

# COUNTERMEASURES THAT WORK: A HIGHWAY SAFETY COUNTERMEASURE GUIDE FOR STATE HIGHWAY SAFETY OFFICES

NINTH EDITION, 2017

## AT A GLANCE SUMMARY DOCUMENT

[ACCESS THE FULL REPORT HERE:](#)

Richard, C. M., Magee, K., Bacon-Abdelmoteleb, P., & Brown, J. L. (2018, April).  
*Countermeasures that work: A highway safety countermeasure guide for State Highway Safety Offices, Ninth edition* (Report No. DOT HS 812 478).  
Washington, DC: National Highway Traffic Safety Administration.

# CONTENTS

Definitions and Ratings .....	3
Alcohol- and Drug-Impaired Driving .....	4
1. Deterrence: Laws .....	4
2. Deterrence: Enforcement .....	4
3. Deterrence: Prosecution and Adjudication.....	5
4. Deterrence: DWI Offender Treatment, Monitoring, and Control.....	5
5. Prevention, Intervention, Communications And Outreach .....	6
6. Underage Drinking and Drinking and Driving.....	6
7. Drug-Impaired Driving.....	7
Seat Belt and Child Restraint Countermeasures .....	7
1. Seat Belt Use Laws .....	7
2. Seat Belt Law Enforcement .....	8
3. Communications and Outreach .....	8
4. Child/Youth Occupant Restraint Laws .....	8
5. Child Restraint/Booster Seat Law Enforcement.....	9
6. Communications and Outreach .....	9
7. Other Strategies .....	9
Speeding and Speed Management .....	10
1. Laws .....	10
2. Enforcement .....	10
3. Penalties and Adjudication .....	10
4. Communications and Outreach .....	11
Distracted and Drowsy Driving .....	11
1. Laws and Enforcement.....	11
2. Communications and Outreach .....	11
3. Other Countermeasures .....	12

Motorcycle Safety ..... 12

- 1. Motorcycle Helmets..... 12
- 2. Alcohol Impairment ..... 12
- 3. Motorcycle Rider Licensing and Training..... 13
- 4. Communications and Outreach ..... 13

Young Drivers..... 13

- 1. Graduated Driver Licensing..... 13
- 2. Driver Education ..... 14
- 3. Parents ..... 14
- 4. Traffic Law Enforcement ..... 14

Older Drivers..... 15

- 1. Communications and Outreach ..... 15
- 2. Licensing..... 15
- 3. Traffic Law Enforcement ..... 15

Pedestrian Safety ..... 16

- 1. Preschool-Age Children ..... 16
- 2. School-Age Children ..... 16
- 3. Impaired Pedestrians ..... 16
- 4. All Pedestrians..... 17

Bicycle Safety ..... 17

- 1. Children..... 17
- 2. Adults ..... 18
- 3. All Bicyclists..... 18
- 4. Drivers and Bicyclists..... 18

## DEFINITIONS AND RATINGS

### EFFECTIVENESS

Effectiveness is measured by reductions in crashes or injuries unless noted otherwise.

- ★ ★ ★ ★ ★ 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 or other sources
  - ☆☆ Effectiveness still undetermined; different methods of implementing this countermeasure produce different results
  - ☆ Limited or no high-quality evaluation evidence
- 

### COST TO IMPLEMENT

- \$\$\$ requires extensive new facilities, staff, equipment, or publicity, or makes heavy demands on current resources
  - \$\$ requires some additional staff time, equipment, facilities, and/or publicity
  - \$ can be implemented with current staff, perhaps with training; limited costs for equipment, facilities, and publicity
- 

### USE

- High** More than two-thirds of States, or a substantial majority of communities
  - Medium** Between one-third and two-thirds of States or communities
  - Low** Less than one-third of States or communities  
**Unknown:** data not available
- 

### TIME TO IMPLEMENT

- Long** More than one (1) year
- Medium** More than 3 months but less than 1 year
- Short** 3 months or less

## ALCOHOL- AND DRUG-IMPAIRED DRIVING

### 1. DETERRENCE: LAWS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 Administrative License Revocation or Suspension (ALR/ALS)	★ ★ ★ ★ ★	\$\$\$	High	Medium
1.2 Open Container	★ ★ ★	\$	High	Short
1.3 High-BAC Sanctions	★ ★ ★	\$	Medium	Short
1.4 BAC Test Refusal Penalties	★ ★ ★	\$	Unknown	Short
1.5 Alcohol-Impaired Driving Law Review	★ ★ ★	\$\$	Unknown	Medium

### 2. DETERRENCE: ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Publicized Sobriety Checkpoints	★ ★ ★ ★ ★	\$\$\$	Medium	Short
2.2 High-Visibility Saturation Patrols	★ ★ ★ ★	\$\$	High	Short
2.3 Preliminary Breath Test Devices (PBTs) <sup>†</sup>	★ ★ ★ ★	\$\$	High	Short
2.4 Passive Alcohol Sensors <sup>††</sup>	★ ★ ★ ★	\$\$	Unknown	Short
2.5 Integrated Enforcement	★ ★ ★	\$	Unknown	Short

<sup>†</sup> Proven for increasing arrests

<sup>††</sup> Proven for detecting impaired drivers

### 3. DETERRENCE: PROSECUTION AND ADJUDICATION

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 DWI Courts <sup>†</sup>	★ ★ ★ ★	\$\$\$	Low	Medium
3.2 Limits on Diversion & Plea Agreements <sup>††</sup>	★ ★ ★ ★	\$	Medium	Short
3.3 Court Monitoring <sup>††</sup>	★ ★ ★	\$	Low	Short
3.4 Sanctions	☆ ☆	Varies	Varies	Varies

<sup>†</sup> Proven for reducing recidivism

<sup>††</sup> Proven for increasing conviction

### 4. DETERRENCE: DWI OFFENDER TREATMENT, MONITORING, AND CONTROL

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Alcohol Problem Assessment and Treatment	★ ★ ★ ★ ★	Varies	High	Varies
4.2 Alcohol Ignition Interlocks <sup>†</sup>	★ ★ ★ ★ ★	\$\$	Medium	Medium
4.3 Vehicle and License Plate Sanctions <sup>†</sup>	★ ★ ★ ★	Varies	Medium	Medium
4.4 DWI Offender Monitoring <sup>†</sup>	★ ★ ★ ★	\$\$\$	Unknown	Varies
4.5 Lower BAC Limit for Repeat Offenders	★ ★ ★ ★	\$	Low	Short

<sup>†</sup> Proven for reducing recidivism

## 5. PREVENTION, INTERVENTION, COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
5.1 Alcohol Screening and Brief Intervention	★ ★ ★ ★ ★	\$\$	Medium	Short
5.2 Mass-Media Campaigns	★ ★ ★	\$\$\$	High	Medium
5.3 Responsible Beverage Service	☆ ☆	\$\$	Medium	Medium
5.4 Alternative Transportation	☆ ☆	\$\$	Unknown	Short
5.5 Designated Drivers	☆ ☆	\$	Medium	Short

## 6. UNDERAGE DRINKING AND DRINKING AND DRIVING

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
6.1 Minimum Drinking Age 21 Laws	★ ★ ★ ★ ★	\$\$\$	High	Low
6.2 Zero-Tolerance Law Enforcement	★ ★ ★	\$	Unknown	Short
6.3 Alcohol Vendor Compliance Checks <sup>†</sup>	★ ★ ★	\$\$	Unknown	Short
6.4 Other Minimum Legal Drinking Age 21 Law Enforcement	★ ★ ★	\$\$	Varies	Varies
6.5 Youth Programs	☆ ☆	Varies	High	Medium

<sup>†</sup> Proven for reducing sales to underage people

## 7. DRUG-IMPAIRED DRIVING

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
7.1 Enforcement of Drug-Impaired Driving	★ ★ ★	\$ \$	Unknown	Short
7.2 Drug-Impaired-Driving Laws	☆	Unknown	Medium <sup>†</sup>	Short
7.3 Education Regarding Medication	☆	Unknown	Unknown	Long

<sup>†</sup>Use for drug per se laws

## SEAT BELT AND CHILD RESTRAINT COUNTERMEASURES

### 1. SEAT BELT USE LAWS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 State Primary Enforcement Seat Belt Use Laws	★ ★ ★ ★ ★	\$	Medium	Short
1.2 Local Primary Enforcement Seat Belt Use Laws	★ ★ ★ ★	\$	Low	Short
1.3 Increased Seat Belt Use Law Penalties	★ ★ ★ ★ <sup>†</sup>	\$	Low	Short

<sup>†</sup>Effectiveness has been demonstrated for increased fines but has not yet been demonstrated for driver's license points.



## 2. SEAT BELT LAW ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Short Term, High-Visibility Seat Belt Law Enforcement	★ ★ ★ ★ ★	\$\$\$	Medium <sup>†</sup>	Medium
2.2 Integrated Nighttime Seat Belt Enforcement	★ ★ ★ ★	\$\$\$	Unknown	Medium
2.3 Sustained Enforcement	★ ★ ★	Varies	Unknown	Varies

<sup>†</sup> Used in many jurisdictions but often only once or twice each year

## 3. COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Supporting Enforcement	★ ★ ★ ★ ★	Varies	Medium	Medium
3.2 Strategies for Low-Belt-Use Groups	★ ★ ★ ★ <sup>†</sup>	Unknown	Unknown	Medium

<sup>†</sup> For programs supporting enforcement

## 4. CHILD/YOUTH OCCUPANT RESTRAINT LAWS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Strengthening Child/Youth Occupant Restraint Laws	★ ★ ★ ★ ★	\$	High	Short

## 5. CHILD RESTRAINT/BOOSTER SEAT LAW ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
5.1 Short High-Visibility CR Law Enforcement	★ ★ ★ ★ ★	\$\$\$	Medium	Medium

## 6. COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
6.1 Strategies for Older Children	★ ★ ★	Varies	Unknown	Medium
6.2 Strategies for Child Restraint and Booster Seat Use	★ ★ ★ †	Varies	Unknown	Medium

† For stand-alone programs not supporting enforcement

## 7. OTHER STRATEGIES

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
7.1 School Programs	★ ★ ★	Varies	Unknown	Varies
7.2 Inspection Stations	★ ★ ★	\$\$	High	Short

## SPEEDING AND SPEED MANAGEMENT

### 1. LAWS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 Speed Limits	★ ★ ★ ★ ★ <sup>†</sup>	\$	High	Short
1.2 Aggressive Driving and Other Laws	☆	\$	Low	Short

<sup>†</sup>When enforced and obeyed

### 2. ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Automated Enforcement	★ ★ ★ ★ ★	\$\$\$ <sup>†</sup>	Medium	Medium
2.2 High-Visibility Enforcement	☆☆	\$\$\$	Low <sup>††</sup>	Medium
2.3 Other Enforcement Methods	☆☆	Varies	Unknown	Varies

<sup>†</sup>Can be covered by income from citations

<sup>††</sup>For aggressive driving, but use of short-term, high-visibility enforcement campaigns for speeding is more widespread

### 3. PENALTIES AND ADJUDICATION

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Penalty Types and Levels	☆☆	Varies	High	Low
3.2 Diversion and Plea Agreement Restrictions, Traffic Violator School	☆	Varies	Unknown	Varies

## 4. COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Communications and Outreach Supporting Enforcement	★ ★ ★	Varies	Medium	Medium

## DISTRACTED AND DROWSY DRIVING

### 1. LAWS AND ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 GDL Requirements for Beginning Drivers	★ ★ ★ ★ ★ †	\$	High	Medium
1.2 Cell Phone and Text Messaging Laws	☆ ☆	\$	Medium	Short
1.3 High-Visibility Cell Phone/Text Messaging Enforcement	★ ★ ★ ★	\$\$\$	Low	Medium
1.4 General Drowsiness and Distraction Laws	☆	Varies	High††	Short

† Effectiveness demonstrated for nighttime and passenger restrictions

†† Included under reckless driving; use of explicit drowsiness and distraction laws is low

### 2. COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Communications and Outreach on Drowsy Driving	☆	\$\$	Unknown	Medium
2.2 Communications and Outreach on Distracted Driving	☆	\$\$	High	Medium

### 3. OTHER COUNTERMEASURES

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
----------------	---------------	------	-----	------

3.1 Employer Programs	☆☆	\$	Unknown	Short
-----------------------	----	----	---------	-------

3.2 Education Regarding Medical Conditions and Medications	☆	Variable	Unknown	Medium
--	---	----------	---------	--------

## MOTORCYCLE SAFETY

### 1. MOTORCYCLE HELMETS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
----------------	---------------	------	-----	------

1.1 Universal Coverage State Motorcycle Helmet Use Laws	★★★★★	\$	Medium	Short
---	-------	----	--------	-------

1.2 Motorcycle Helmet Use Promotion Programs	☆	Varies	Low to Medium	Varies
--	---	--------	---------------	--------

1.3 Motorcycle Helmet Law Enforcement: Noncompliant Helmets	☆	\$	Unknown	Medium
---	---	----	---------	--------

### 2. ALCOHOL IMPAIRMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
----------------	---------------	------	-----	------

2.1 Alcohol-Impaired Motorcyclists: Detection, Enforcement, and Sanctions	★★★	Varies	Unknown	Varies
---	-----	--------	---------	--------

2.2 Alcohol-Impaired Motorcyclists: Communications	☆	\$\$	Medium	Medium
--	---	------	--------	--------

### 3. MOTORCYCLE RIDER LICENSING AND TRAINING

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Motorcycle Rider Licensing	☆	\$	High	Medium
3.2 Motorcycle Rider Training	☆☆	\$\$	High	Varies

### 4. COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Conspicuity and Protective Clothing	☆	Varies	High	Medium
4.2 Motorist Awareness of Motorcyclists	☆	Varies	High	Medium

## YOUNG DRIVERS

### 1. GRADUATED DRIVER LICENSING

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 Graduated Driver Licensing (GDL)	★★★★★	\$	High	Medium
1.2 Learner's Permit Length, Supervised Hours	★★★★★	\$	High	Medium
1.3 Intermediate – Nighttime Restrictions	★★★★★	\$	High	Medium
1.4 Intermediate – Passenger Restrictions	★★★★★	\$	High	Medium
1.5 Cell Phone Restrictions	☆☆	\$	Medium	Medium

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.6 Belt Use Requirements	☆☆	\$	Low	Medium

1.7 Intermediate – Violation Penalties	☆	\$	High	Medium
--	---	----	------	--------

## 2. DRIVER EDUCATION

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Pre-Licensure Driver Education	☆☆	\$\$\$	Medium	Long

2.2 Post-Licensure Driver Education	☆	\$\$\$	Low	Long
-------------------------------------	---	--------	-----	------

## 3. PARENTS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Parent Roles in Teaching and Managing Young Drivers	☆☆	\$\$	Medium	Short

## 4. TRAFFIC LAW ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Enforcement of GDL and Zero-Tolerance Laws	★★★	\$\$	Unknown	Short

## OLDER DRIVERS

### 1. COMMUNICATIONS AND OUTREACH

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 Formal Courses for Older Drivers	☆☆	\$	Low	Short
1.2 General Communications and Education	☆	\$	Unknown	Short

### 2. LICENSING

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 License Screening and Testing	★★★★	\$\$	High	Medium
2.2 Referring Older Drivers to Licensing Agencies	★★★★	\$\$	Low	Medium
2.3 License Restrictions	★★★★	\$	Unknown	Short
2.4 Medical Advisory Boards	☆	Varies	High	Medium
2.5 License Renewal Policies: In-Person Renewal, Vision Test	☆☆	\$\$\$	Medium	Medium

### 3. TRAFFIC LAW ENFORCEMENT

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Law Enforcement Roles	★★★	Varies	Medium	Varies



## PEDESTRIAN SAFETY

### 1. PRESCHOOL-AGE CHILDREN

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 Children's Safety Clubs	☆	Varies	Unknown	Unknown
1.2 Child Supervision	☆	\$	Unknown	Short

### 2. SCHOOL-AGE CHILDREN

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Elementary-Age Child Pedestrian Training	★ ★ ★	\$	Unknown	Short
2.2 Safe Routes to School	★ ★ ★	\$	High	Short
2.3 Child School Bus Training	☆☆	\$	High	Short

### 3. IMPAIRED PEDESTRIANS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Communications and Outreach Addressing Impaired Pedestrians	☆☆	Varies	Low	Medium
3.2 "Sweeper" Patrols of Impaired Pedestrians	☆	\$\$	Low	Medium

#### 4. ALL PEDESTRIANS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Pedestrian Safety Zones	★ ★ ★ ★	\$\$\$	Low	Medium
4.2 Reduce and Enforce Speed Limits	★ ★ ★	\$	High	Varies
4.3 Conspicuity Enhancement	★ ★ ★	\$	Low	Medium
4.4 Enforcement Strategies	★ ★ ★	\$\$	Low	Short
4.5 Driver Training	☆	\$	Low	Medium
4.6 Pedestrian Gap Acceptance Training	☆	\$\$	Unknown	Medium
4.7 University Educational Campaign	☆	\$	High	Medium

### BICYCLE SAFETY

#### 1. CHILDREN

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.1 Bicycle Helmet Laws for Children	★ ★ ★ ★ ★	\$\$	Medium	Short
1.2 Safe Routes to School	★ ★ ★	\$	High	Short
1.3 Bicycle Safety Education for Children	☆☆	\$	Unknown	Short

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
1.4 Cycling Skills Clinics, Bike Fairs, Bike Rodeos	☆	\$	Unknown	Short

## 2. ADULTS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
2.1 Bicycle Helmet Laws for Adults	★★★★	\$	Low	Short
2.2 Bicycle Safety Education for Adult Cyclists	☆	\$\$	Low	Medium

## 3. ALL BICYCLISTS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
3.1 Active Lighting and Rider Conspicuity	★★★	\$	High <sup>†</sup>	Varies
3.2 Promote Bicycle Helmet Use with Education	☆☆	\$\$\$	Medium	Medium
3.3 Enforcement Strategies	☆	\$\$	Unknown	Varies
3.4 Motorist Passing Bicyclist Laws	☆	\$	Medium	Short

<sup>†</sup> High for active lighting laws; unknown for promoting other conspicuity measures

## 4. DRIVERS AND BICYCLISTS

COUNTERMEASURE	EFFECTIVENESS	COST	USE	TIME
4.1 Driver Training	☆	\$	Low	Medium
4.2 <i>Share the Road</i> Awareness Programs	☆☆	\$\$	Unknown	Medium

