



*Testimony of*

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Member  
National Transportation Safety Board

*Before the*

Committee on Transportation and Infrastructure  
Subcommittee on Highways and Transit  
United States House of Representatives

— *On* —

Every Life Counts: Improving the Safety of Our Nation's Roadways

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Good morning Chairwoman Norton, Ranking Member Davis, Chairman DeFazio, and Ranking Member Graves, and the Members of the Subcommittee. And, let me offer my congratulations to Vice Chair Finkenauer on her selection as Vice Chair of the Subcommittee. Thank you for inviting the National Transportation Safety Board (NTSB) to testify before you today.

In 1967, Congress established the NTSB as an independent agency within the United States Department of Transportation (USDOT) with a clearly defined mission to promote a higher level of safety in the transportation system. In 1974, Congress reestablished the NTSB as a separate entity outside of the USDOT, reasoning that “no federal agency can properly perform such (investigatory) functions unless it is totally separate and independent from any other...agency of the United States.”<sup>1</sup> Because the USDOT has broad operational and regulatory responsibilities that affect the safety, adequacy, and efficiency of the transportation system, and transportation accidents may suggest deficiencies in that system, the NTSB’s independence was deemed necessary for proper oversight.

The NTSB is charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—highway, rail, marine, and pipeline. We determine the probable cause of the accidents we investigate, and we issue recommendations to federal, state, and local agencies, and other entities, aimed at improving safety, preventing future accidents and injuries, and saving lives. The NTSB is not a regulatory agency in the conventional sense – it does not promulgate operating standards and does not certificate organizations and individuals. The goal of our work is to foster safety improvements, through formal and informal safety recommendations, for the traveling public.

On call 24 hours a day, 365 days a year, our investigators travel throughout the country and to every corner of the world in response to transportation disasters. In addition, we conduct special transportation safety studies and coordinate the resources of the federal government and other organizations to assist victims and their family members who have been impacted by major transportation disasters. Since our inception, we have investigated more than 146,000 aviation accidents and thousands of surface transportation accidents. We have issued more than 14,650 safety recommendations to more than 2,400 recipients in all transportation modes, over 82 percent of which have been implemented.

In the case of highway accidents, current law grants the NTSB jurisdiction to investigate those “highway accident[s], including a railroad grade crossing accident, the Board selects in cooperation with a State.”<sup>2</sup> The NTSB has a distinguished record of contributing to highway safety for decades. For example, as a result of the NTSB’s investigative work and safety recommendations, automobile airbags for all citizens are safer, child restraint fitting stations are available nationwide, and graduated driver licensing programs for teenagers have been implemented by many states. Additional examples of safety improvements inspired by or resulting from investigations or recommendations of the NTSB include improvements in the design and construction of school buses, highway barrier improvements, and center high-mounted rear brake

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<sup>1</sup> Independent Safety Board Act of 1974 § 302, Pub. L. 93-633, 88 Stat. 2166-2173 (1975).

<sup>2</sup> 49 U.S.C. § 1131(b)

lights on automobiles. Although there is no way to quantify the accidents that did not happen or the lives that were not lost because of the efforts of the NTSB, the tangible safety improvements that can be directly associated with the work of the NTSB have saved countless lives and avoided millions and perhaps billions of dollars in injuries and property damage.

Our goal is zero deaths and injuries on our nation's roadways; to eliminate the more than 37,000 people killed in crashes on US highways in 2017.<sup>3</sup>

On February 4, 2019, we announced our Most Wanted List of Transportation Safety Improvements (MWL) for 2019–2020.<sup>4</sup> First issued in 1990, the MWL serves as the agency's primary advocacy tool to help save lives, prevent injuries, and reduce property damage resulting from transportation accidents. The NTSB created the program to increase industry, Congressional, and public awareness of the transportation safety issues identified in our accident investigations and safety studies. Safety issues highlighted on the MWL receive increased emphasis and become the primary focus of our advocacy activities.

The issues selected for the MWL are chosen from our safety recommendations and emerging areas. Selections are based on the magnitude of risk, potential safety benefits, timeliness, and probability of advocacy efforts to bring about change. Issues selected have been thoroughly validated by our investigations. They are issues we identify as having received insufficient or inadequate action. They are issues that could create a high safety risk if not addressed.

Our 2019–2020 list includes seven areas that affect highway safety:

- Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes
- End Alcohol and Other Drug Impairment
- Eliminate Distractions
- Strengthen Occupant Protection
- Increase Implementation of Collision Avoidance Systems in All New Highway Vehicles
- Reduce Fatigue-Related Accidents
- Require Medical Fitness – Screen for and Treat Obstructive Sleep Apnea

My testimony today will focus on those areas most closely related to pedestrian and passenger vehicle safety.

## **Most Wanted List of Transportation Safety Improvements**

### *Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes*

Speeding—either exceeding the speed limit or driving too fast for conditions—is one of the most common factors in motor vehicle crashes in the United States. National Highway Traffic

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<sup>3</sup> National Highway Traffic Safety Administration, *2017 Motor Vehicle Crashes: Overview* (Washington, DC: NHTSA, 2018).

<sup>4</sup> National Transportation Safety Board, [2019-2020 Most Wanted List](#) (Washington, DC: NTSB, 2019).

Safety Administration (NHTSA) data show that in 2016, 10,291 people were killed in crashes in which at least one driver was speeding. This represents 27 percent of the traffic fatalities that year, and a 5.6-percent increase from 2015. Speeding increases the likelihood of being involved in a crash, and it increases the severity of injuries sustained by all road users in a crash.

On July 25, 2017, we adopted a safety study, *Reducing Speeding-Related Crashes Involving Passenger Vehicles*, which examined the causes and trends in speeding-related crashes and countermeasures to prevent them.<sup>5</sup> The study focused on five safety issues:

- speed limits
- data-driven approaches for speed enforcement
- automated speed enforcement
- intelligent speed adaptation
- national leadership

Speed limits are a critical component of speed management, but Federal Highway Administration (FHWA) guidance through the Manual of Uniform Traffic Control Devices (MUTCD) emphasizes that states and localities set speed limits within 5 miles per hour (mph) of which 85% of vehicles are traveling. The focus on the 85<sup>th</sup> percentile has led to increasing speed limits across the United States. For example, in 2012, 35 states had maximum speed limits at or above 70 mph; that increased to 41 states by 2016, with 7 of those states at or above 80 mph. The NTSB recommends de-emphasizing the 85<sup>th</sup> percentile approach; requiring consideration of factors which are currently only optional, such as crash history, roadway characteristics, and roadway conditions; and incorporating a safe systems approach for urban roads (evaluating pedestrian and bicycle traffic).

Speed limits must also be enforced to be effective. Successful enforcement is achieved through law enforcement commitment to data-driven, high-visibility enforcement. However, law enforcement reporting of speeding-related crashes is inconsistent, which leads to underreporting of speeding-related crashes. This underreporting leads stakeholders and the public to underestimate the overall scope of speeding as a traffic safety issue nationally and hinders the effective implementation of data-driven speed enforcement programs.

Automated speed enforcement (ASE) is also widely acknowledged as an effective countermeasure to reduce speeding-related crashes, fatalities, and injuries. However, only 14 states and the District of Columbia use it. Many states have laws that prohibit or place operational restrictions on ASE, and federal guidelines for ASE are outdated and not well known among ASE program administrators. Point-to-point enforcement, which is based on the average speed of a vehicle between two points, can be used on roadway segments many miles long. This type of ASE has had recent success in other countries, but it is not currently used in the United States. We recommend that state and local agencies use ASE and that the FHWA work with NHTSA to assess the effectiveness of point-to-point enforcement in the United States.

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<sup>5</sup> National Transportation Safety Board, [\*Reducing Speeding-Related Crashes Involving Passenger Vehicles\*](#), (Washington, DC: NTSB, 2018).

In addition to enforcement efforts to address speeding, there needs to be increased leadership and attention for this at the national level. Current federal-aid programs do not ensure that states fund speed management activities at a level commensurate with the national impact of speeding on fatalities and injuries. Also, unlike other traffic safety issues with a similar impact (such as alcohol-impaired driving) there are no nationwide programs to increase public awareness of the risks of speeding. Although the USDOT has established a multi-agency team to coordinate speeding-related work throughout the department, this team's work plan does not include means to ensure that the planned actions are completed in a timely manner.

National, state, and local traffic safety stakeholders have repeatedly highlighted that—unlike other crash factors such as alcohol impairment or unbelted occupants—speeding has few negative social consequences associated with it. Surveys show drivers generally disapprove of speeding. However, most are complacent about the risks involved and speeding is a common behavior. Safety stakeholders told NTSB that because the dangers of speeding are not well-publicized, drivers underappreciate the risks of speeding in terms of crash causation. Stakeholders also expressed the belief that, to change public perceptions of speeding, a coordinated effort among safety advocacy groups, with strong leadership from the federal government, is needed. The lack of a national traffic safety campaign was cited as a key issue hindering the effective implementation of speeding prevention programs.

NHTSA, through its Traffic Safety Marketing (TSM) group, provides marketing materials and advice for states to use in developing traffic safety campaigns. It also coordinates national traffic safety events. Our study found that none of the traffic safety events that NHTSA sponsored in 2016 addressed speeding. TSM does make available marketing materials that state and local agencies can use in their own campaigns. However, in the absence of a national speeding campaign, there is incomplete participation among states and little consistency among the individual state campaigns.

We concluded that traffic safety campaigns that include highly publicized, increased enforcement can be an effective speeding countermeasure. This led us to recommend that NHTSA collaborate with other traffic safety stakeholders to develop and implement an ongoing program to increase public awareness of speeding as a national traffic safety issue. The program should include, but not be limited to, initiating an annual enforcement mobilization directed at speeding drivers.

Another way to increase public awareness of speeding as a traffic safety issue is by providing states with financial incentives to be more engaged in addressing speeding. Highway Safety Program grants are allocated based on the population and road miles in each state, and these funds can be spent on any of 10 different focus areas (which includes speeding) according to a state's Highway Safety Plan. In contrast, National Priority Safety Programs funds are directed toward seven different priority areas, with the funding level for each priority area (rather than the overall total) established by Congress. Each priority area has specific eligibility requirements that incentivize states to conduct particular traffic safety activities. Speeding is not one of the seven priority areas.

The Highway Safety Program allows states significant leeway to spend funds according to their particular traffic safety priorities, including speeding; but it does not provide a means to

encourage states to focus on national priorities. In contrast, National Priority Safety Program grants are specifically designed to encourage states to focus additional traffic safety efforts in areas of national importance. However, these funds currently cannot be used for speed management. Thus, we concluded that current federal-aid programs do not require or incentivize states to fund speed management activities at a level commensurate with the national impact of speeding on fatalities and injuries and recommended that NHTSA establish a program to incentivize state and local speed management activities.

In the study, we also recommended completion of all actions in the USDOT 2014 Speed Management Program Plan, FHWA assess of the effectiveness of point-to-point speed enforcement in the U.S., incentivizing passenger vehicle manufacturers and consumers to adopt intelligent speed adaptation systems, including speed limiters, and increasing the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improving consistency in law enforcement reporting of speeding-related crashes.

### *End Alcohol and Other Drug Impairment in Transportation*

The issue area of alcohol and other drug impairment in transportation has been on every Most Wanted List we have published since 1990, and we have made hundreds of recommendations to address this issue. Impairment in transportation continues to be a public health concern, with more than 10,000 highway fatalities each year in the United States involving alcohol-impaired drivers. Impairment by over-the-counter medications, prescription drugs, synthetic drugs, and illicit substances is also a rising concern.

We have recommended a comprehensive approach to address substance-impaired driving to prevent crashes, reduce injuries, and save lives. When it comes to alcohol use, research shows that impairment begins before a person's blood alcohol concentration (BAC) level reaches 0.08 percent, the current illegal *per se* limit in every state except Utah, which was the first state to enact 0.05 BAC law in 2017. In fact, by the time BAC reaches 0.08, the risk of a fatal crash has more than doubled.<sup>6</sup> We have recommended that states lower the *per se* BAC threshold to 0.05 percent or lower. Further, we have recommended that NHTSA seek legislative authority to award incentive grants for states to establish a *per se* BAC limit of 0.05 or lower for all drivers not already required to adhere to lower BAC limits.<sup>7</sup>

To further deter impaired driving, we have also recommended high-visibility enforcement of impaired driving laws using passive alcohol-sensing technology, as well as encouraged the development of technology that will enable vehicles to detect driver impairment, like the Driver Alcohol Detection System for Safety<sup>8</sup>. We have also made recommendations to reduce recidivism

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<sup>6</sup> Compton, R.P., R.D. Blomberg, H. Moskowitz, M. Burns, R.C. Peck, and D. Fiorentino. 2002. "Crash Risk of Alcohol-Impaired Driving." *Alcohol, Drugs and Traffic Safety-T2002. Proceedings of the 16th International Conference on Alcohol, Drugs and Traffic Safety (August 4-9, 2002)*. Montreal, Canada: International Council on Alcohol, Drugs and Traffic Safety. Blomberg, Richard D., Raymond C. Peck, Herbert Moskowitz, Marcelline Burns, and Dary Fiorentino. 2005. *Crash Risk of Alcohol Involved Driving: A Case-Control Study*. Stamford, CT: Dunlap and Associates, Inc.

<sup>7</sup> National Transportation Safety Board, [Safety Recommendation H-13-001](#).

<sup>8</sup> National Transportation Safety Board, [Safety Recommendation H-12-048](#)

by driving while intoxicated (DWI) offenders. Recommended strategies include requiring ignition interlocks for all convicted DWI offenders and making special efforts to target repeat offenders.<sup>9</sup>

In the United States, ignition interlocks have historically been viewed as a sanction for repeat or high-BAC offenders; however, in recent years, the movement has been toward mandating ignition interlocks for all DWI offenders, including first-time offenders. Currently 32 states plus the District of Columbia have all-offender ignition interlock laws.

Research evaluation of ignition interlock programs over the last two decades has found that ignition interlock devices are effective in reducing recidivism among DWI offenders, sometimes by as much as 62 to 75 percent. One study examined the effectiveness of laws that require alcohol interlock installations for first-time offenders as well as repeat or high-BAC offenders; it found an additional benefit in reducing repeat DWI offenses.<sup>10</sup> Another study estimated 1,100 deaths could have been prevented in 1 year had interlock devices been required for drivers with recent DUI convictions.<sup>11</sup>

Based on the lack of significant progress in reducing alcohol-impaired driving fatalities over the last two decades, it is clear that more can be done to prevent these tragedies. The evidence shows that ignition interlock technology can – and should – be embraced in this battle.

Drugs other than, or in combination with, alcohol also pose an ongoing, increasing threat to highway safety. On March 29, 2017, near Concan, Texas, a pickup truck crossed into the opposite travel lane and collided with a medium-size bus, killing the bus driver and 12 passengers. We determined that the probable cause of the crash was the failure of the pickup truck driver to control his vehicle due to impairment stemming from his use of marijuana in combination with misuse of a prescribed medication.<sup>12</sup> As part of this investigation, we found that law enforcement officers need advanced training to identify the signs and symptoms of impairment as well as additional tools, such as roadside drug screening devices, in order to better detect drivers operating under the influence of drugs. Oral fluid drug screening devices can improve the ability of law enforcement officers to detect drug-impaired drivers. We recommended that NHTSA develop and disseminate best practices, identify model specifications, and create a conforming products list for oral fluid drug screening devices. We also urged NHTSA to evaluate best practices and countermeasures found to be the most effective in reducing fatalities, injuries, and crashes involving drug-impaired drivers and provide additional guidance to the states on drug-impaired driving.<sup>13</sup>

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<sup>9</sup> National Transportation Safety Board, [Reaching Zero: Actions to Eliminate Alcohol-Impaired Driving](#), Rpt. No. SR-13/01 (Washington, DC: NTSB, 2013).

<sup>10</sup> A. T. McCartt and others, Washington State's Alcohol Ignition Interlock Law: Effects on Recidivism Among First DUI Offenders, (Arlington, VA: Insurance Institute for Highway Safety, 2012).

<sup>11</sup> A. K. Lund and others, "Contribution of Alcohol-Impaired Driving to Motor Vehicle Crash Deaths in 2005," *8th Ignition Interlock Symposium, Seattle, Washington* (2007).

<sup>12</sup> National Transportation Safety Board, [Pickup Truck Centerline Crossover Collision with Medium-Size Bus on US Highway 83, Concan, Texas, March 29, 2017](#), Rpt. No. HAR-18/02 (Washington, DC: NTSB, 2018).

<sup>13</sup> National Transportation Safety Board, [Safety Recommendation H-18-056](#) and [H-18-057](#).



## *Eliminate Distractions*

Drivers and operators in all modes of transportation must keep their hands, eyes, and minds focused on operating their vehicles. According to NHTSA, distraction was reported to be involved in almost 3,200 highway fatalities, or 8.6 percent of all fatalities in 2017.<sup>14</sup>

On August 5, 2010, in an active work zone in Gray Summit, Missouri, a truck-tractor was struck in the rear by a pickup truck, which was then struck in the rear by a school bus carrying 23 passengers. The school bus was then struck by another school bus carrying 31 passengers. The driver of the pickup and one passenger seated in the rear of the lead school bus were killed. A total of 35 passengers from both buses, the two bus drivers, and the driver of the truck-tractor sustained injuries ranging from minor to serious. We determined that the probable cause of the initial collision was the pickup driver's distraction, likely due to his ongoing text messaging conversation. As a result of this investigation, we recommended that the 50 states and the District of Columbia ban the nonemergency use of portable electronic devices (other than those designed to support the driving task) for all drivers, and to use high-visibility enforcement and targeted communication campaigns.<sup>15</sup> Currently, 16 states ban hand-held use and new laws are being considered in many other states this year. In the seven years since we made these recommendations, we continue to encounter crashes where use of personal electronic devices played a part. Real change will require a three-pronged approach that includes strict laws, proper education, and effective enforcement.

## *Strengthen Occupant Protection*

We have investigated many crashes in which improved occupant protection systems, such as seat belts, child restraints, and other vehicle design features, could have reduced injuries and saved lives. Recent investigations have highlighted the importance of proper use of the safety equipment, effective design, and readily accessible and identifiable evacuation routes on larger passenger vehicles, such as limousines, school buses, motor coaches, and other commercial vehicles.

Seat belts are the best defense against motor vehicle injuries and fatalities because they protect vehicle occupants from the extreme forces experienced during crashes. Unbelted vehicle occupants frequently injure other occupants, and unbelted drivers are less likely than belted drivers to be able to control their vehicles. In addition, seat belts prevent occupant ejections. In 2016, only 1 percent of vehicle occupants using seat belts were ejected, while 29 percent of unbelted vehicle occupants were ejected. Among those occupants completely ejected from their passenger vehicles, 81 percent were killed. NHTSA estimates that seat belts saved the lives of nearly 15,000 motor vehicle occupants age 5 and older in 2016, nationwide. Further, had all passenger vehicle occupants age 5 and older used seat belts in 2016 an additional 2,456 lives could have been saved. From 1975 through 2015, seat belts saved more than 344,000 lives nationwide.

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<sup>14</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts, 2017 Fatal Motor Vehicle Crashes: Overview* (Washington, DC: US Department of Transportation, NHTSA, 2017). DOT HS 812 603, p. 5.

<sup>15</sup> National Transportation Safety Board, [\*Multivehicle Collision, Interstate 44 Eastbound, Gray Summit, Missouri, August 5, 2010\*](#), Rpt. No. HAR-11/03 (Washington, DC: NTSB, 2011).

Since 1995, we have recommended that states enact legislation providing for the primary enforcement of seat belt laws, which would allow law enforcement officers to stop a vehicle solely because occupants are not wearing seat belts. Currently, 34 states and the District of Columbia authorize primary enforcement of their seat belt laws, but only 29 states apply the law to all passenger seating positions. In 2015, we recommended that states enact legislation for primary enforcement of a mandatory seat belt use law for all vehicle seating positions equipped with a passenger restraint system.<sup>16</sup> This recommendation covers all motor vehicles, including buses. Primary enforcement of mandatory seat belt use laws remains the best way to raise and maintain high seat belt use rates. States that have enacted primary enforcement seat belt laws have historically experienced increases in seat belt use rates between 5 and 18 percentage points. The increased use is based on the realization by drivers that they may be stopped for violating the seat belt law.<sup>17</sup>

We have a long history of investigating school bus crashes. We have found compartmentalization to be effective in frontal collisions, but have also identified the limitations of passenger seats with no belts or lap belt only restraints. Modern school bus seat technology has overcome previous capacity issues, and the installation and proper use of passenger seat belts, particularly lap/shoulder belts, has made school buses safer in severe side impacts and rollovers. On November 21, 2016, six students died, and more than 20 others were injured in Chattanooga, Tennessee, when a Hamilton County Department of Education school bus struck a utility pole, rolled onto its right side, and collided with a tree. Contributing to the severity of the crash was the lack of passenger lap/shoulder belts on the bus.<sup>18</sup> In a special investigation report we developed following this crash, we recommended that jurisdictions which do not yet require passenger belts in large school buses enact legislation to require that all new large school buses be equipped with passenger lap/shoulder belts for all passenger seating positions.<sup>19</sup> The report also focused on the benefits of electronic stability control (ESC) and automatic emergency braking (AEB) in improving driver and vehicle safety.<sup>20</sup>

We have also made recommendations to NHTSA regarding front, side, and rear underride protections for tractor-trailer and single unit trucks to reduce underride and injuries to passenger vehicle occupants. Specifically, as a result of our safety investigations, we have recommended that NHTSA establish performance standards for front, side, and underride protection systems for single-unit trucks with gross vehicle weight ratings over 10,000 pounds, and to require such systems on all such newly manufactured trucks.<sup>21</sup> Each of these recommendations are currently classified “Open—Unacceptable Response.” We have also recommended that NHTSA require

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<sup>16</sup> National Transportation Safety Board, [Safety Recommendation H-15-042](#).

<sup>17</sup> Centers for Disease Control and Prevention, *Primary Enforcement of Seat Belt Laws*, <https://www.cdc.gov/motorvehiclesafety/calculator/factsheet/seatbelt.html>

<sup>18</sup> National Transportation Safety Board, *Selective Issues in School Bus Transportation Safety: Crashes in Baltimore, Maryland, and Chattanooga, Tennessee*, Rpt. No. SIR-18/02 (Washington, DC: NTSB, 2018).

<sup>19</sup> National Transportation Safety Board, [Safety Recommendations H-18-009](#) and [H-18-010](#).

<sup>20</sup> The report concluded that the technology could have assisted the driver in maintaining vehicle control and mitigated the severity of the crash by reducing the speed of the vehicle.

<sup>21</sup> National Transportation Safety Board, [Safety Recommendations H-10-012](#), [H-10-013](#), [H-13-013](#), [H-13-014](#), [H-13-015](#), and [H-13-016](#).

side and rear underride systems for newly manufactured trailers with gross vehicle weight ratings over 10,000 pounds.<sup>22</sup> Each of these recommendations is currently classified “Open—Acceptable Response.”

### *Increase Implementation of Collision Avoidance Technologies*

More than 90 percent of crashes on United States roadways can be attributed to driver error.<sup>23</sup> For more than two decades, we have been advocating implementation of various technologies to help reduce driver error. Vehicle-based collision avoidance technologies, such as forward collision warning (FCW) and autonomous emergency braking (AEB) systems, are important for avoiding or mitigating the impact of rear-end crashes, which represent nearly half of all two-vehicle crashes. Other driver-assist and collision avoidance technologies, such as adaptive cruise control, advance lighting, blind spot detection, and lane departure warning systems can aid drivers and help reduce the occurrence of other types of crashes. These technologies improve visibility, help maintain safe distance between vehicles, alert drivers to impending hazards and potential crashes, or automatically brake to mitigate the consequence of a crash.

In 2015, we issued a special investigation report regarding the use of forward collision avoidance systems to prevent and mitigate rear-end crashes. The report was based on the examination of current research into the effectiveness of collision avoidance systems and investigations of nine crashes—that resulted in 28 fatalities and injuries to 90 vehicle occupants—involving passenger or commercial vehicles striking the rear of another vehicle. As part of this report, we recommended that passenger and commercial vehicle manufacturers install FCW and AEB as standard equipment, and, in order to incentivize manufacturers, that NHTSA expand the New Car Assessment Program (NCAP) to include ratings for various collision avoidance technologies.<sup>24</sup> Most recently, on the night of January 19, 2016, a motorcoach occupied by a driver and 21 passengers collided with an unmarked crash attenuator and concrete barrier on a highway in San Jose, California, during low visibility conditions. Two passengers were ejected and died, and the driver and 13 passengers were injured. Upon later testing, we determined that had the bus been equipped with a collision avoidance system, the system could have detected the crash attenuator and alerted the driver to the hazard to mitigate or prevent the crash.<sup>25</sup>

### *Reduce Fatigue-Related Accidents*

On March 20, 2016, a passenger car, driven by an 18-year-old and carrying three passengers ranging in age from 17 to 19, crossed a median and collided with a truck-tractor in combination with a semitrailer in Robstown, Texas. The three teenage passengers were killed. We

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<sup>22</sup> National Transportation Safety Board, [Safety Recommendations H-14-002](#) and [H-14-004](#).

<sup>23</sup> National Highway Traffic Safety Administration, Critical Reasons for Crashes Investigated in the National Motor Vehicle Crash Causation Survey. February 2015, (DOT HS 812 115).

<sup>24</sup> National Transportation Safety Board, [The Use of Forward Collision Avoidance Systems to Prevent and Mitigate Rear-End Crashes](#), Rpt. No. SIR-15/01 (Washington, DC: NTSB, 2015).

<sup>25</sup> National Transportation Safety Board, [Motorcoach Collision With Crash Attenuator in Gore Area, US Highway 101](#), Rpt. No. HAR-17/01 (Washington, DC: NTSB, 2017).

determined the probable cause of this crash was the car driver's loss of control due to fatigue-induced inattention.<sup>26</sup>

NHTSA reported that, in 2015, more than 72,000 police-reported crashes involved drowsy driving, and those crashes resulted in 41,000 injuries and 846 deaths. However, NHTSA has acknowledged that these numbers likely are underestimated.<sup>27</sup> Other research conducted by the AAA Foundation for Traffic Safety estimated that more than 6,000 people are killed in drowsy-driving related crashes each year.<sup>28</sup>

We have issued more than 200 safety recommendations addressing fatigue-related problems across all modes of transportation. Tackling the problem of fatigue in highway transportation requires a comprehensive approach focused on research, education, training, technology, sleep disorder treatment, regulations, and on- and off-duty scheduling policies and practices. Some of our earliest recommendations called for research to better understand the problem of fatigue in transportation, and over the past three decades, several studies have been done. But research only goes so far; we must now implement what we have learned.

## **Other Highway Safety Issues**

### *Pedestrian Safety*

Until 2010, the number of pedestrians killed in highway crashes decreased for 35 years, but then reversed course. In 2017, the number of pedestrians who died in traffic crashes was 5,977, an increase of more than 45 percent since 2009.<sup>29</sup> Pedestrian deaths in recent years account for 16 percent (or almost one in six) of all highway fatalities.

In May 2016, we hosted a pedestrian safety forum, bringing together federal and state officials and experts to discuss key aspects of the issue.<sup>30</sup> Additionally, between April and November 2016, we worked with local law enforcement partners to initiate 15 investigations into fatal pedestrian crashes. The investigative work on these crashes illustrated a variety of pedestrian safety issues. This work culminated in the adoption last September of our Special Investigation Report: *Pedestrian Safety* that included the completed investigations, a review of the literature, and information about promising countermeasures.<sup>31</sup>

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<sup>26</sup> National Transportation Safety Board, [\*Passenger Vehicle Median Crossover Crash, US Highway 77, Robstown, Texas, March 20, 2016\*](#), Rpt. No. HAB-16/09 (Washington, DC: NTSB, 2016).

<sup>27</sup> National Highway Traffic Safety Administration, *Asleep at the Wheel: A National Compendium of Efforts to Eliminate Drowsy Driving*. March 2017, DOT HS 812 352.

<sup>28</sup> AAA Foundation for Traffic Safety, *Prevalence of Motor Vehicle Crashes Involving Drowsy Drivers*, United States, 2009–2013, November 2014.

<sup>29</sup> National Highway Traffic Safety Administration, *Traffic Safety Facts: Pedestrians*. March 2019. (DOT HS 812 681).

<sup>30</sup> National Transportation Safety Board, [\*Forum: Pedestrian Safety\*](#), (Washington, DC: National Transportation Safety Board, 2016).

<sup>31</sup> National Transportation Safety Board, [\*Pedestrian Safety\*](#), SIR-18/03 (Washington, DC: 2018).

The report found that vehicle-based countermeasures, such as improved headlights, vehicle designs that reduce injuries to pedestrians, and collision avoidance systems would improve pedestrian safety. We recommended that NHTSA revise Federal Motor Vehicle Safety Standard 108 to improve vehicle lighting, develop performance test criteria for manufacturers to use in evaluating the extent to which automated pedestrian safety systems will mitigate pedestrian injuries, and incorporate those systems into the New Car Assessment Program.

It also found that effective street designs for pedestrian safety are highly context-dependent and best managed by local interests. However, local officials would benefit from having improved resources, tools and funding support to develop and implement those plans. We recommended that FHWA expand its support of state and local safety projects beyond its current focus cities.

Additionally, the study addressed limitations in the data available to decision makers who are working to reduce pedestrian crashes. Planners need localized pedestrian data to support the decision-making process. However, the most complete set of pedestrian crash data is more than two decades old. Thus, we recommended that NHTSA and the Centers for Disease Control work together to develop a detailed pedestrian crash data set combining highway crash data and injury health data with the goal of producing a national database of pedestrian injuries and fatalities. Further, we urged NHTSA to develop a detailed pedestrian crash data set that represents the current, complete range of crash types and that can be used for local and state analysis. Finally, we recommended that FHWA develop definitions and methods for collecting pedestrian exposure data.

### *Motorcycle Safety*

We are concerned about the growing number of motorcyclists killed or injured in motorcycle crashes. In 2016, more than 5,000 motorcyclists were killed nationwide, or about 14 motorcyclists per day. The number of motorcycle crash fatalities has more than doubled over the last two decades. According to NHTSA, motorcycles are the most dangerous form of motor vehicle transportation. Motorcycles represent only 3 percent of the vehicles on our roads, but motorcyclists accounted for 14 percent of all traffic fatalities.<sup>32</sup>

These concerns led us to complete a safety report in October 2018, which assessed select risk factors associated with the causes of motorcycle crashes in the United States and made recommendations for improving motorcycle crash prevention.<sup>33</sup> The data analyzed in this report was provided by FHWA, from its 2016 Motorcycle Crash Causation Study (MCCS). The MCCS represents the most recent data available for studying motorcycle crashes in the United States since the USDOT published its comprehensive Motorcycle Accident Cause Factors and Identification of Countermeasures report in 1981.

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<sup>32</sup> National Highway Traffic Safety Administration, Traffic Safety Facts: Motorcycles, 2016 Data, February 2018, DOT HS 812 492.

<sup>33</sup> National Transportation Safety Board, [\*Select Risk Factors Associated with Causes of Motorcycle Crashes\*](#), SR-18/01 (Washington, DC: 2018).

We concluded many high-risk traffic situations between motorcycles and other motor vehicles could be prevented if vehicle drivers were better able to detect and anticipate the presence of a motorcycle when entering or crossing a road, making a turn or changing lanes. We also determined stability control systems on motorcycles could reduce single-vehicle crashes involving loss of control which would reduce the prevalence of motorcyclists killed or injured by impacts with fixed roadside objects.

There is a need for enhanced braking and stability control systems on motorcycles. More than a third of the crashes analyzed involved a loss of control that contributed to crash causation. More widespread availability of enhanced braking and stability control systems on motorcycles could improve safety by enhancing the effectiveness of braking, collision avoidance performance, and stability control for both novice and experienced riders.

In 2007, following a 2-day public forum on motorcycle safety at which it heard from a group of panelists representative of all important aspects of motorcycle safety, NTSB recommended that states require all motorcycle riders to wear a helmet compliant with U.S. Federal Motor Vehicle Safety Standard (FMVSS) 218.<sup>34</sup> The use of a compliant safety helmet is the single critical factor in the prevention and reduction of head injury. The effectiveness of appropriately designed motorcycle helmets in preventing and mitigating head injury is unequivocal. NHTSA estimates that helmets are 37 percent effective in preventing fatal injuries to motorcycle riders and 41 percent effective for motorcycle passengers.

Universal helmet laws do increase helmet use. Numerous state studies have shown that helmet law repeals led to reduced usage and increased fatalities. Likewise, enactment of a universal helmet law leads to increased usage and reduced motorcycle deaths. Currently, 19 states, plus the District of Columbia, have a universal helmet law. The remarkable effectiveness of universal helmet laws in preventing death and disability among motorcyclists is a powerful argument for the adoption of such laws, especially in light of the more than 5,200 motorcyclists who were killed on our highways in 2016. For more than 70 years, research has shown that helmets protect motorcyclists and passengers from death and serious injury.

### *Bicycle Safety*

In 2017, almost 800 bicyclists were killed in the United States, representing 2 percent of all traffic deaths. As bicycling becomes more popular as a form of active transportation, especially in urban areas, it is timely and important to ensure and improve roadway safety for bicyclists. We have begun a safety study to identify proven countermeasures that can improve bicyclist safety. In this study, we are exploring improved bicycle infrastructure, advanced vehicle-based technologies, and approaches to increase bicycle helmet use. We anticipate that the study will be published late this year.

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<sup>34</sup> National Transportation Safety Board, Safety Recommendations [H-07-37](#), [H-07-38](#), and [H-07-39](#)

## *Automated Vehicles*

The use of automated vehicle (AV) controls and systems is accelerating rapidly in all modes of transportation. We have monitored AV development and we have a long history of calling for systems to assist the operator by providing an increased margin of safety, such as automatic emergency braking. AVs that incorporate systems proven to enhance safety hold enormous potential benefits for safety.

In 2018, the USDOT updated a federal AV policy focused on highly automated vehicles. Late last year, in response to a call for comments, we commented that NHTSA's proposed AV policies are notable for the voluntary approach to manufacturers' safety self-assessments, testing and validation of system safety, and AV reporting requirements. We applauded NHTSA's efforts to work with industry. However, its general and voluntary guidance of emerging and evolutionary technological advancements shows a willingness to let manufacturers and operational entities define safety. The most recent AV guidance (AV 3.0) is only focused on SAE Level 3 and above while not providing guidance for Level 2 vehicles.

The USDOT has an important responsibility to ensure the safe development and deployment of AV technologies at all levels of automation, and this safety should not be voluntary. However, the policy thus far has carried an overarching message of promoting AV development, but a clear connection to minimum safety requirements has not yet been crafted. NHTSA can and should provide this required safety leadership. We urge NHTSA to lead with detailed guidance and specific standards and requirements.

## **Conclusion**

Thank you for the opportunity to testify before you today. While my testimony has discussed many safety concerns, these are only some of the safety improvements we have identified as needed to prevent crashes, reduce injuries, and save lives. A list of safety recommendations we have made for highway safety that are reflected in our MWL is included with this testimony. I look forward to responding to your questions.







## Appendix: 2019-2020 Most Wanted List Recommendations for Highway Safety

<b>Implement a Comprehensive Strategy to Reduce Speeding-Related Crashes</b>		
<b>Recommendation #</b>	<b>Overall Status</b>	<b>Subject</b>
H-05-020	Open - Acceptable Response	TO THE TEXAS DEPARTMENT OF TRANSPORTATION: Install variable speed limit signs or implement alternate countermeasures at locations where wet weather can produce stopping distances that exceed the available sight distance.
H-12-020	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop performance standards for advanced speed-limiting technology, such as variable speed limiters and intelligent speed adaptation devices, for heavy vehicles, including trucks, buses, and motorcoaches.
H-12-021	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: After establishing performance standards for advanced speed-limiting technology for heavy commercial vehicles, require that all newly manufactured heavy vehicles be equipped with such devices.
H-17-018	Open - Acceptable Response	TO THE UNITED STATES DEPARTMENT OF TRANSPORTATION: Complete the actions called for in your 2014 Speed Management Program Plan, and periodically publish status reports on the progress you have made.
H-17-019	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Identify speeding-related performance measures to be used by local law enforcement agencies, including, but not limited to, the numbers and locations of speeding-related crashes of different injury severity levels, speeding citations, and warnings, and establish a consistent method for evaluating data-driven, high-visibility enforcement programs to reduce speeding. Disseminate the performance measures and evaluation method to local law enforcement agencies.
H-17-020	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Identify best practices for communicating with law enforcement officers and the public about the effectiveness of data-driven, high-visibility enforcement programs to reduce speeding, and disseminate the best practices to local law enforcement agencies.

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H-17-021	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Governors Highway Safety Association, the International Association of Chiefs of Police, and the National Sheriffs' Association to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.
H-17-022	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Federal Highway Administration to update the Speed Enforcement Camera Systems Operational Guidelines to reflect the latest automated speed enforcement (ASE) technologies and operating practices, and promote the updated guidelines among ASE program administrators.
H-17-023	Open - Acceptable Alternate Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Federal Highway Administration to assess the effectiveness of point-to-point speed enforcement in the United States and, based on the results of that assessment, update the Speed Enforcement Camera Systems Operational Guidelines, as appropriate.
H-17-024	Open - Acceptable Alternate Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Incentivize passenger vehicle manufacturers and consumers to adopt intelligent speed adaptation (ISA) systems by, for example, including ISA in the New Car Assessment Program.
H-17-025	Open - Acceptable Alternate Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Collaborate with other traffic safety stakeholders to develop and implement an ongoing program to increase public awareness of speeding as a national traffic safety issue. The program should include, but not be limited to, initiating an annual enforcement mobilization directed at speeding drivers.
H-17-026	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Establish a program to incentivize state and local speed management activities.

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H-17-027	Open - Acceptable Response	TO THE FEDERAL HIGHWAY ADMINISTRATION: Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices so that the factors currently listed as optional for all engineering studies are required, require that an expert system such as USLIMITS2 be used as a validation tool, and remove the guidance that speed limits in speed zones should be within 5 mph of the 85th percentile speed.
H-17-028	Open - Acceptable Response	TO THE FEDERAL HIGHWAY ADMINISTRATION: Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices to, at a minimum, incorporate the safe system approach for urban roads to strengthen protection for vulnerable road users.
H-17-029	Open - Acceptable Response	TO THE FEDERAL HIGHWAY ADMINISTRATION: Work with the National Highway Traffic Safety Administration to update the Speed Enforcement Camera Systems Operational Guidelines to reflect the latest automated speed enforcement (ASE) technologies and operating practices, and promote the updated guidelines among ASE program administrators.
H-17-030	Open - Acceptable Response	TO THE FEDERAL HIGHWAY ADMINISTRATION: Work with the National Highway Traffic Safety Administration to assess the effectiveness of point-to-point speed enforcement in the United States and, based on the results of that assessment, update the Speed Enforcement Camera Systems Operational Guidelines, as appropriate.
H-17-031	Open - Await Response	TO THE SEVEN STATES PROHIBITING AUTOMATED SPEED ENFORCEMENT (MAINE, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, TEXAS, WEST VIRGINIA, AND WISCONSIN): Amend current laws to authorize state and local agencies to use automated speed enforcement.
H-17-032	Open - Await Response	TO THE TWENTY EIGHT STATES WITHOUT AUTOMATED SPEED ENFORCEMENT LAWS (ALABAMA, ALASKA, CALIFORNIA, CONNECTICUT, DELAWARE, FLORIDA, GEORGIA, HAWAII, IDAHO, INDIANA, IOWA, KANSAS, KENTUCKY, MASSACHUSETTS, MICHIGAN, MINNESOTA, MISSOURI, MONTANA, NEBRASKA,

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		NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, OKLAHOMA, PENNSYLVANIA, SOUTH DAKOTA, VERMONT, VIRGINIA, AND WYOMING): Authorize state and local agencies to use automated speed enforcement.
H-17-033	Open - Await Response	TO THE 15 STATES WITH AUTOMATED SPEED ENFORCEMENT RESTRICTIONS (ARIZONA, ARKANSAS, COLORADO, ILLINOIS, LOUISIANA, MARYLAND, NEVADA, NEW YORK, OHIO, OREGON, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, UTAH, AND WASHINGTON): Amend current laws to remove operational and location restrictions on the use of automated speed enforcement, except where such restrictions are necessary to align with best practices.
H-17-034	Open - Acceptable Response	TO THE GOVERNORS HIGHWAY SAFETY ASSOCIATION: Work with the National Highway Traffic Safety Administration, the International Association of Chiefs of Police, and the National Sheriffs' Association to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.
H-17-035	Open - Await Response	TO THE INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE: Work with the National Highway Traffic Safety Administration, the Governors Highway Safety Association, and the National Sheriffs' Association to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.
H-17-036	Open - Acceptable Response	TO THE NATIONAL SHERIFFS' ASSOCIATION: Work with the National Highway Traffic Safety Administration, the Governors Highway Safety Association, and the International Association of Chiefs of Police to develop and implement a program to increase the adoption of speeding-related Model Minimum Uniform Crash Criteria Guideline data elements and improve consistency in law enforcement reporting of speeding-related crashes.

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<b>End Alcohol and Other Drug Impairment</b>		
<b>Recommendation #</b>	<b>Overall Status</b>	<b>Subject</b>
H-12-034	Open - Await Response	TO THE 45 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA, WHICH HAVE LOW REPORTING RATES FOR BAC TESTING: Increase your collection, documentation, and reporting of blood alcohol concentration (BAC) test results by taking the following actions, as needed, to improve testing and reporting rates: (1) enact legislation, (2) issue regulations, and (3) improve procedures used by law enforcement agencies or testing facilities.
H-12-035	Open - Await Response	TO THE 45 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA, WHICH HAVE LOW REPORTING RATES FOR BAC TESTING: Once the National Highway Traffic Safety Administration has developed the blood alcohol concentration (BAC) testing and reporting guidelines recommended in Safety Recommendation H-12-32, incorporate the guidelines into a statewide action plan to achieve BAC reporting rates of at least 80 percent of fatally injured drivers and at least 60 percent of drivers who survived fatal crashes.
H-12-036	Open - Await Response	TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Require law enforcement agencies to collect place of last drink (POLD) data as part of any arrest or accident investigation involving an alcohol-impaired driver.
H-12-037	Open – Await Response	TO THE INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE AND THE NATIONAL SHERIFFS' ASSOCIATION: Inform your members of the value of collecting place of last drink (POLD) data as part of any arrest or accident investigation involving an alcohol-impaired driver.

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H-12-043	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with the Automotive Coalition for Traffic Safety, Inc., to accelerate widespread implementation of Driver Alcohol Detection System for Safety (DADSS) technology by (1) defining usability testing that will guide driver interface design and (2) implementing a communication program that will direct driver education and promote public acceptance.
H-12-045	Open - Await Response	TO 33 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Enact laws to require the use of alcohol ignition interlock devices for all individuals convicted of driving while intoxicated (DWI) offenses.
H-12-048	Open - Acceptable Response	TO THE AUTOMOTIVE COALITION FOR TRAFFIC SAFETY: Work with the National Highway Traffic Safety Administration to accelerate widespread implementation of Driver Alcohol Detection System for Safety (DADSS) technology by (1) defining usability testing that will guide driver interface design and (2) implementing a communication program that will direct driver education and promote public acceptance.
H-13-001	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Seek legislative authority to award incentive grants for states to establish a per se blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers who are not already required to adhere to lower BAC limits.
H-13-005	Open - Await Response	TO THE 50 U.S. STATES AND THE COMMONWEALTH OF PUERTO RICO AND THE DISTRICT OF COLUMBIA: Establish a per se blood alcohol concentration (BAC) limit of 0.05 or lower for all drivers who are not already required to adhere to lower BAC limits.

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H-13-006	Open - Await Response	TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO AND THE DISTRICT OF COLUMBIA: Include in your impaired driving prevention plan or highway safety plan provisions for conducting high-visibility enforcement of impaired driving laws using passive alcohol-sensing technology during law enforcement contacts, such as routine traffic stops, saturation patrols, sobriety checkpoints, and accident scene responses.
H-13-007	Open - Await Response	TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Include in your impaired driving prevention plan or highway safety plan elements to target repeat offenders and reduce driving while intoxicated (DWI) recidivism; such elements should include measures to improve compliance with alcohol ignition interlock requirements; the plan should also provide a mechanism for regularly assessing the success of these efforts. (H-13-07) [This recommendation supersedes Safety Recommendation H-00-26.]
H-13-008	Open - Await Response	TO THE 50 STATES, THE COMMONWEALTH OF PUERTO RICO, AND THE DISTRICT OF COLUMBIA: Take the following steps to move toward zero deaths from impaired driving: (1) set specific and measurable targets for reducing impaired driving fatalities and injuries, (2) list these targets in your impaired driving prevention plan or highway safety plan, and (3) provide a mechanism for regularly assessing the success of implemented countermeasures and determining whether the targets have been met. (H-13-08)
H-13-009	Open - Await Response	TO THE 41 STATES THAT HAVE ADMINISTRATIVE LICENSE SUSPENSION OR REVOCATION LAWS AND THE DISTRICT OF COLUMBIA: Incorporate into your administrative license suspension or revocation laws a requirement that drivers arrested for driving while intoxicated (DWI) use an alcohol ignition interlock on their vehicle for a period of time before obtaining full license reinstatement. (H-13-09)

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H-13-010	Open - Await Response	TO THE 10 STATES THAT DO NOT HAVE ADMINISTRATIVE LICENSE SUSPENSION OR REVOCATION LAWS AND THE COMMONWEALTH OF PUERTO RICO: Establish administrative license suspension or revocation laws that require drivers arrested for driving while intoxicated (DWI) to use an alcohol ignition interlock on their vehicle for a period of time before obtaining full license reinstatement. (H-13-10)
H-15-038	Open – Acceptable Alternate Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Determine the prevalence of commercial motor vehicle driver use of impairing substances, particularly synthetic cannabinoids, and develop a plan to reduce the use of such substances.
H-15-039	Open – Unacceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Work with motor carrier industry stakeholders to develop a plan to aid motor carriers in addressing commercial motor vehicle driver use of impairing substances, particularly those not covered under current drug-testing regulations such as by promoting best practices by carriers, expanding impairment detection training and authority, and developing performance-based methods of evaluation.
H-15-043	Open - Await Response	TO AMERICAN BUS ASSOCIATION, AMERICAN TRUCKING ASSOCIATIONS, COMMERCIAL VEHICLE SAFETY ALLIANCE, OWNER-OPERATOR INDEPENDENT DRIVERS ASSOCIATION, UNITED MOTORCOACH ASSOCIATION: Inform your members about the dangers of driver use of synthetic drugs and encourage them to take steps to prevent drivers from using these substances.
H-16-008	Open - Unacceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Disseminate information to motor carriers about using hair testing as a method of detecting the use of controlled substances, under the appropriate circumstances.



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H-18-035	Open - Response Received	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Examine the influence of alcohol and other drug use on motorcycle rider crash risk compared to that of passenger vehicle drivers, and develop guidelines to assist states in implementing evidence-based strategies and countermeasures to more effectively address substance-impaired motorcycle rider crashes.
H-18-056	Open – Await Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop and disseminate best practices, identify model specifications, and create a conforming products list for oral fluid drug screening devices.
H-18-057	Open - Await Response	TO THE NATIONAL TRAFFIC SAFETY ADMINISTRATION: Evaluate best practices and countermeasures found to be the most effective in reducing fatalities, injuries, and crashes involving drug-impaired drivers and provide additional guidance to the states on drug-impaired driving in Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices.
H-18-060	Open - Await Response	TO THE STATE OF TEXAS: Conduct an executive-level review of your impaired driving program and implement data-driven strategies that result in a downward trend in the number of fatalities, injuries, and crashes involving alcohol- and other drug-impaired drivers.
H-18-061	Open - Await Response	TO THE TEXAS DEPARTMENT OF TRANSPORTATION: Promote the importance of attending drug-impaired driving enforcement training and increase training access to meet the demands of local and state law enforcement.

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<b>Eliminate Distractions</b>		
<b>Recommendation #</b>	<b>Overall Status</b>	<b>Subject</b>
H-03-009	Open - Acceptable Response	TO 34 STATES: Add driver distraction codes, including codes for interactive wireless communication device use, to your traffic accident investigation forms.
H-06-029	Open - Await Response	TO 6 MOTORCOACH INDUSTRY, PUBLIC BUS, AND SCHOOL BUS ASSOCIATIONS AND 3 UNIONS: Develop formal policies prohibiting cellular telephone use by commercial driver's license holders with a passenger-carrying or school bus endorsement, while driving under the authority of that endorsement, except in emergencies.
H-11-039	Open - Await Response	TO THE 50 STATES AND THE DISTRICT OF COLUMBIA: (1) Ban the nonemergency use of portable electronic devices (other than those designed to support the driving task) for all drivers; (2) use the National Highway Traffic Safety Administration model of high visibility enforcement to support these bans; and (3) implement targeted communication campaigns to inform motorists of the new law and enforcement, and to warn them of the dangers associated with the nonemergency use of portable electronic devices while driving.
H-11-047	Open - Await Response	TO CTIA-THE WIRELESS ASSOCIATION AND THE CONSUMER ELECTRONICS ASSOCIATION: Encourage the development of technology features that disable the functions of portable electronic devices within reach of the driver when a vehicle is in motion; these technology features should include the ability to permit emergency use of the device while the vehicle is in motion and have the capability of identifying occupant seating position so as not to interfere with use of the device by passengers.
H-14-013	Open - Await Response	TO THE FIFTY STATES, THE DISTRICT OF COLUMBIA, AND THE COMMONWEALTH OF PUERTO RICO: Ban the nonemergency use by pilot/escort vehicle drivers of portable electronic devices (other than those designed to support the pilot/escort vehicle driving task), except to communicate hazard-related information to the escorted vehicle.

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<b>Strengthen Occupant Protection</b>		
<b>Recommendation #</b>	<b>Overall Status</b>	<b>Subject</b>
H-11-036	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Modify Federal Motor Vehicle Safety Standard 217 to require that all emergency exits on school buses be easily opened and remain open during an emergency evacuation.
H-11-038	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: To cover the interim period until Federal Motor Vehicle Safety Standard 217 is modified as specified in Safety Recommendations H-11-36 and -37, provide the states with guidance on how to minimize potential evacuation delays that could be caused by protruding latch mechanisms on emergency exit windows and by exit windows that require additional manual assistance to remain open during egress.
H-11-045	Open - Response Received	TO THE STATE OF MISSOURI: Revise your bus evacuation regulations to require that pupils traveling to an activity or on a field trip in a school bus or a school-chartered bus be instructed in safe riding practices and on the location and operation of emergency exits prior to starting the trip.
H-12-022	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Evaluate the effects of seat spacing and armrests as factors for potential occupant injury, and if safer spacing or armrest configurations are identified, develop and implement appropriate guidelines.
H-13-032	Open - Await Response	TO THE STATES OF CALIFORNIA, FLORIDA, LOUISIANA, NEW JERSEY, NEW YORK, AND TEXAS: Develop: (1) a handout for your school districts to distribute annually to students and parents about the importance of the proper use of all types of passenger seat belts on school buses, including the potential harm of not wearing a seat belt or wearing one but not adjusting it properly; and (2) training procedures for schools to follow during the twice yearly emergency drills to show students how to wear their seat belts properly.

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H-13-033	Open - Await Response	TO THE STATES OF CALIFORNIA, FLORIDA, LOUISIANA, NEW JERSEY, NEW YORK, AND TEXAS: Upon publication of the National School Transportation Specifications and Procedures document, revise the handout and training procedures developed in Safety Recommendation H-13-32 to align with the national procedures as appropriate.
H-13-035	Open - Acceptable Response	TO THE NATIONAL ASSOCIATION OF STATE DIRECTORS OF PUPIL TRANSPORTATION SERVICES, NATIONAL ASSOCIATION FOR PUPIL TRANSPORTATION, NATIONAL SCHOOL TRANSPORTATION ASSOCIATION, SCHOOL BUS MANUFACTURERS TECHNICAL COUNCIL, AND NATIONAL SAFETY COUNCIL, SCHOOL TRANSPORTATION SECTION: Develop guidelines and include them in the next update of the National School Transportation Specifications and Procedures to assist schools in training bus drivers, students, and parents on the importance and proper use of school bus seat belts, including manual lap belts, adjustable lap and shoulder belts, and flexible seating systems.
H-13-036	Open - Acceptable Alternate Response	TO THE NATIONAL ASSOCIATION OF STATE DIRECTORS OF PUPIL TRANSPORTATION SERVICES, NATIONAL ASSOCIATION FOR PUPIL TRANSPORTATION, AND NATIONAL SCHOOL TRANSPORTATION ASSOCIATION: Provide your members with educational materials on lap and shoulder belts providing the highest level of protection for school bus passengers, and advise states or school districts to consider this added safety benefit when purchasing seat belt-equipped school buses.
H-13-037	Open - Acceptable Alternate Response	TO THE SCHOOL BUS MANUFACTURERS TECHNICAL COUNCIL: Develop a recommended practice for establishing and safeguarding the structural integrity of the entire school bus seating and restraint system, including the seat pan attachment to the seat frame, in severe crashes—in particular, those involving lateral impacts with vehicles of large mass.

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H-15-010	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop requirements addressing the minimum aisle width for safe evacuation from all buses, including those with moveable seats.
H-15-020	Open - Response Received	TO THE NATIONAL LIMOUSINE ASSOCIATION: Develop and distribute guidelines to your member operators urging them, during pretrip safety briefings, to (1) direct passengers to use seat belts where required by law and strongly encourage passengers to use seat belts where not required by law, and (2) encourage passengers to use properly adjusted head restraints.
H-15-042	Open - Await Response	TO THE FIFTY STATES, DISTRICT OF COLUMBIA, AND PUERTO RICO: Enact legislation that provides for primary enforcement of a mandatory seat belt use law for all vehicle seating positions equipped with a passenger restraint system. (Safety Recommendation H-15-042 supersedes Safety Recommendation H-97-2)
H-17-001	Open - Await Response	TO MOTOR COACH INDUSTRIES INTERNATIONAL, INC.: Evaluate and, if appropriate, modify the driver and passenger floor structure design on new motorcoaches to prevent driver seat separation during crashes.
H-17-008	Open - Await Response	TO THE AMERICAN BUS ASSOCIATION AND THE UNITED MOTORCOACH ASSOCIATION: Encourage member passenger-carrying companies to (1) establish procedures to ensure that the seat belts on all buses are regularly inspected to maintain their functionality and accessibility, and (2) provide pretrip safety briefings emphasizing the benefits of seat belt use.
H-17-012	Open - Acceptable Response	TO GREYHOUND LINES, INC.: Provide pretrip safety briefings at all stops prior to departure when taking on new passengers, which describe the use of the emergency exits and the benefits of wearing seat belts.
H-17-061	Open - Acceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Work with SAE International and the National Highway Traffic Safety Administration to

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		improve truck-tractor side-mounted fuel tank crashworthiness to prevent catastrophic tank ruptures and limit post collision fuel spillage, and develop and promulgate an updated standard.
H-17-062	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Work with SAE International and the Federal Motor Carrier Safety Administration to improve truck-tractor side-mounted fuel tank crashworthiness to prevent catastrophic tank ruptures and limit post collision fuel spillage, and develop and promulgate an updated standard.
H-17-065	Open - Await Response	TO SAE INTERNATIONAL: Work with the Federal Motor Carrier Safety Administration and the National Highway Traffic Safety Administration to improve truck-tractor side-mounted fuel tank crashworthiness to prevent catastrophic tank ruptures and limit post collision fuel spillage, and develop and promulgate an updated standard.
H-18-009	Open - Await Response	TO THE STATES OF FLORIDA, LOUISIANA, NEW JERSEY, AND NEW YORK: Amend your statutes to upgrade the seat belt requirement from lap belts to lap/shoulder belts for all passenger seating positions in new large school buses in accordance with Federal Motor Vehicle Safety Standard 222.

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H-18-010	Open - Await Response	TO THE STATES OF ALABAMA, ALASKA, ARIZONA, COLORADO, CONNECTICUT, DELAWARE, GEORGIA, HAWAII, IDAHO, ILLINOIS, INDIANA, IOWA, KANSAS, MAINE, MARYLAND, MICHIGAN, MINNESOTA, MISSISSIPPI, MISSOURI, MONTANA, NEBRASKA, NEW HAMPSHIRE, NEW MEXICO, NORTH CAROLINA, NORTH DAKOTA, OHIO, OKLAHOMA, OREGON, RHODE ISLAND, SOUTH CAROLINA, SOUTH DAKOTA, TENNESSEE, UTAH, VERMONT, WASHINGTON, WEST VIRGINIA, WISCONSIN, AND WYOMING; THE COMMONWEALTHS OF KENTUCKY, MASSACHUSETTS, PENNSYLVANIA, AND VIRGINIA; THE DISTRICT OF COLUMBIA; AND THE TERRITORY OF PUERTO RICO: Enact legislation to require that all new large school buses be equipped with passenger lap/shoulder belts for all passenger seating positions in accordance with Federal Motor Vehicle Safety Standard 222.
H-18-058	Open - Await Response	TO THE NATIONAL TRAFFICS SAFETY ADMINISTRATION: Amend Federal Motor Vehicle Safety Standard 210 to increase the minimum anchorage spacing for individual seat belt assemblies, taking into account the dynamic testing of seat belt designs, seat belt fit, and vehicle configuration.
H-18-059	Open - Await Response	TO THE NATIONAL TRAFFIC SAFETY ADMINISTRATION: Amend Federal Motor Vehicle Safety Standard 208 to require lap/shoulder belts for each passenger seating position on all new buses with a gross vehicle weight rating of more than 10,000 pounds but not greater than 26,000 pounds.
H-18-062	Open - Await Response	TO MEDIUM-SIZE BUS MANUFACTURERS ARBOC SPECIALTY VEHICLES, LLC; COACH & EQUIPMENT MANUFACTURING CORPORATION; REV GROUP, INC.; DIAMOND COACH CORPORATION; FOREST RIVER, INC.; GIRARDIN BLUE BIRD; SVO GROUP, INC.; AND THOMAS BUILT BUSES: Install lap/shoulder belts in all seating positions as standard, rather than optional, equipment in all newly manufactured medium-size buses.

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H-18-063	Open - Response Received	TO THE SEAT MANUFACTURERS FREEDMAN SEATING COMPANY AND HSM TRANSPORTATION SOLUTIONS: Supply seating systems equipped with lap/shoulder belts as standard, rather than optional, equipment for medium-size buses.
H-96-014	Open - Acceptable Response	TO THE 50 STATES, THE 5 US TERRITORIES, AND THE DISTRICT OF COLUMBIA: Review existing laws and enact legislation, if needed, that would: ensure that children up to 8 years old are required by the state's mandatory child restraint use law to use child restraint systems and booster seats.
H-99-009	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Revise the Federal Motor Vehicle Safety Standard 217, "Bus Window Retention and Release," to require that other than floor-level emergency exits can be easily opened and remain open during an emergency evacuation when a motorcoach is upright or at unusual attitudes.
H-99-049	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Expand your research on current advanced glazing to include its applicability to motorcoach occupant ejection prevention, and revise window glazing requirements for newly manufactured motorcoaches based on the results of this research.
H-99-050	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: In 2 years, develop performance standards for motorcoach roof strength that provide maximum survival space for all seating positions and that take into account current typical motorcoach window dimensions.
H-99-051	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Once performance standards have been developed for motorcoach roof strength, require newly manufactured motorcoaches to meet those standards.



## Appendix: 2019-2020 Most Wanted List Recommendations for Highway Safety

<b>Increase Implementation of Collision Avoidance Systems in All New Highway Vehicles</b>		
<b>Recommendation #</b>	<b>Status</b>	<b>Subject</b>
H-15-004	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop and apply testing protocols to assess the performance of forward collision avoidance systems in passenger vehicles at various velocities, including high speed and high velocity-differential.
H-15-005	Open - Unacceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Complete, as soon as possible, the development and application of performance standards and protocols for the assessment of forward collision avoidance systems in commercial vehicles. (Safety Recommendation H-15-005 supersedes Safety Recommendation H-01-006)
H-15-006	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Expand the New Car Assessment Program 5-star rating system to include a scale that rates the performance of forward collision avoidance systems.
H-15-007	Open - Acceptable Response	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Once the rating scale, described in Safety Recommendation H-15-6, is established, include the ratings of forward collision avoidance systems on the vehicle Monroney labels.
H-15-008	Open - Acceptable Response	TO PASSENGER VEHICLE, TRUCK-TRACTOR, MOTORCOACH, AND SINGLE-UNIT TRUCK MANUFACTURERS: Install forward collision avoidance systems that include, at a minimum, a forward collision warning component, as standard equipment on all new vehicles.
H-15-009	Open - Acceptable Response	TO PASSENGER VEHICLE, TRUCK-TRACTOR, MOTORCOACH, AND SINGLE-UNIT TRUCK MANUFACTURERS: Once the National Highway Traffic Safety Administration publishes performance standards for autonomous emergency braking, install systems meeting those standards on all new vehicles.

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H-18-008	Open - Response Received	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Require all new school buses to be equipped with collision avoidance systems and automatic emergency braking technologies.
H-18-019	Open - Response Received	TO BLUE BIRD CORPORATION, COLLINS INDUSTRIES, INC., IC BUS, STARCRAFT BUS, THOMAS BUILT BUSES, INC., TRANS TECH, AND VAN-CON, INC.: Install a collision avoidance system with automatic emergency braking as standard equipment on all newly manufactured school buses.
H-18-029	Open - Response Received	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Incorporate motorcycles in the development of performance standards for passenger vehicle crash warning and prevention systems.
H-18-043	Open - Response Received	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Incorporate pedestrian safety systems, including pedestrian collision avoidance systems and other more-passive safety systems, into the New Car Assessment Program.
H-18-044	Open - Response Received	TO THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: Develop a detailed pedestrian crash data set that represents the current, complete range of crash types and that can be used for local and state analysis and to model and simulate pedestrian collision avoidance systems.

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<b>Reduce Fatigue-Related Accidents</b>		
<b>Recommendation #</b>	<b>Status</b>	<b>Subject</b>
H-09-009	Open - Await Response	TO THE AMERICAN BUS ASSOCIATION AND THE UNITED MOTORCOACH ASSOCIATION: Inform your members through Web sites, newsletters, and conferences of the circumstances of the Mexican Hat, Utah, accident. The prepared information should encourage charter operators to develop written contingency plans for each charter to ensure that trip planning is in place in the event of driver fatigue, incapacitation, or illness or in the event of trip delays necessitating replacement drivers to avoid hours-of-service violations and inform drivers of their trip's contingency plans. The prepared information should also provide information about the risks of operating in rural areas without wireless telephone coverage and advise members to carry mobile cellular amplifiers or satellite-based devices to communicate emergency events.
H-09-010	Open - Acceptable Response	TO ARROW STAGE LINES: Develop written contingency plans for each charter to ensure that trip planning is in place in the event of driver fatigue, incapacitation, or illness or in the event of trip delays necessitating replacement drivers to avoid hours-of-service violations and inform drivers of their trip's contingency plans.
H-12-029	Open - Unacceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Establish an ongoing program to monitor, evaluate, report on, and continuously improve fatigue management programs implemented by motor carriers to identify, mitigate, and continuously reduce fatigue-related risks for drivers. (This safety recommendation supersedes Safety Recommendation H-08-14.)
H-12-030	Open - Unacceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Incorporate scientifically based fatigue mitigation strategies into the hours-of-service regulations for passenger-carrying drivers who operate during the nighttime window of circadian low.

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H-15-022	Open - Acceptable Response	TO WAL-MART STORES, INC. (ORIGINALLY ISSUED TO WALMART TRANSPORTATION LLC): Develop and implement a fatigue management program based on the North American Fatigue Management Program guidelines.
H-17-056	Open - Response Received	TO THE UNITED STATES DEPARTMENT OF LABOR: Develop and disseminate guidelines and training material for agricultural employers and farm labor contractors on the dangers of driving while tired and on strategies for managing driver fatigue.

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<b>Require Medical Fitness—Screen for and Treat Obstructive Sleep Apnea</b>		
<b>Recommendation #</b>	<b>Status</b>	<b>Subject</b>
H-09-015	Open - Unacceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Implement a program to identify commercial drivers at high risk for obstructive sleep apnea and require that those drivers provide evidence through the medical certification process of having been appropriately evaluated and, if treatment is needed, effectively treated for that disorder before being granted unrestricted medical certification.
H-09-016	Open - Acceptable Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Develop and disseminate guidance for commercial drivers, employers, and physicians regarding the identification and treatment of individuals at high risk of obstructive sleep apnea (OSA), emphasizing that drivers who have OSA that is effectively treated are routinely approved for continued medical certification.
H-17-049	Open - Acceptable Alternate Response	TO THE FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION: Make the 2016 Medical Review Board/Motor Carrier Safety Advisory Committee recommendations on screening for obstructive sleep apnea (OSA) easily accessible to certified medical examiners, and instruct the examiners to use the recommendations as guidance when evaluating commercial drivers for OSA risk.