# Countermeasures That Work – Speeding and Speed Management

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 problem areas. This Traffic Tech highlights the effective speed management countermeasures from Chapter 3, Speeding and Speed Management.

Background

NHTSA defines a crash as speeding-related if any driver involved is charged with a speeding-related offense or if a police officer indicates that racing, driving too fast for conditions, or exceeding the speed limit was a contributing factor in the crash. Since 2009, speeding-related fatal crashes have declined from 31% to 26% of all fatal crashes. Speeding-related fatalities are commonly characterized by the following:

- Male drivers
- Younger drivers
- Alcohol use
- Seat belt non-use
- Driver not properly licensed
- Nighttime hours
- Wet and icy road surfaces
- Motorcycle riders
- Non-interstate rural and urban roads
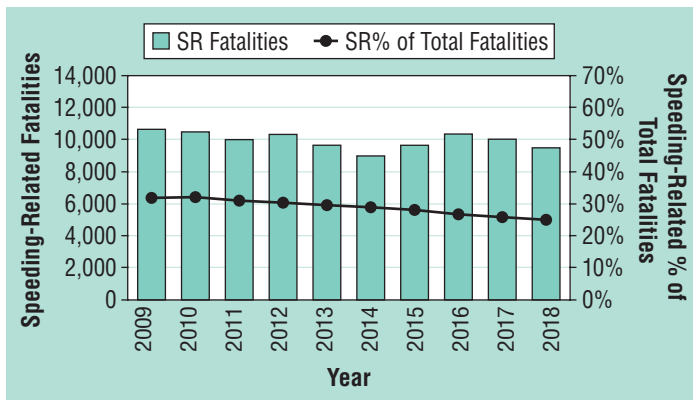
Source: NCSA (2020)

Research across various studies on speeder-types has revealed important differences across groups in speeding behavior and other characteristics. For example, frequent or severe speeders were more likely to have: more speeding citations; higher maximum speeds and high-speed variability; greater acceptance of, and engagement in, other risky and aggressive driving behaviors (e.g., seat belt non-use, alcohol consumption, texting, tailgating, cutting others off); and a perception of posted speed limits as guidelines rather than strict limits.

Strategies to Reduce Speeding and Aggressive Driving

Countermeasures That Work identifies effective speeding and aggressive-driving countermeasures as involving a comprehensive and coordinated approach by State and local highway safety offices, engineering offices, and law enforcement focused on enforcement, education, and engineering (i.e., road calming measures like roundabout intersection designs and lane narrowing). No strategy will be appropriate for all locations, and combinations of treatments may be needed to obtain speed limit compliance and achieve crash reduction goals; however, any measures to reduce average operating speeds are expected to reduce injury crashes and fatal crashes. Even small changes in average speed can have substantial affects.

The following sections discuss behavioral countermeasures for reducing speed and speeding-related crashes 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* report.

Laws

Countermeasure	Effectiveness
1.1 Speed Limits	★★★★★†

† When enforced and obeyed

Speed Limits are one part of the system to control driving speeds. In general, changing a posted speed limit will alter drivers' average speed in the intended direction, resulting in an exponential effect on the fatality rate. Important considerations to implementing this countermeasure include

public acceptance; determining and setting rational, or credible, speed limits; using variable speed limits and work zone speed limits where/when appropriate; providing drivers with advanced warning of speed limit changes; and approaching speed management as one component of an overall traffic safety plan (e.g., *Vision Zero*). Some cost and time considerations involve new signs, publicizing the new limit, and enforcement of the new limit. For the most effective results, changes to the posted speed limit should be accompanied by education, enforcement activities, and supportive adjudication, which are essential to this countermeasure.

Enforcement

Countermeasure	Effectiveness
2.1 Automated Enforcement	★★★★★

Automated Enforcement is one component of a broader speed management program used to support traditional law enforcement efforts. Types of automated enforcement, such as speed cameras and red-light cameras, are effective at reducing speed and most types of crashes in enforced areas (some mild spillover effects may be seen on unenforced streets). Important cost considerations for implementing this countermeasure include equipment choices (e.g., purchased or leased cameras); operational and administrative characteristics of the program (e.g., contracting vendors to maintain cameras and process images and violations); and specific negotiations with vendors (e.g., fixed monthly or negotiated fees). Other considerations include the time required to plan, publicize, and implement (after necessary legislation is enacted); public acceptance; and enforcement thresholds. Given the significant cost to implement, less expensive engineering solutions should be sought prior to implementation. However, if implemented, a mix of overt and covert approaches may be most effective (e.g., warning signage indicating their presence versus none).

Communications and Outreach

Countermeasure	Effectiveness
4.1 Communications and Outreach Supporting Enforcement	★★★

Communications and Outreach Supporting Enforcement are complementary and essential parts of successful speed and aggressive-driving enforcement programs. In fact, programs are often more successful when they include strong communications campaigns. Media campaigns should provide information about the programs, including expected safety benefits, persuade motorists that detection and punishment for violations is likely, and be tied to vigorous enforcement. For the most effective impact, campaign messages should be pre-tested; relevant to the target audience; preferably delivered via personal communications or at the roadside (e.g., variable- or mixed-message signs) versus mass media; and of sufficient intensity and duration to be perceived and noticed. Important consideration to implementing this countermeasure is the time for planning and implementation, and the cost of good media.

Conclusion

The most effective speed management programs rely on comprehensive and coordinated strategies with targeted implementation. These strategies involve the use of evidence-based countermeasures to effectively address speeding-related behavior. For a well-rounded safety curriculum, the simultaneous implementation of various countermeasures should be considered. This strategy may involve speeding-related countermeasures, or those addressing related, or geographically similar, traffic safety issues (e.g., impaired driving, pedestrians/bicyclists).

References

Venkatraman, V., Richard, C. M., & Magee, K. (2021, July). *Countermeasures that work: A highway safety countermeasure guide for State Highway Safety Offices,* 10th edition (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

Suggested APA format citation for this report:

Jeleniewski, S. A. (2021, November). *Countermeasures that work: Speeding and speed management* (Traffic Tech. Report No. DOT HS 813 204). National Highway Traffic Safety Administration.

15201-112321-v3