NHTSA

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION

Making ‘Countermeasures That Work’ Work for You

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NHTSA, Office of Behavioral Safety Research

TPB Transportation Safety Subcommittee: April 9th, 2024

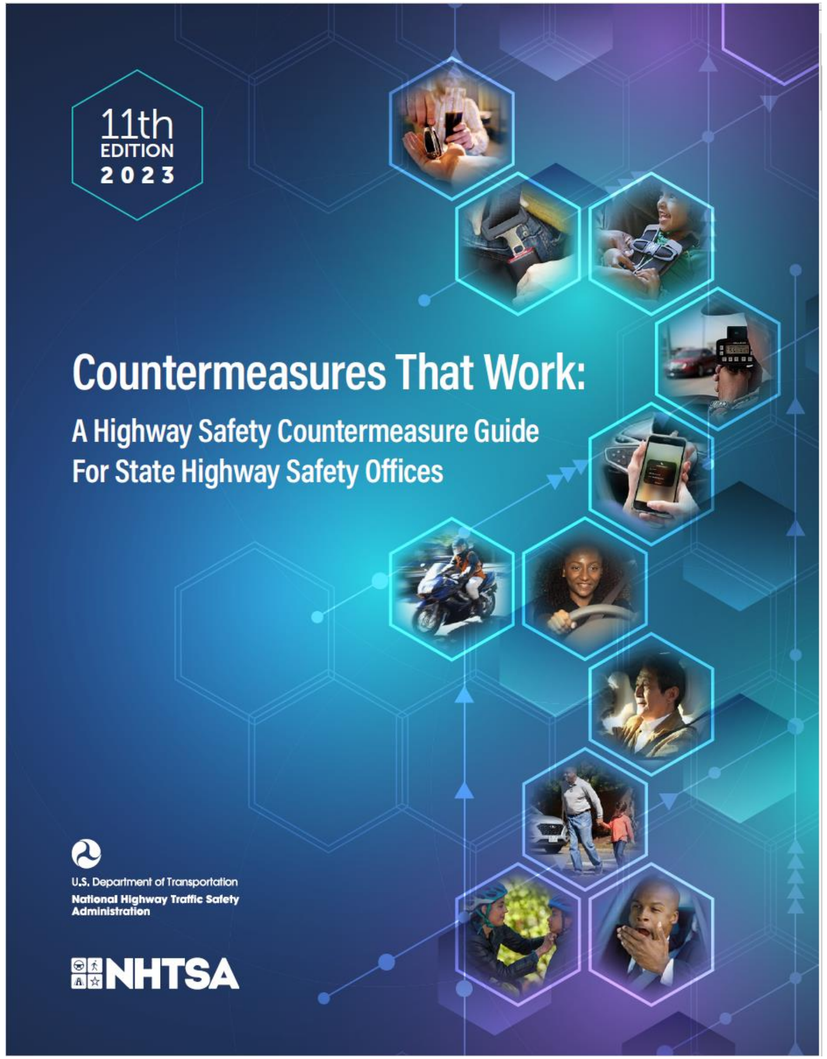
Overview

1. What is CMTW?
2. What is the Effectiveness Star-Rating System?
3. What Topics are Covered?
4. What is Included?
5. E-Version Demonstration
6. Speeding & Speed Management CMs

Countermeasures That Work (CMTW)

What is it?

Basic reference to assist State Highway Safety Offices and other professionals interested in highway safety in selecting effective, evidence-based countermeasures for traffic safety problem areas.



What is the Effectiveness Star-Rating System?

Stars	Effectiveness
★★★★★	Demonstrated to be effective by several high-quality evaluations with consistent results.
★★★★	Demonstrated to be effective in certain situations.
★★★	Likely to be effective based on balance of evidence from high-quality evaluations.
★★	Limited evaluation evidence, but adheres to principles of human behavior and may be effective if implemented well.
★	No evaluation evidence, but adheres to principles of human behavior and may be effective if implemented well.

* Based primarily on demonstrated reductions in crashes and injuries.

Types of Studies Considered

- Randomized Control Trials (few)
- Quasi-experimental studies
- Cohort and case-control analytic studies
- Observational studies
- Time series
- Case-studies
- Surveys

What Topics are Covered?

- Alcohol-Impaired Driving
- Drug-Impaired Driving
- Seat Belts and Child Restraints
- Speeding and Speed Management
- Distracted Driving
- Motorcycle Safety
- Young Drivers
- Older Drivers
- Pedestrian Safety
- Bicycle Safety
- Drowsy Driving

What is Included in Each Chapter?

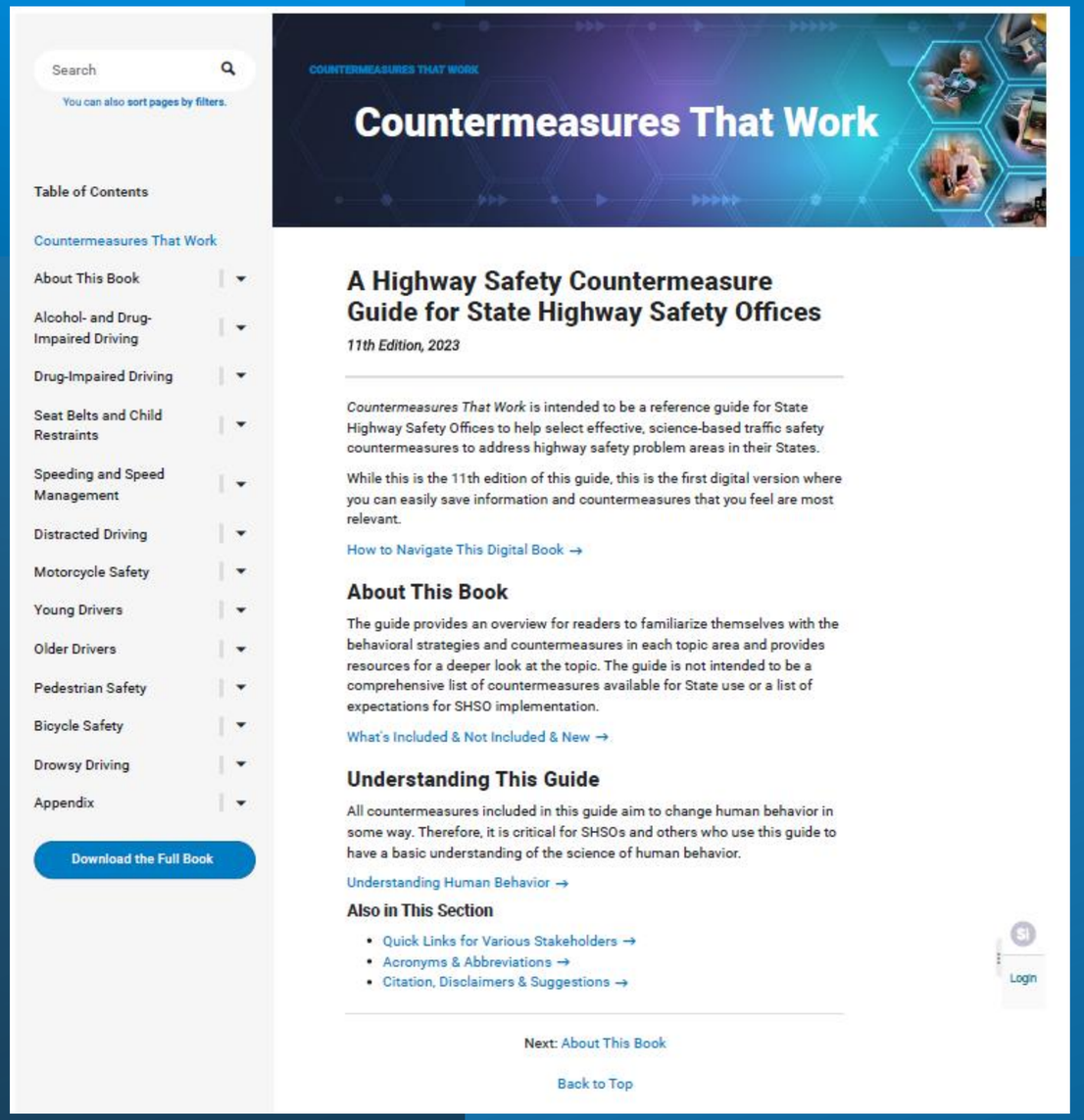
- One chapter per problem area
- Brief introduction of the problem area's size & characteristics
  - Overview
  - Understanding the problem
  - Data/surveillance
  - Emerging issues
  - Key resources
- Table listing specific CMs relevant to SHSOs
  - Summarizes CM effectiveness, cost, use, & implementation time
- Each CM discussed in ~1-2 pages
  - References to the most important research summaries & individual studies

11th Edition Improved Organization and Consistency

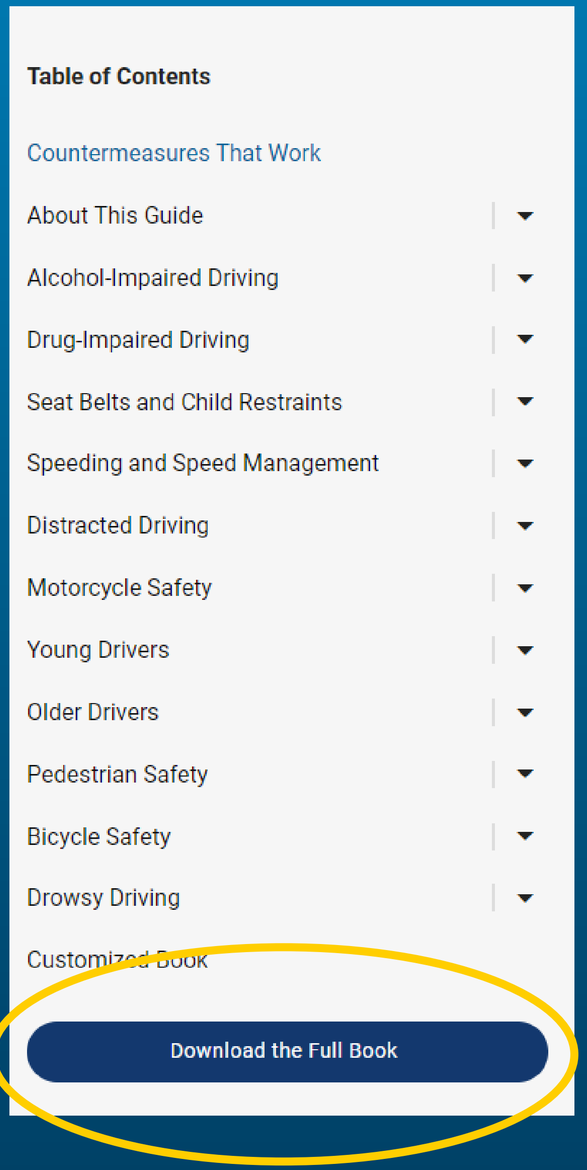
- Chapter introduction uniform sections
- Uniform system for presenting CMs – 4 categories
  - Legislation and licensing
  - Enforcement
  - Other strategies for behavior change
  - Approaches that are unproven or need further evaluation
- CM names were refined to be more descriptive to aid States in preparing SHSPs

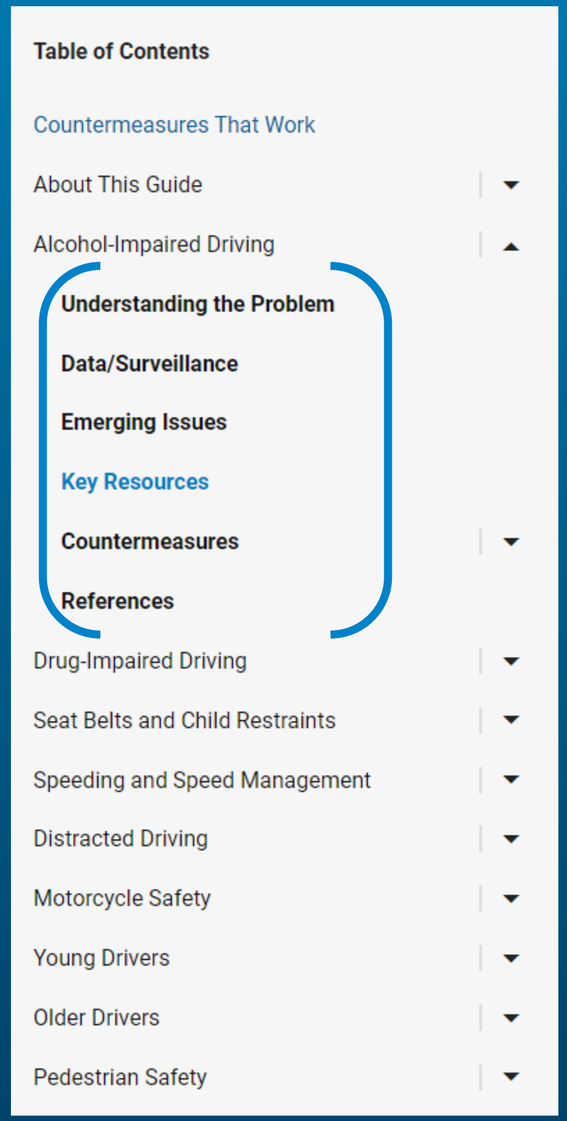
Web Demo

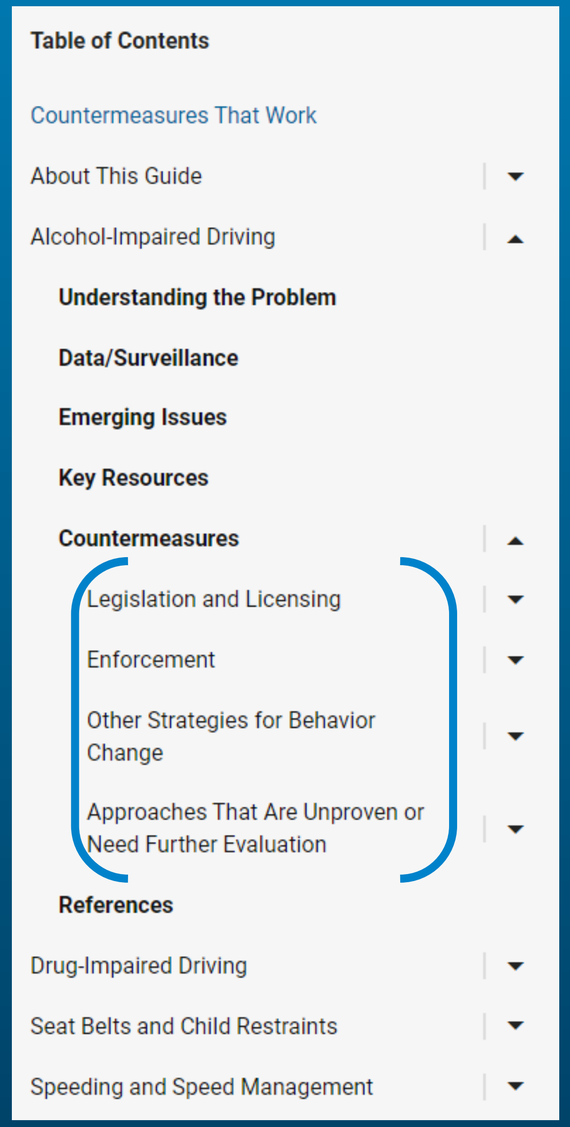
https://www.nhtsa.gov/countermeasures/

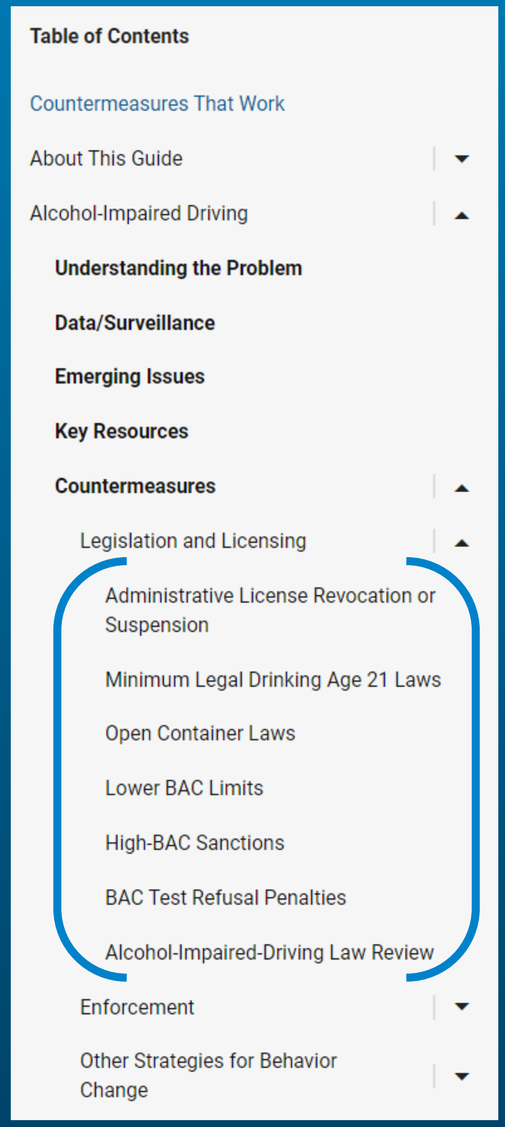


Organization of E-Version









Creating a Customized Book: *Adding Book Pages*

A Highway Safety Countermeasure Guide for State Highway Safety Offices

11th Edition, 2023

Countermeasures That Work is intended to be a reference guide for State Highway Safety Offices to help select effective, science-based traffic safety countermeasures to address highway safety problem areas in their States.

While this is the 11th edition of this guide, this is the first digital version where you can easily save information and countermeasures that you feel are most relevant.

How to Navigate This Digital Book →

About This Guide

The guide provides an overview for readers to familiarize themselves with the behavioral
and countermeasures in each topic area and provides resources for a deeper look at the
guide is not intended to be a comprehensive list of countermeasures available for State u
list of expectations for SHSO implementation.

What's Included & Not Included & New →

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Administrative License Revocation or Suspension

Effectiveness: ★★★★★ Cost: $$$ Use: **High** Time: **Medium**

Administrative license suspension laws allow law enforcement and driver licensing authorities to suspend a driver's license if the driver fails or refuses to take a BAC test. Administrative license revocation laws are similar, except the offender must re-apply for a license once the suspension period ends. Usually, the arresting officer takes the license at the time a driver fails or refuses a BAC test. The driver typically receives a temporary license that allows time to make other transportation arrangements and to request and receive an administrative hearing or review. From a NHTSA review (2008a), in most jurisdictions at that time, an offender could obtain an occupational or hardship license during part or all the revocation or suspension period. NHTSA recommends that ALR laws include a minimum license suspension of 90 days (NHTSA, 2006a). The National Committee on Uniform Traffic Laws and Ordinances (NCUTLO, 2000) has a model ALR law.

ALR and ALS laws provide for swift and certain penalties for DWI rather than the lengthy and uncertain outcomes of criminal courts. They also protect the driving public by removing some DWI offenders from the road (but see the discussion of driving with a suspended license, under "other considerations"). The NCHRP Report 500 guide on reducing impaired-driving (Goodwin et al., 2005) and NHTSA's *Traffic Safety Facts* on ALR (NHTSA, 2008a) have more information about ALR laws.

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- **Alcohol-Impaired Driving**
  Administrative License Revocation or Suspension
- **Alcohol-Impaired Driving**
  Minimum Legal Drinking Age 21 Laws
- **Drug-Impaired Driving**
  Understanding the Problem
- **Drug-Impaired Driving**
  Enforcement of Drug-Impaired Driving
- **Drug-Impaired Driving**
  Education Regarding Medications

COUNTERMEASURES THAT WORK

Customized Book

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  Enforcement of Drug-Impaired Driving
- **Drug-Impaired Driving**
  Education Regarding Medications
- **Alcohol-Impaired Driving**
  Lower BAC Limits

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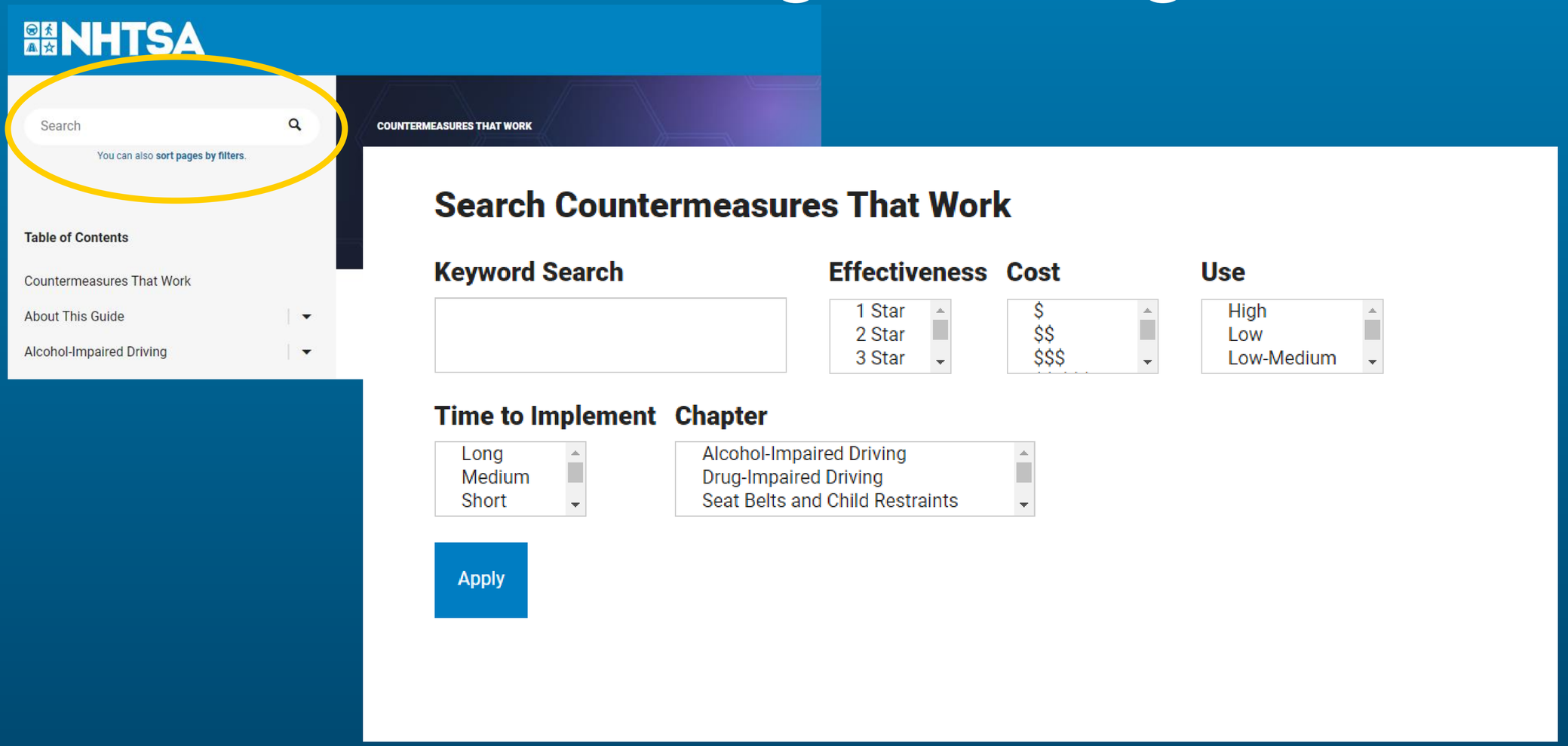
Searching & Using Filters



Countermeasures That Work

Search Countermeasures That Work

Keyword Search

Effectiveness
- 3 Star
- 4 Star
- 5 Star

Cost
- $
- $$
- $$$

Time to Implement
- Long
- Medium
- Short

Chapter
- Alcohol-Impaired Driving
- Drug-Impaired Driving
- Seat Belts and Child Restraints

Apply

21 Results

21 Results Clear filters

TITLE	EFFECTIVENESS	COST	USE	TIME TO IMPLEMENT	CHAPTER
Short-Term, High-Visibility Child Passenger Safety Law Enforcement	5 Star	$$$	Medium	Medium	Seat Belts and Child Restraints
Administrative License Revocation or Suspension	5 Star	$$$	High	Medium	Alcohol-Impaired Driving
Alcohol Ignition Interlocks	5 Star	$$	Medium	Medium	Alcohol-Impaired Driving
Alcohol Problem Assessment and Treatment	5 Star	Varies	High	Varies	Alcohol-Impaired Driving
Alcohol Screening and Brief Intervention	5 Star	$$	Medium	Short	Alcohol-Impaired Driving
Dynamic Speed Display/Feedback Signs	5 Star	$	High	Short	Speeding and Speed Management
GDL Intermediate License Nighttime Restrictions	5 Star	$	High	Medium	Young Drivers
GDL Intermediate License Passenger Restrictions	5 Star	$	High	Medium	Young Drivers
GDL Learner's Permit	5 Star	$	High	Medium	Young Drivers

Using One Filter

Using Multiple Filters

Countermeasures That Work

Search Countermeasures That Work

Keyword Search

Effectiveness

3 Star
4 Star
5 Star

Cost

$
$$
$$$

Time to Implement

Long
Medium
Short

Chapter

Alcohol-Impaired Driving
Drug-Impaired Driving
Seat Belts and Child Restraints

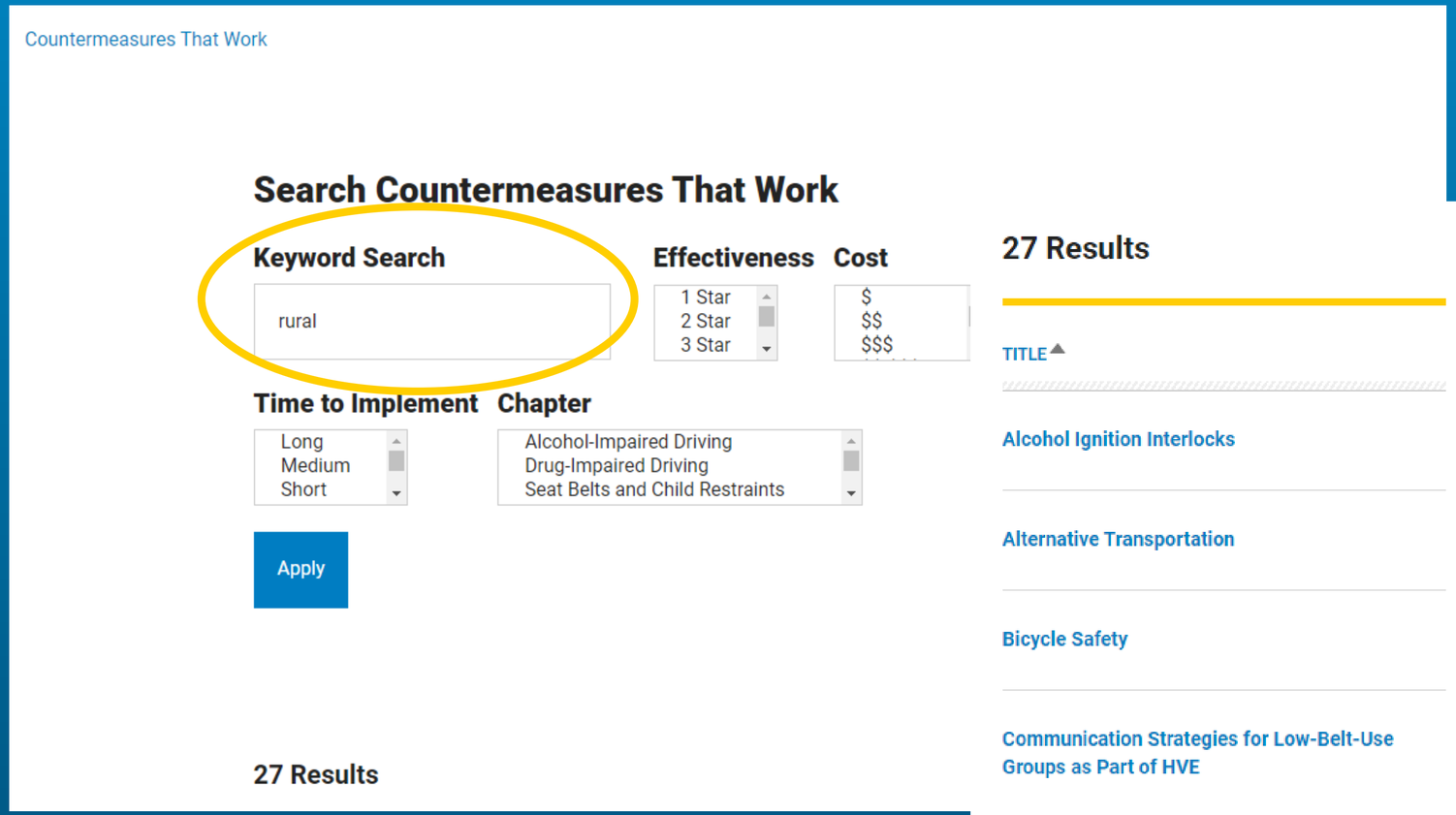
Apply

7 Results

7 Results

Clear filters

TITLE	EFFECTIVENESS	COST	USE	TIME TO IMPLEMENT	CHAPTER
Administrative License Revocation or Suspension	5 Star	$$$	High	Medium	Alcohol-Impaired Driving
Alcohol Ignition Interlocks	5 Star	$$	Medium	Medium	Alcohol-Impaired Driving
Alcohol Problem Assessment and Treatment	5 Star	Varies	High	Varies	Alcohol-Impaired Driving
Alcohol Screening and Brief Intervention	5 Star	$$	Medium	Short	Alcohol-Impaired Driving
Minimum Legal Drinking Age 21 Laws	5 Star	$$$	High	Short	Alcohol-Impaired Driving
Open Container Laws	5 Star	$	High	Short	Alcohol-Impaired Driving
Publicized Sobriety Checkpoints	5 Star	$$$	Medium	Short	Alcohol-Impaired Driving



Using Keyword Search

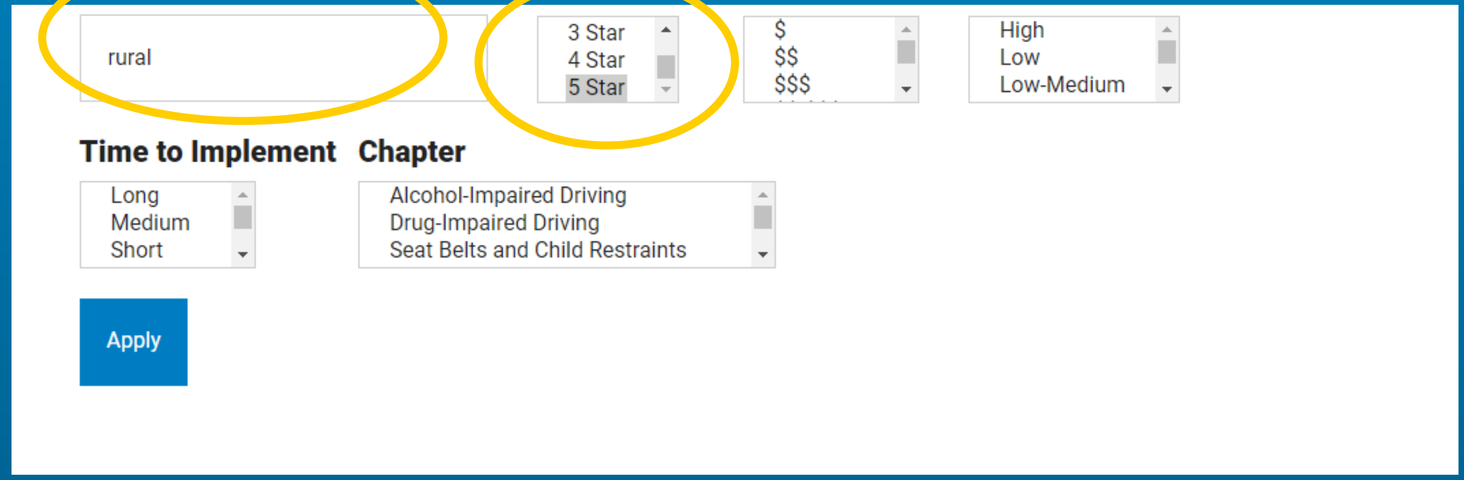
27 Results

TITLE ▲

- Alcohol Ignition Interlocks
- Alternative Transportation
- Bicycle Safety
- Communication Strategies for Low-Belt-Use Groups as Part of HVE
- Communications and Outreach on Drowsy Driving
- DWI Courts
- Dynamic Speed Display/Feedback Signs
- High-Visibility Enforcement

- *First-time offenders:* There are special issues concerning interlocks and first-time offenders. Historically, interlock programs were mandatory for repeat offenders and voluntary for first-time offenders (Robertson et al., 2010). In many jurisdictions first-time offenders are not monitored by the court system. Consequently, it can be difficult to respond to violations and to ensure that first-time offenders participate, install the devices, and complete the interlock program. Despite challenges in closely monitoring first-time offenders, evidence suggests interlocks effectively reduce recidivism among this group while the interlock is installed (Marques et al., 2010; McCartt et al., 2013; McCartt et al., 2018). For more information about issues in implementing interlock programs with first-time offenders, see Robertson et al. (2010).
- *Rural areas:* For offenders living in rural areas, access to an interlock service provider may be problematic (Cheesman et al., 2014). Interlock service providers may be limited or non-existent in rural jurisdictions, requiring offenders to drive long distances to get an interlock installed or serviced. To improve the availability of interlocks, States can require vendors to provide service to rural areas as a prerequisite for obtaining a contract with the State (Mayer, 2014).
- *Public support:* There is strong support among the general public for ignition interlocks. In national surveys, approximately 80% of respondents support requiring interlocks for drivers convicted of DWI, including first offenders (AAAFTS, 2018; McCartt, Wells, & Teoh, 2010). Moreover, about 65% of respondents favored having alcohol detection technology in *all* new vehicles. The general public also believes strongly that interlocks work. In a NHTSA survey, respondents were asked about the effectiveness of eight strategies to reduce or prevent impaired driving. Interlocks ranked highest in the percentage who rated the strategy "very effective" (63%) (Moulton et al., 2010).
- *General deterrence:* The implementation of ignition interlock programs targeting DWI offenders does not seem to produce a general deterrence effect among the broader driving population. An evaluation of general deterrence was conducted in California by comparing recidivism rates in four counties that participated in a pilot program involving mandatory interlock installation to recidivism rates in all other California counties (Chapman et al., 2015). The study found that mandatory interlock installation was ineffective at reducing county-wide DWI recidivism below those of the comparison counties. This lack of difference in conviction rates held for drivers with one, two, or three or more prior DWI convictions. Note that this study did not track local advertising of the program in the four pilot counties, so it is unknown if the absence of a general deterrence effect was affected by the level of outreach effort.

Using Keyword Search & Filters



5 Results

Clear filters

TITLE	EFFECTIVENESS	COST	USE	TIME TO IMPLEMENT	CHAPTER
Alcohol Ignition Interlocks	5 Star	$$	Medium	Medium	Alcohol-Impaired Driving
Dynamic Speed Display/Feedback Signs	5 Star	$	High	Short	Speeding and Speed Management
Lower Speed Limits	5 Star	$	High	Varies	Speeding and Speed Management
Primary Enforcement Seat Belt Use Laws	5 Star	$	Medium	Short	Seat Belts and Child Restraints
Publicized Sobriety Checkpoints	5 Star	$$$	Medium	Short	Alcohol-Impaired Driving

Speed & Speed Management Countermeasures

Legislation and Licensing

Countermeasure	Effectiveness	Cost	Use	Time
Lower Speed Limits	★★★★★	$	High	Varies
Variable Speed Limits	★★	$$$	Medium	Varies
Increasing Penalties	★★★★	Varies	High	Varies

Enforcement

Countermeasure	Effectiveness	Cost	Use	Time
Speed Safety Camera Enforcement	★★★★★	Varies	Low	Medium
High-Visibility Enforcement	★★★★	$$$	Medium	Medium

Other Strategies for Behavior Change

Countermeasure	Effectiveness	Cost	Use	Time
Dynamic Speed Display/Feedback Signs	★★★★★	$	High	Short
Intelligent Speed Assistance	★★★	Varies	Unknown	Varies

Approaches That Are Unproven or Need Further Evaluation

Countermeasure
Aggressive Driving and Other Laws
Diversion and Plea Agreements/Traffic Violator School

Speeding and Speed Management Countermeasures

- **Dynamic Speed Display/Feedback Signs**
  - Separated from Other Enforcement Methods
- **Increasing Penalties**
  - 2 star → 4 star
- **Intelligent Speed Assistance**
  - New

Dynamic Speed Display/ Feedback Signs

Effectiveness: ★★★★★ Cost: $ Use: **High** Time: **Short**

- A 2021 meta-analysis shows these devices are effective at reducing speed at the installation location.
- Speeds rebound quickly downstream –consider permanent installations.
- Most useful where drivers already perceive a need to slow down (school zones, curves, work zones).
- Use of visible law-enforcement may enhance effectiveness.

Increasing Penalties

Effectiveness: ★★★★ Cost: **Varies** Use: **High** Time: **Varies**

- Population-level deterrence
  - The greatest effect of increasing fixed penalties seems to apply only to locations with a high level of enforcement (fixed speed cameras) or the automatic application of penalties

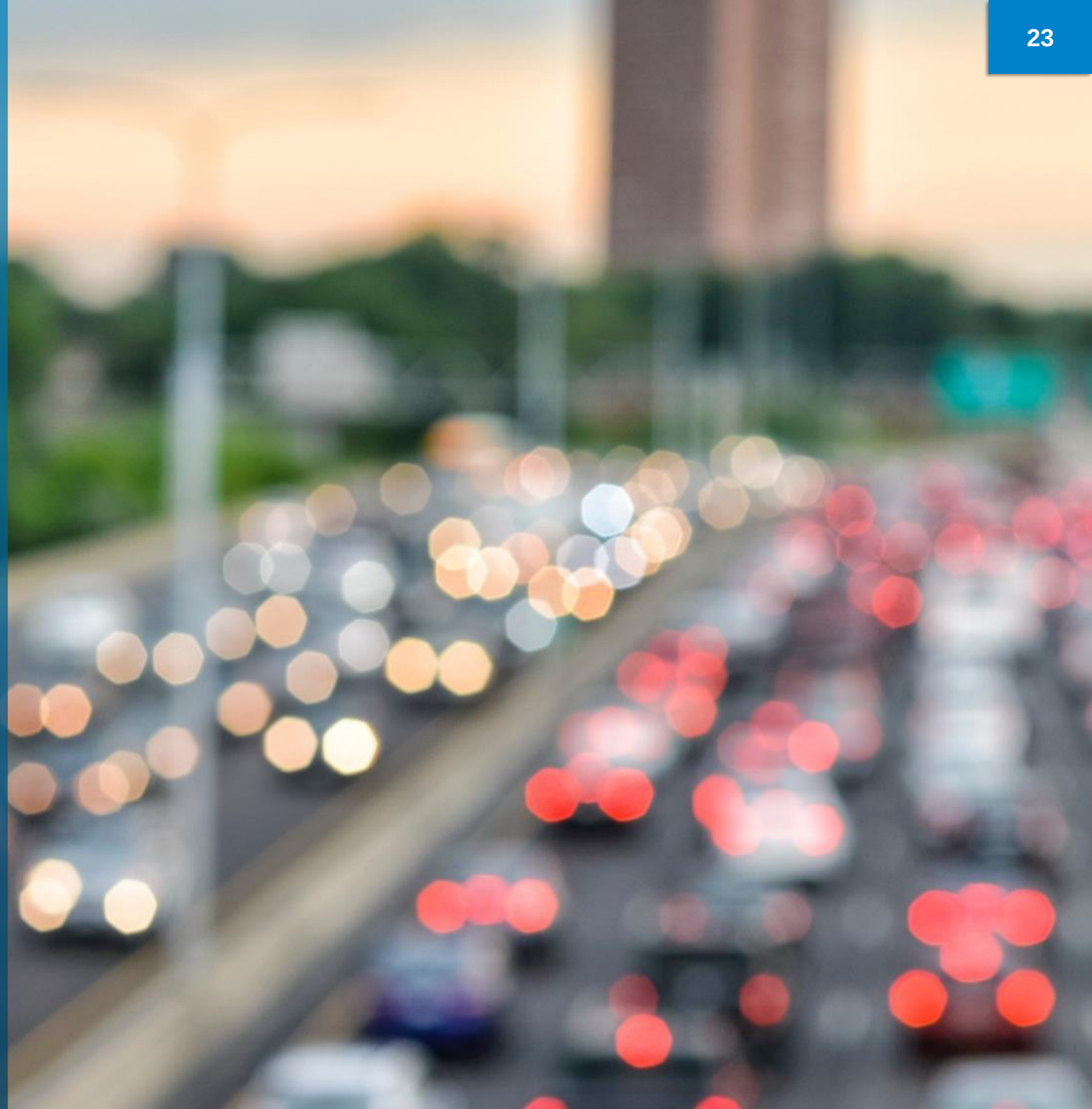
- Individual-level deterrence
  - The effects of increasing penalties on violators and subsequent crashes are less clear. Again, the effects may relate to implementation as well as level of enforcement (risk of being caught).

Intelligent Speed Assistance (ISA)

Effectiveness: ★★★ Cost: **Varies** Use: **Unknown** Time: **Varies**

- ISA systems may:
  - Provide info only (display the speed limit & changes)
  - Provide visual or audible alerts when speed limit is exceeded, but the driver can decide how to react (open system)
  - Provide accelerator resistance to make speeding more difficult (half-open)
  - Automatically prevent speeding above the speed limit (mandatory speed compliance)

Questions?



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