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# Federal Traffic Safety Programs: In Brief

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## 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 2012, 33,561 people were killed in police-reported motor vehicle crashes, and an estimated 2.36 million people were injured.<sup>1</sup> Most of the people who die in traffic crashes are relatively young and otherwise healthy. As a result, traffic crashes rank third overall, after cancer and diseases of the heart, in years of life lost (that is, the difference between the age at death and life expectancy).<sup>2</sup>

In addition to the emotional toll exacted by these deaths and injuries, traffic crashes impose a significant economic toll. The Department of Transportation (DOT) estimated that the annual cost of motor vehicle crashes in 2000 was \$231 billion.<sup>3</sup> About one-third of the total cost came from the lost productivity of those killed and injured; about one-quarter from property damage; 15% from present and future medical costs; 11% from time lost due to congestion caused by crashes; and the remainder from the costs of insurance administration, legal services, workplace costs,<sup>4</sup> and emergency services. While the number of traffic deaths has declined significantly since 2000, the estimated cost of crashes (adjusted for inflation) has remained within a comparable range, indicating an increase in the cost of each crash; estimates of the cost of traffic crashes in 2009 range from around \$245 billion to \$300 billion.<sup>5</sup>

## 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 fell by more than half.

The improvement has continued since 2007, with the number of traffic deaths dropping from 41,259 in 2007 to 33,561 in 2012 (see **Figure 1**). Part of this decline was likely due to weak economic conditions; traffic deaths and injuries typically decline during economic downturns and

<sup>1</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts Research Note: 2012 Motor Vehicle Crashes: Overview*, DOT HS 811856, November 2013, p. 1.

<sup>2</sup> National Highway Traffic Safety Administration, *Motor Vehicle Traffic Crashes as a Leading Cause of Death in the United States*, 2003, DOT HS 810568, March 2006.

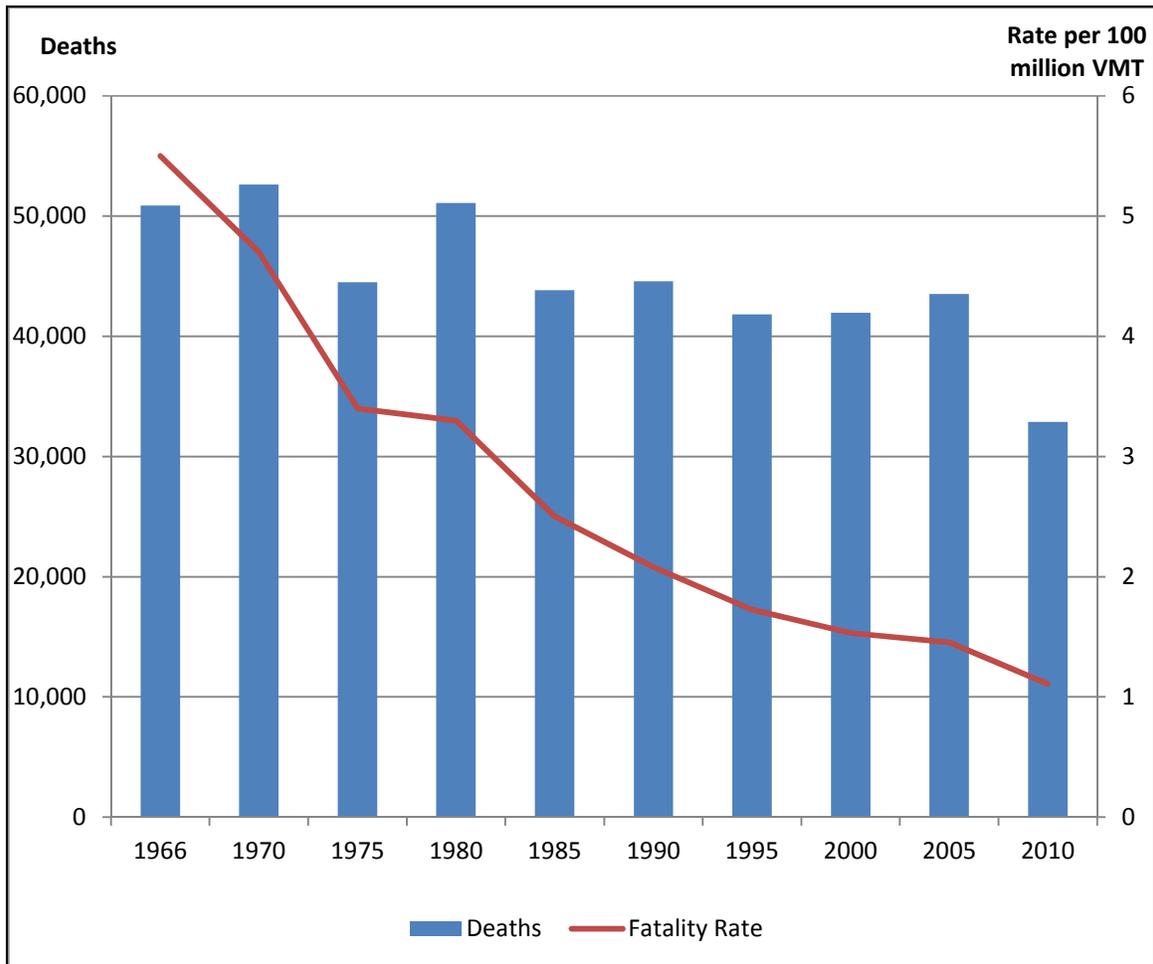
<sup>3</sup> National Highway Traffic Safety Administration, *The Economic Impact of Motor Vehicle Crashes 2000*, DOT HS 809446, May 2002.

<sup>4</sup> Costs of workplace disruption due to the loss or absence of an employee.

<sup>5</sup> The National Safety Council estimated a cost of \$245 billion in 2009 (*Injury Facts 2011*, p. 94); in a report for the American Automobile Association, Cambridge Systematics estimated a cost of \$300 billion for 2009 (*Crashes vs. Congestion: What's the Cost to Society?*, November 2011, p. ES-2). The differences stem in part from differing estimates of the cost of deaths. The National Safety Council estimated that the cost of traffic crashes in 2012 was \$277 billion; *NSC Motor Vehicle Fatality Estimates*, <http://www.nsc.org/Documents/NSC%20MV%20Fatality%20Estimates.pdf>.

rise as the economy recovers.<sup>6</sup> However, while traffic deaths did rise 4.4% in 2012, the first year-over-year increase since 2005, preliminary analysis by the National Highway Traffic Safety Administration (NHTSA) indicates that traffic deaths in the first half of 2013 declined from the same period in 2012.<sup>7</sup>

**Figure 1. Traffic Fatalities and Fatality Rate, 1966-2010**



**Source:** Prepared by CRS using data from National Highway Traffic Safety Administration, *Traffic Safety Facts 2010*, DOT HS 811 659, Table 2.

The dramatic improvement in traffic safety numbers since 2007, then, has probably been due to a number of other factors along with federal and state safety initiatives. One of those factors is demographic change, which contributed to an 11% drop in the number of licensed drivers under

<sup>6</sup> The explanation for this phenomenon is not clear. 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, in 2009 VMT declined by less than 1%, but traffic fatalities declined by 9%.

<sup>7</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts Crashstats: Early Estimate of Motor Vehicle Traffic Fatalities for the First Nine Months (January–September) of 2013*, DOT HS 811845, October 2013.

age 18 between January 2007 and January 2011.<sup>8</sup> Drivers in this age cohort have by far the highest fatality rates among all drivers.<sup>9</sup>

## Federal Efforts to Improve Traffic Safety

Federal traffic safety programs are administered by three separate agencies within DOT. 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 1998, 2005, and 2012; the current authorization expires at the end of FY2014. Occasionally changes are made in stand-alone legislation<sup>10</sup> or as part of other legislation, such as the DOT appropriations act.<sup>11</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>12</sup> driving while under the influence of alcohol or other drugs,<sup>13</sup> and driving while distracted.<sup>14</sup> Fatalities are also increased by failure to wear seat belts<sup>15</sup>

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<sup>8</sup> Federal Highway Administration, *Highway Statistics 2007*, Table 6.4.3, and *Highway Statistics 2011*, Table 6.3.3, <http://www.fhwa.dot.gov/policyinformation/statistics.cfm>.

<sup>9</sup> Insurance Institute for Highway Safety, *Fatality Facts 2011*, <http://www.iihs.org/research/fatality.aspx?topicName=Teenagers&year=2011>.

<sup>10</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>11</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>12</sup> In 2011, 30% of fatal traffic crashes involved speeding. NHTSA, *Traffic Safety Facts: 2011 Data Overview*, DOT HS 811753, April 2013, p. 7.

<sup>13</sup> In 2012, 31% of total traffic fatalities involved alcohol-impaired drivers. NHTSA, *Traffic Safety Facts: 2012 Motor Vehicle Crashes: Overview*, DOT HS 811856, November 2013, p. 3. There is some overlap between the percentages of fatal crashes involving speeding and those involving alcohol-impaired drivers.

<sup>14</sup> Around 9% of fatal crashes in 2010 involved distracted drivers. NHTSA changed its definition of distracted driving crashes in 2010, narrowing the definition to focus on crashes in which driver distraction was most likely to be a causal factor. NHTSA Press Release, "U.S. Transportation Secretary LaHood Announces Lowest Level of Annual Traffic Fatalities in More Than Six Decades," NHTSA 21-11, December 8, 2011.

<sup>15</sup> In 2011, slightly more than half (52%) of fatally injured passenger vehicle occupants were not wearing seat belts or in child restraints. NHTSA, *Traffic Safety Facts Research Note: 2012 Motor Vehicle Crashes: Overview*, DOT HS811856, November 2013, p. 4. Seat belt use was estimated at 85% in 2011; NHTSA estimated that seat belt use had saved the lives of 11,949 people involved in crashes that year, and that another 3,384 could have been saved if seat belt use had been 100% (*Traffic Safety Facts: 2011 Data Overview*, DOT HS 811753, April 2013, p. 3).

(or in the case of motorcyclists, helmets).<sup>16</sup> Use of seat belts, among the most effective safety features in a vehicle, has risen from 58% (1994) to 86% (2012).<sup>17</sup>

Two groups are of particular concern. Young people (aged 16-24), especially young males, are more likely to be killed and injured in traffic crashes than any other age-group.<sup>18</sup> And the fatality rate for motorcyclists is much higher than for occupants of other motor vehicles.<sup>19</sup>

Congress provides around \$800 million annually for NHTSA; NHTSA distributes around \$550 million of that to states through various traffic safety grant programs. Regulating driver behavior is a power reserved to the states.<sup>20</sup> Consequently, most of these grant programs seek to influence states to pursue safety initiatives 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>21</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, reduce impaired and distracted driving, require graduated licenses for teen drivers, address motorcyclist safety, and improve the quality of state traffic safety information systems.<sup>22</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>23</sup> Existing standards are amended and new standards are added from time to time at the direction of Congress or at NHTSA's own initiative. New standards and amendments to existing standards must go through the federal rulemaking process, which provides for public review and comment on proposed changes. Standards currently under consideration would mandate improved rollover structural integrity for motorcoaches and

<sup>16</sup> Nationwide use of DOT-compliant motorcycle helmets in 2012 was estimated at 60%; in the 20 states where helmets are required, the estimate was 89%, versus 49% in the 30 states where helmets are not required (NHTSA, *Motorcycle Helmet Use in 2012—Overall Results*, DOT HS 811759, May 2013). Requiring all riders to wear a helmet—a universal helmet law—has been estimated to reduce motorcyclist fatalities by 20% or more (National Cooperative Highway Research Program, *Effectiveness of Behavioral Highway Safety Countermeasures*, Report 622, 2008, p. 41).

<sup>17</sup> NHTSA, *Traffic Safety Facts Research Note: Seat Belt Use in 2012—Overall Results*, DOT HS 811691, November 2012.

<sup>18</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts 2011*, DOT HS 811754, Table 62.

<sup>19</sup> In 2011 the fatality rate per 100 million VMT for motorcyclists was 24.93, compared to an overall motor vehicle fatality rate of 1.10. National Highway Traffic Safety Administration, *Traffic Safety Facts 2011*, DOT HS 811754, Tables 2 and 10.

<sup>20</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>21</sup> Two of the current traffic safety sanctions are “weak” sanctions; they do not withhold 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; 20 states were subject to that sanction in FY2013. Another requires states to impose certain minimum penalties for repeat offenders convicted of driving while intoxicated; 23 states were subject to that sanction in FY2013. 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 now in compliance with that requirement.

<sup>22</sup> P.L. 112-141 (MAP-21), §31105.

<sup>23</sup> These are collected in Part 571 of Title 49 of the *Code of Federal Regulations*.

electronic stability control systems for heavy vehicles.<sup>24</sup> NHTSA also tests vehicles for compliance with safety standards and rates the crashworthiness of vehicles, and monitors consumer complaints about vehicles for evidence of safety defects that may necessitate a vehicle recall.<sup>25</sup>

Improvements in vehicle design, such as the use of crumple zones, have made vehicles structurally safer. NHTSA also had 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 decline in the percentage of crashes in which people are killed or injured, from around 33% (during the 1990s) to around 28% (2007-2011).<sup>26</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 is required on all new passenger vehicles. 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 safety standards required for all vehicles because of their potential to prevent crashes.<sup>27</sup> NHTSA is evaluating whether some of these technologies should be mandated as vehicle safety standards.

## Roadway Safety Improvements

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.<sup>28</sup> DOT is encouraging a shift in emphasis from highway design standards to steps that improve safety as measured by changes in crash data.<sup>29</sup> Projects are chosen by state DOTs.

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<sup>24</sup> Department of Transportation, *March 2013 Significant Rulemaking Report*.

<sup>25</sup> Manufacturers typically voluntarily recall vehicles that have a defect, but if necessary NHTSA can order a manufacturer to recall a defective vehicle.

<sup>26</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts 2011*, Table 1.

<sup>27</sup> National Transportation Safety Board, *Most Wanted List: Mandate Motor Vehicle Collision Avoidance Technologies*, [http://www.nts.gov/safety/mwl10\\_2012.html](http://www.nts.gov/safety/mwl10_2012.html).

<sup>28</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 <http://safety.fhwa.dot.gov/provencountermeasures/> for more information.

<sup>29</sup> See, for example, DOT’s Highway Safety Manual website (<http://safety.fhwa.dot.gov/hsm/>).

## 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 work 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 operators with millions of vehicles and drivers. FMCSA inspectors and law enforcement officials have the power to remove a vehicle from service, and FMCSA can order an operator to suspend operations in the event of serious violations.<sup>30</sup> Fines for less severe violations are imposed by state authorities.

In 2005, Congress limited FMCSA's authority to conduct roadside inspections of motorcoach buses.<sup>31</sup> The limitation does not absolutely prohibit en-route inspections, but allows motorcoaches to be pulled over for inspection only at places that provide "reasonable accommodations" for passengers, such as highway rest stops and weigh stations, unless the motorcoach exhibits an imminent or obvious safety hazard. The rationale for this limitation is the safety of passengers should they need to leave the vehicle during the inspection. As a result of several deadly crashes in recent years, motorcoach bus safety has assumed a higher profile, and critics have contended that the 2005 provision limits FMCSA's ability to enforce motorcoach safety rules. FMCSA has ordered several motorcoach operators to cease operations.

FMCSA recently adopted a new enforcement approach called the Compliance, Safety, Accountability program (CSA). CSA is a monitoring program that seeks to use data collected through federal and state inspections and crash data to identify high-risk operators who can then be targeted for interventions.

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 dining on the road. 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>32</sup> for sleep apnea. FMCSA would have to go through the rulemaking process in order to implement the recommendation.<sup>33</sup>

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<sup>30</sup> For example, in March 2013, FMCSA ordered two motorcoach operators, the Fung Wah and Ming An bus companies, to suspend operations due to numerous safety violations.

<sup>31</sup> SAFETEA-LU (P.L. 109-59), §4106(a)(7), codified at 49 U.S.C. 31102(b)(2)(x).

<sup>32</sup> BMI stands for Body Mass Index, and is essentially a measure of a person's weight divided by his or her height.

<sup>33</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.

In MAP-21, Congress charged FMCSA to work on several areas of commercial transportation safety, including

- requiring electronic logging to improve enforcement of hours of service rules affecting certain drivers (49 U.S.C. 31137);
- establishing a national registry of medical examiners qualified to certify the medical fitness of commercial drivers, to reduce evasion of commercial driver medical standards (49 U.S.C. 31149); and
- establishing a national clearinghouse for controlled substance and alcohol test results of commercial drivers to reduce crashes, injuries, and death due to misuse of alcohol or controlled substances by commercial drivers (49 U.S.C. 31306a).

## **Congressional Action**

Congress is likely to review the performance of the current traffic safety measures and to consider additional traffic safety measures in the context of the next surface transportation authorization legislation. The current authorization expires at the end of FY2014.

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