

# Federal Traffic Safety Programs: In Brief

**David Randall Peterman** 

Analyst in Transportation Policy

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### **Contents**

Introduction	
Measuring Traffic Safety	1
Federal Efforts to Improve Traffic Safety	
Encouraging Safer Driving Behavior	
Vehicle Safety Improvements	4
Roadway Safety Improvements	
Commercial Transportation Safety	6
Options for Congress	8
Figures Figure 1. Traffic Fatalities and Fatality Rate, 1966-2015	2
Figure 2. Traffic Deaths and Fatality Rates, 2010-2018	
Contacts	_
Author Contact Information	9

#### Introduction

Driving is one of the riskiest activities the average American engages in. Deaths and serious injuries resulting from motor vehicle crashes are one of the leading causes of preventable deaths. In 2018, 36,560 people were killed in police-reported motor vehicle crashes in the United States, and an estimated 2.7 million people were injured. Many of the people who die in traffic crashes are relatively young and otherwise healthy (motor vehicle crashes are the leading cause of death for people between the ages of 17 and 23). As a result, while traffic crashes are now the 13<sup>th</sup> leading cause of death overall, they rank seventh among causes of years of life lost (i.e., the difference between the age at death and life expectancy).

In addition to the emotional toll exacted by these deaths and injuries, traffic crashes impose a significant economic toll. The U.S. Department of Transportation (DOT) estimated that the annual cost of motor vehicle crashes in 2010 was \$242 billion in direct costs and \$836 billion when the impact on quality of life of those killed and injured was included.<sup>4</sup> About one-third of the direct cost came from the lost productivity of those killed and injured; about one-third from property damage; 10% from present and future medical costs; 12% from time lost due to congestion caused by crashes; and the remainder from the costs of insurance administration, legal services, workplace costs,<sup>5</sup> and emergency services.

## **Measuring Traffic Safety**

The most commonly cited measure of traffic safety is the number of annual fatalities. That number held steady from 1985 to 2007 at around 42,000, leading to claims that traffic safety was not improving. But the raw number of traffic fatalities does not take into account changes in the number of drivers, the number of vehicles, or the number of miles being driven. While the number of deaths appeared to show no improvement in traffic safety between 1985 and 2007, the number of fatalities per 100 million vehicle miles traveled (VMT) fell by more than half (see **Figure 1**).

<sup>&</sup>lt;sup>1</sup> National Highway Traffic Safety Administration, Police-Reported Motor Vehicle Traffic Crashes in 2018, DOT HS 812 860, November 2019.

<sup>&</sup>lt;sup>2</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: Motor Vehicle Traffic Crashes as a Leading Cause of Death in the United States*, 2015, DOT HS 812 499, February 2018, p. 2.

<sup>&</sup>lt;sup>3</sup> Ibid., p. 1.

<sup>&</sup>lt;sup>4</sup> National Highway Traffic Safety Administration, *The Economic Impact of Motor Vehicle Crashes 2010*, DOT HS 812 013, May 2015. Direct costs include tangible losses resulting from crashes and those costs required to restore crash victims, as far as possible, to their pre-crash physical and financial status. These include medical costs, lost productivity, legal and court costs, insurance administrative costs, and property damage. The quality-of-life costs reflect the intangible value of death and injury to the victims: in the case of death, the loss of the victims' remaining lifespan, and in the case of serious injury, the resulting impairment and physical pain. See p. 113 of the report cited for more details.

<sup>&</sup>lt;sup>5</sup> Costs of workplace disruption due to the loss or absence of an employee.

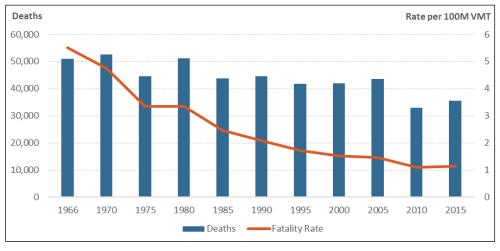


Figure 1. Traffic Fatalities and Fatality Rate, 1966-2015

**Source:** Prepared by CRS using data from National Highway Traffic Safety Administration, *Traffic Safety Facts* 2016, DOT HS 812 554, Table 2.

The improvement accelerated between 2007 and 2009, with the number of traffic deaths dropping to around 33,000, and the fatality rate dropping another 15% (see **Figure 2**). Part of this decline was likely due to weak economic conditions; traffic deaths and injuries typically decline during economic downturns and rise as the economy recovers. Although the decline in traffic deaths after 2007 was heralded by some as evidence that traffic safety interventions were working, the number and rate of fatalities has risen since 2014 as the economy resumed growing. The dramatic improvement in traffic safety numbers from 2007-2014, then, was probably due to broader factors along with federal and state safety initiatives.

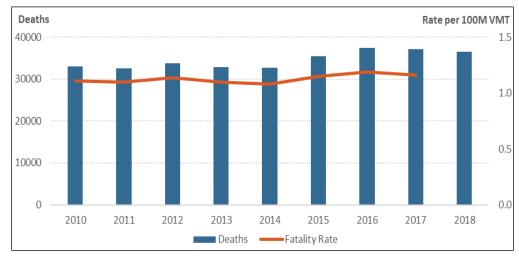


Figure 2. Traffic Deaths and Fatality Rates, 2010-2018

**Source:** Prepared by CRS using data from National Highway Traffic Safety Administration, *Traffic Safety Facts 2017 Data: Summary of Motor Vehicle Crashes*, DOT HS 812 794, September 2019, Table 2, except the 2018 death

<sup>&</sup>lt;sup>6</sup> The explanation for this phenomenon is not clear. The exposure to the risk of crashing—the number of vehicle miles traveled (VMT)—tends to stagnate or decline during recessions, but the percentage decline in deaths and injuries is typically much greater than the percentage decline in VMT. For example, from 2008 to 2009 VMT declined by less than 1%, but traffic fatalities declined by 9%.

number is from National Highway Traffic Safety Administration, *Police-Reported Motor Vehicle Traffic Crashes in 2018, DOT HS 812 860,* November 2019.

Note: Fatality rate for 2018 not yet available.

### **Federal Efforts to Improve Traffic Safety**

Federal traffic safety programs are administered by three separate agencies within DOT. The National Highway Traffic Safety Administration (NHTSA) has responsibility for programs targeting driver behavior and regulates safety-related aspects of vehicle design. The safety of roads falls within the purview of the Federal Highway Administration (FHWA). The Federal Motor Carrier Safety Administration (FMCSA) manages a separate set of programs focusing on the safety of commercial drivers and vehicles.

Congress typically amends federal traffic safety programs in the periodic reauthorization of federal surface transportation programs. Recent reauthorizations were enacted in 2012 and 2015; the current authorization expires at the end of FY2020. Occasionally, changes are made in standalone legislation<sup>7</sup> or as part of other legislation such as the DOT appropriations act.<sup>8</sup>

#### **Encouraging Safer Driving Behavior**

A significant portion of crashes is caused, at least in part, by drivers behaving unsafely. Prominent among these behaviors are speeding,<sup>9</sup> driving while under the influence of alcohol or other drugs,<sup>10</sup> and driving while distracted.<sup>11</sup> Fatalities are also increased by failure to wear seat belts<sup>12</sup> (or in the case of motorcyclists, helmets).<sup>13</sup> Use of seat belts, among the most effective safety

<sup>&</sup>lt;sup>7</sup> For example, in 2008 Congress passed the Cameron Gulbransen Kids Transportation Safety Act of 2007 (P.L. 110-189), which directed DOT to initiate rulemakings to require that power windows in cars be designed to reverse direction when they encounter an obstacle and to reduce the risk of backing over a child by improving the driver's view of the area behind the vehicle.

<sup>&</sup>lt;sup>8</sup> For example, the FY2001 DOT appropriations act provided that states that had not passed a law making driving with a blood alcohol content level of 0.08 illegal would have a portion of their federal highway funding withheld beginning with FY2004 (P.L. 106-346, §351).

<sup>&</sup>lt;sup>9</sup> In 2018, 25% of fatalities involved speeding. National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: 2018 Fatal Motor Vehicle Crashes: Overview*, DOT HS 812 826, October 2019, p. 1 (percentage calculated by CRS).

<sup>&</sup>lt;sup>10</sup> In 2018, 29% of traffic fatalities involved alcohol-impaired drivers. National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note:* 2018 Fatal Motor Vehicle Crashes: Overview, DOT HS 812 826, October 2019, Table 7. There is some overlap between the percentages of fatal crashes involving speeding and those involving alcohol-impaired drivers.

<sup>&</sup>lt;sup>11</sup> An estimated 8% of fatal crashes in 2018 involved distracted drivers; National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: 2018 Fatal Motor Vehicle Crashes: Overview*, DOT HS 812 826, October 2019, p. 8.

<sup>&</sup>lt;sup>12</sup> In 2018, almost half (47%) of fatally injured passenger vehicle occupants were not wearing seat belts or in child restraints. National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: 2018 Motor Vehicle Crashes: Overview*, DOT HS 812 603, October 2018, p. 5. Overall seat belt use by front seat occupants was estimated at 90% in 2017 and 2018; NHTSA estimated that seat belt use had saved the lives of 14,955 people involved in crashes in 2017, and that another 2,549 lives could have been saved if seat belt use had been 100%. *Traffic Safety Facts Crash Stats: Lives Saved in 2017 by Restraint Use and Minimum-Drinking-Age Laws*, DOT HS 812 683, March 2019, Table 1.

<sup>&</sup>lt;sup>13</sup> Nationwide use of DOT-compliant motorcycle helmets in 2018 was estimated at 71%; in the 20 states where helmets are required for all riders, the estimate was 83%, versus 57% in the states where helmets are not required for all riders. National Highway Traffic Safety Administration, *Motorcycle Helmet Use in 2018—Overall Results*, DOT HS 812 720, July 2019, Figures 2 & 3. Requiring all riders to wear a helmet—a universal helmet law—has been estimated to reduce

features in a vehicle, has risen from 58% (1994) to 91% (2019). Since 2000 the use of motorcycle helmets, the most effective safety feature for a motorcyclist, has varied from a high of 71% (2000, 2018) to a low of 48% (2005), averaging 61% to 65% over the past decade. Since 2000 the use of motorcyclist, has varied from a high of 71% (2000, 2018) to a low of 48% (2005), averaging 61% to 65% over the past decade.

Two groups are of particular concern. Young male drivers (aged 16-24) are far more likely to be involved in fatal traffic crashes than any other age-group, including young female drivers. And the fatality rate for motorcyclists (most of whom are male) is over 20 times the rate for occupants of other motor vehicles. 17

Since driver behavior is the cause of most crashes, regulating driver behavior is a way of reducing the number of crashes. But regulating driver behavior is a power reserved to the states. <sup>18</sup> NHTSA (and Congress) attempts to encourage states to pursue safety initiatives affecting driver behavior either by providing money to states to do certain things (incentive grants) or by withholding money from states that do not do certain things (sanctions). <sup>19</sup> In the most recent reauthorization of highway safety programs, Congress established or renewed incentive grant programs for states that take specified actions to promote seat belt and child restraint use ("occupant protection"), reduce impaired and distracted driving, require graduated licenses for teen drivers, address the safety of motorcyclists, bicyclists, and pedestrians, and improve the quality of state traffic safety information systems. <sup>20</sup>

### **Vehicle Safety Improvements**

NHTSA began establishing minimum standards for passenger vehicles (known as Federal Motor Vehicle Safety Standards, or FMVSS) in the 1960s based on provisions in highway and traffic safety acts passed in that period.<sup>21</sup> Existing standards are amended and new standards are added from time to time at the direction of Congress, at NHTSA's own initiative, or as a result of a request from the public. New standards and amendments to existing standards must go through

motorcyclist fatalities by 20% or more. National Cooperative Highway Research Program, *Effectiveness of Behavioral Highway Safety Countermeasures*, Report 622, 2008, p. 41.

<sup>&</sup>lt;sup>14</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: Seat Belt Use in 2019—Overall Results*, DOT HS 812 875, December 2019, https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812875.

<sup>&</sup>lt;sup>15</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: Motorcycle Helmet Use in 2018—Overall Results*, DOT HS 812 720, July 2019, Figure 1.

<sup>&</sup>lt;sup>16</sup> National Highway Traffic Safety Administration, Traffic Safety Facts 2017, DOT HS 812 806, Table 62.

<sup>&</sup>lt;sup>17</sup> In 2017 the fatality rate per 100 million VMT for motorcyclists was 25.67, compared to an overall motor vehicle fatality rate of 1.16. National Highway Traffic Safety Administration, *Traffic Safety Facts 2017*, DOT HS 812 806, Tables 2 and 10. In 2017 5,172 motorcyclists were killed.

<sup>&</sup>lt;sup>18</sup> For example, the federal government can require vehicle manufacturers to put seat belts in vehicles, but cannot require that people use them; only states can make failure to use seat belts a legal offense.

<sup>&</sup>lt;sup>19</sup> Two of the current traffic safety sanctions are "weak" sanctions; they do not withhold any transportation funding from a state that is not in compliance, but redirect a small portion of a state's federal highway construction funding to its safety programs (including its Highway Safety Infrastructure Program). Many states remain subject to these sanctions. One requires states to prohibit open alcoholic containers in vehicles; 14 states were subject to that sanction in FY2018. Another requires states to impose certain minimum penalties for repeat offenders convicted of driving while intoxicated; 17 states were subject to that sanction in FY2018. In contrast, the sanction that requires states to set a blood alcohol concentration of 0.08 as the legal level of driving while intoxicated is a "strong" sanction; states not in compliance will lose a portion of their federal highway construction funding. Every state is in compliance with that requirement.

<sup>&</sup>lt;sup>20</sup> P.L. 114-94 (FAST Act), §4005.

<sup>&</sup>lt;sup>21</sup> These are collected in Part 571 of Title 49 of the *Code of Federal Regulations*.

the federal rulemaking process, which provides for public review and comment on proposed changes. Standards currently under consideration include improved rollover structural integrity for motorcoaches and audible notifications for rear seat belt usage.<sup>22</sup> NHTSA also tests vehicles for compliance with safety standards, rates the crashworthiness of vehicles, and monitors consumer complaints about vehicles for evidence of safety defects that may necessitate a vehicle recall.<sup>23</sup>

Improvements in vehicle design, such as the use of crumple zones, have made vehicles structurally safer over the past few decades. NHTSA also mandated safety features such as airbags, which have been required in all passenger vehicles since model year 1997. Improved design and safety features have contributed to a reduction in the deadliness of crashes; the percentage of crashes in which vehicle occupants are killed or injured has dropped from around 33% (during the 1990s) to around 30% (2016-2017).<sup>24</sup>

Developments in electronic technology are shifting the focus of vehicle safety research from an emphasis on crashworthiness—a vehicle's ability to protect occupants in the event of a crash—to crash avoidance. For example, electronic stability control systems automatically apply braking force to individual wheels to reduce the risks of skidding or rollover; this has been required on all new passenger vehicles since the 2012 model year. Other technologies, such as adaptive cruise control (which automatically maintains a safe distance from the car ahead), forward collision mitigation (which automatically brakes to prevent the vehicle from striking an object in its path), and lane departure warning, are available as options on some vehicles. The National Transportation Safety Board has recommended that NHTSA add several of these new technologies to the list of mandatory safety standards for all new vehicles because of their potential to prevent crashes.<sup>25</sup>

NHTSA and the Insurance Institute for Highway Safety announced in 2016 that 20 automakers, representing 99% of the U.S. auto fleet, had agreed to make automatic emergency braking (AEB) with forward collision warning a standard feature on all their cars by September 1, 2022. NHTSA said this agreement would result in the near universal availability of this safety feature at least three years sooner than by going through the regulatory process to make it a legal requirement. For the 2020 model year four manufacturers (Audi, Mercedes, Tesla, and Volvo) have AEB on 99%-100% of their vehicles produced for the U.S. market, and most of the other manufacturers have it on more than half of their vehicles as standard equipment.<sup>26</sup>

NHTSA is also beginning rulemakings to develop a safe method of on-road testing of advanced vehicle technologies, such as automated driving systems, and to identify current regulations that may hinder the introduction of advanced vehicle technologies. DOT has issued voluntary guidance regarding the introduction of autonomous vehicles, and Congress is considering legislation that would affect the treatment of autonomous vehicles (e.g., H.R. 3388, S. 1885).

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<sup>&</sup>lt;sup>22</sup> Department of Transportation, February 2020 *Significant Rulemaking Report*, available at https://www.transportation.gov/regulations/report-on-significant-rulemakings.

<sup>&</sup>lt;sup>23</sup> Manufacturers typically voluntarily recall vehicles that have a defect, but if necessary NHTSA can order a manufacturer to recall a defective vehicle.

<sup>&</sup>lt;sup>24</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts* 2017, Table 1: Crashes by Crash Severity.

 $<sup>^{25}</sup>$  National Transportation Safety Board,  $Most\ Wanted\ List:$  Increase Implementation of Collision Avoidance Technologies, https://www.ntsb.gov/safety/mwl/Pages/mwl2-2017-18.aspx.

<sup>&</sup>lt;sup>26</sup> National Highway Traffic Safety Administration, "NHTSA Announces Update to Historic AEB Commitment by 20 Automakers," December 17, 2019, https://www.nhtsa.gov/press-releases/nhtsa-announces-update-historic-aeb-commitment-20-automakers.

#### **Roadway Safety Improvements**

The design of roads influences how safe they are. The most dramatic example is the Interstate Highway system; although these roads are heavily trafficked by vehicles traveling at high speeds, they are the safest category of road due to such factors as having no intersections, long sight lines, gentle curves, wide lanes, etc. Road designs change over time as research identifies characteristics that can reduce the likelihood of crashes. One benefit of improved road design is that it reduces the incidence of driver misbehavior.

Roadway design is a particular concern for vulnerable road users for whom there are few other effective options to improve safety, namely pedestrians and bicyclists. Perhaps due in part to increased awareness of the health benefits of exercise, the level of pedestrian and bicyclist activity appears to have risen in recent years. As well, the number of pedestrians and bicyclists killed in traffic crashes has risen: from 4,699 pedestrians (11% of all traffic deaths) in 2007 to 5,987 (16% of all traffic deaths) in 2017,<sup>27</sup> and from 701 bicyclists (1.7% of all traffic deaths) in 2007 to 783 (2.1 % of all traffic deaths) in 2017.<sup>28</sup> Roadway designs to protect these road users include sidewalks, protected bike lanes, crossing islands and raised medians, and other traffic-calming measures.<sup>29</sup>

FHWA supports research and makes grants to states to improve roadway safety. Safety improvements are eligible expenses under most FHWA grant programs, but one of the core grant programs is specifically focused on safety, the Highway Safety Improvement Program. This program distributes more than \$2 billion annually to states for road safety improvements. To qualify to use their funding, states must develop highway safety plans that use crash data to identify hazardous road locations or features and identify measures to address the problems. FHWA is encouraging a shift in emphasis from highway design standards to steps that improve safety as measured by changes in crash data. Projects are chosen by state DOTs.

### **Commercial Transportation Safety**

The federal government lacks authority to regulate the behavior of ordinary drivers, which is under state jurisdiction. However, the behavior of commercial drivers who engage in interstate commerce is a federal matter. For example, Congress has required that commercial drivers satisfy requirements for training, licensing, and medical fitness, and specifies how much time drivers can drive each day (generally, no more than 12 hours).

Federal regulations concerning vehicles and drivers are enforced by FMCSA and state authorities, who conduct both on-site and roadside inspections. Enforcement is challenging, given the scale of the industry; there are over 700,000 commercial truck and bus carriers with millions of vehicles and drivers. FMCSA inspectors and law enforcement officials have the power to remove a vehicle

<sup>&</sup>lt;sup>27</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts 2017 Data: Pedestrians*, DOT HS 812 681, March 2019, Table 1.

<sup>&</sup>lt;sup>28</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts 2017 Data: Bicyclists and Other Cyclists*, DOT HS 812 765, June 2019, Table 1.

<sup>&</sup>lt;sup>29</sup> National Highway Traffic Safety Administration, *Advancing Pedestrian and Bicyclist Safety: A Primer for Highway Safety Professionals*, DOT HS 812 258, April 2016.

<sup>&</sup>lt;sup>30</sup> These measures may include replacing intersections with roundabouts, adding medians and pedestrian crossing islands to urban and suburban streets, limiting highway access points, and adding rumble strips to two-lane roads. See <a href="http://safety.fhwa.dot.gov/provencountermeasures/">http://safety.fhwa.dot.gov/provencountermeasures/</a> for more information.

<sup>&</sup>lt;sup>31</sup> See, for example, FHWA's Highway Safety Manual website (https://safety.fhwa.dot.gov/rsdp/hsm.aspx /).

from service, and FMCSA can order a carrier to suspend operations in the event of serious violations. Fines for less severe violations are imposed by state authorities.

One of the most significant opportunities for improvement in commercial vehicle safety is the application of automated driving systems that supplement the role of the driver. NTSB, in calling for greater use of such technologies for commercial vehicles, noted that

In a 2015 study by the University of Michigan Transportation Research Institute, researchers found that in the large motor carriers they surveyed, [Lane Departure Warning Systems] reduced crashes by 14 percent, electronic stability control by 19 percent, [Forward Collision Warning Systems] by 14 percent, blind spot detection by 5 percent, and vehicle communications systems by 9 percent.<sup>32</sup>

In May 2019 FMCSA issued a request for public comment about Federal Motor Carrier Safety Regulations that may need to be updated, modified, or eliminated to facilitate the safe introduction of commercial motor vehicles equipped with automated driving systems.<sup>33</sup>

In 2010, FMCSA adopted a new enforcement approach called the Compliance, Safety, Accountability program (CSA). CSA is a monitoring program that seeks to make better use of enforcement resources by using data collected through federal and state inspections and crash data to identify high-risk carriers who can then be targeted for interventions. Questions have been raised about the CSA, particularly its Safety Measurement System component, which uses data to identify high-risk carriers, and Congress directed that the program be reviewed by the National Academy of Sciences; its report made several recommendations for improving the effectiveness of the Safety Measurement System.<sup>34</sup>

In December 2011, FMCSA's Motor Carrier Safety Advisory Committee and its Medical Review Board made recommendations regarding screening of commercial drivers for sleep apnea, a medical condition that causes frequent disruption to breathing during sleep, interfering with restful sleep and causing drowsiness during the day. Obesity is linked to sleep apnea, and commercial drivers have above-average rates of obesity, due in part to sitting behind the wheel of a vehicle for up to 12 hours a day, which leaves little time for exercise, as well as often limited options for healthy eating while on the road and often irregular sleep patterns. Sleep apnea can be a medically disqualifying condition for a commercial driver, though there are medical treatments that can permit a commercial driver to continue to drive. The FMCSA committees recommended that medical examiners should routinely test commercial drivers who are extremely obese (BMI 35+)<sup>35</sup> for sleep apnea. FMCSA would have to go through the rulemaking process in order to make that recommendation a requirement.<sup>36</sup>

Since December 2017, in response to a congressional directive, most truckers have had to use an electronic logging device (ELD) to record how many hours they spend on duty and driving each

<sup>&</sup>lt;sup>32</sup> National Transportation Safety Board, 2017-2018 Most Wanted List of Transportation Safety Improvements: Increase Implementation of Collision Avoidance Technologies: Highway, https://www.ntsb.gov/safety/mwl/Documents/2017-18/2017MWL-FctSht-CollisionAvoidance-H.pdf.

<sup>&</sup>lt;sup>33</sup> Federal Motor Carrier Safety Administration, Advanced Notice of Proposed Rulemaking, 84 *Federal Register* 24449, May 28, 2019, https://www.federalregister.gov/documents/2019/05/28/2019-11038/safe-integration-of-automated-driving-systems-equipped-commercial-motor-vehicles.

<sup>&</sup>lt;sup>34</sup> National Academies of Sciences, Engineering, and Medicine, *Improving Motor Carrier Safety Measurement*, 2017, https://doi.org/10.17226/24818.

<sup>35</sup> BMI stands for Body Mass Index, and is essentially a measure of a person's weight divided by his or her height.

<sup>&</sup>lt;sup>36</sup> In 2013 Congress provided that FMCSA would have to go through the rulemaking process to implement screening, testing, or treatment of commercial drivers for sleep disorders; P.L. 113-45.

day. Federal hours of service (HOS) regulations have for several decades limited duty and driving hours of commercial drivers in order to reduce the risk of fatigued drivers causing crashes. Surveys indicated that drivers often violated those limits, but since drivers were responsible for keeping track of their own hours in a paper log, it was easy to conceal such violations. Highway safety groups had long called for Congress to require that commercial drivers use an automated system to track their driving time in order to limit violations.

Now that most commercial drivers must use ELDs to track their hours, some sectors of the commercial trucking industry, particularly livestock haulers, are objecting that the ELD requirement—which is to say, the improved enforcement of the hours-of-service rules that have been in place for years—makes it hard for them to conduct their businesses. Congress has granted livestock haulers a temporary reprieve from the ELD mandate, and FMCSA has issued an Advanced Notice of Proposed Rulemaking regarding possible revisions to certain HOS rules.<sup>37</sup>

### **Options for Congress**

Congress may review the performance of the current traffic safety measures and consider additional traffic safety measures as it considers reauthorizing surface transportation programs; the current authorization expires at the end of FY2020. Several opportunities exist for Congress to further promote highway safety, although some options may impinge on driver behavior in a way that some people find objectionable.

Speeding, for example, is a violation committed by virtually all drivers at times, and by some drivers routinely. Speeding contributes both to the risk of crashing and to the impact of crashing (all else being equal, the greater the speeds of the vehicles involved in a crash, the greater the destructiveness of the crash). Speed limits are hard for law enforcement officers to enforce because violations are ubiquitous, and it is often dangerous to pull offenders over to issue them a ticket; each year a number of law enforcement officers engaged in roadside stops are struck and killed by passing motorists. Conversely, automated enforcement of speed limits (and of red light running) is relatively low-cost compared to the cost of a human officer, operates around the clock, and does not require stopping the offender to issue a ticket, thus keeping officers out of harm's way. Studies of speed and red light cameras indicate they reduce injuries and deaths, and NHTSA gives them the highest rating for effectiveness.<sup>38</sup> However, Congress prohibits states from using federal-aid highway funding for automated traffic enforcement (except in school zones);<sup>39</sup> in a further disincentive to the use of automated enforcement, Congress requires states in which automated enforcement systems are in operation to conduct a biennial survey of those systems.<sup>40</sup>

Similarly, the single most effective safety measure for motorcyclists is wearing a helmet, but many motorcyclists choose not to do so. Mandatory helmet laws (requiring all riders to wear helmets) have been shown to increase the rate of helmet wearing and to save lives, and are relatively simple to enforce (since violations are easy to see), but only 19 states require all motorcyclists to wear a helmet; most require helmets only for young riders. Congress does not

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<sup>&</sup>lt;sup>37</sup> Federal Motor Carrier Safety Administration, "Hours of Service of Drivers," 83 *Federal Register* 42631, August 23, 2018, https://www.federalregister.gov/documents/2018/08/23/2018-18379/hours-of-service-of-drivers.

<sup>&</sup>lt;sup>38</sup> National Highway Traffic Safety Administration, *Countermeasures That Work: A Highway Safety Countermeasure Guide For State Highway Safety Offices*, Ninth Edition (2017), "Motorcycle Helmets," p. 5-8, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812478\_countermeasures-that-work-a-highway-safety-countermeasures-guide-.pdf.

<sup>&</sup>lt;sup>39</sup> P.L. 114-94 (FAST Act), §1401.

<sup>&</sup>lt;sup>40</sup> P.L. 114-94 (FAST Act), §4002(2).

have the authority to enact mandatory helmet laws, but can influence state legislatures to enact such laws: in the early 1970s the prospect of having a portion of a state's federal highway funding withheld if it did not have a mandatory helmet law led to 47 states adopting such laws. But the penalty provision was then repealed, after which many states repealed their mandatory helmet law. Congress has created a motorcycle safety incentive grant program that emphasizes education, although there is little evidence that educational programs result in improvement in motorcyclist safety. Congress also has prohibited NHTSA from encouraging states to adopt mandatory helmet laws, <sup>41</sup> and has prohibited states from using any federal highway funding to set up traffic checkpoints that target motorcyclists for inspection, or for any program that checks helmet usage. <sup>42</sup>

#### **Author Contact Information**

David Randall Peterman Analyst in Transportation Policy [redacted]@crs.loc.gov, 7-....

<sup>&</sup>lt;sup>41</sup> 49 U.S.C. §30105. The prohibition on NHTSA urging state legislatures to oppose or adopt legislation is general, but the motivation for this provision, which was enacted in 1998, may have been a video NHTSA produced that supported the use of motorcycle helmets; see https://one.nhtsa.gov/nhtsa/whatsup/tea21/GrantMan/HTML/05e\_LobbyMemo\_2\_9\_00.rest.html.

<sup>&</sup>lt;sup>42</sup> P.L. 114-94 (FAST Act), §4007.

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