatic increases in risk of death and injury upon impact.^{4, 19}



Myth: Traffic calming measures slow down emergency vehicles.

Fact: Some traffic calming devices allow rapid passage for emergency responders.^{20, 21}

WHAT CAN WE DO?

Speed reduction interventions can reduce vehicle speeds, prevent collisions, and save lives.

The following approaches have been successful in communities across the United States and around the world:

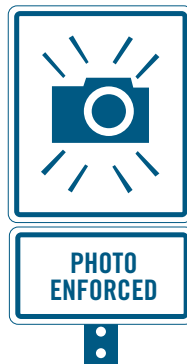


1. Design and retrofit road networks to ensure safe speeds for all road users (motorists, cyclists and pedestrians).

Road engineering — such as design of intersections, lane width, or curves along the road — influences the speed that cars can travel. Regardless of the posted speed, road engineering can make drivers feel comfortable traveling at higher or lower speeds. Some communities have

adopted a Complete Streets strategy, which requires road designs that provide safe access for all users. Complete Streets policies are adopted across multiple agencies and departments. Such policies help guide project decision-making processes during road planning, design, engineering, and maintenance.

- **Install traffic calming measures that protect vulnerable road users.** Physically changing the road with traffic calming measures slows down drivers and reduces injuries and fatalities.^{22, 23} These measures include lane-narrowing, raised crosswalks, speed humps, and road diets. Many of these traffic calming features are also positively associated with increased walking and bicycling.^{24, 25, 26}
- **Create designated slow zones.**²⁷ A slow zone is a street or group of local streets designated for reduced speeds through signs, road markings, and traffic calming, engineering, and design measures.²⁸ In one city, the introduction of slow zones was associated with a 42 percent reduction in traffic crash injuries.²⁹ Some cities have created slow zones around schools and parks or in other neighborhood areas.



2. Use automated technologies to enforce speed limits.

Enforcing speed limits is an important tool for discouraging drivers from speeding. Many studies have shown that using speed cameras to document speed and to issue tickets to violators reduces crashes, injuries, and fatalities.³⁰ Automated speed enforcement programs use mobile or fixed speed cameras and radar speed displays to measure vehicle speed and, in some

cases, automatically issue tickets. In one county, in the first year of use, injury and fatality collisions were reduced by almost 40 percent.³¹ Automated enforcement technologies are a cost-effective way to augment traditional traffic enforcement and further reduce speed-related injuries and fatalities.³²



3. Set speed limits for the safety of all road users.³

Sometimes, speed limits are set at speeds that are unsafe for the context (for example, a 40 mph speed limit in a high pedestrian area). Some local and state governments have partnered to lower posted speed limits on roads that meet certain criteria. Other states have legislated lower default speed limits (e.g., to 25 mph) on all residential

roads, with some exemptions for major thoroughfares. The U.S. Department of Transportation's Manual on Uniform Traffic Control Devices and USLIMITS2 tool provide guidance to state and local agencies for setting safe, reasonable speed limits, taking multiple factors into account.^{34, 35} Reducing speed limits alone may decrease vehicle speeds, but doing so is more effective when accompanied by engineering, design, enforcement, and education.^{36, 37}

To learn more about how speed reduction can benefit public health:

- Speed Reduction Fact Sheet: Opportunities to Improve Current Practice
- Community Speed Reduction and Public Health: A Technical Report

Case Studies:

- Chicago, Illinois: Child Safety Zones
- Columbia, Missouri: Lowering The Posted Speed Limit On Residential Streets
- New York City: Neighborhood Slow Zones
- Portland, Oregon: Neighborhood Greenway Initiative
- Seattle, Washington: A Multi-Faceted Approach To Speed Reduction
- Washington, DC: Automated Speed Enforcement



Credit: www.pedbikeimages.com/Carl Sundstrom



CASE STUDIES

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