



Report to
Congress

February
2026

**Advanced Impaired Driving
Prevention Technology**

Introduction

This report contains information required by Section 24220, “ADVANCED IMPAIRED DRIVING TECHNOLOGY,” of the Infrastructure Investment and Jobs Act (IIJA) (P.L. No. 117-58) as well as a short summary of the efforts of the National Highway Traffic Safety Administration (NHTSA) to address the scourge of impaired driving crashes on American roadways.

Alcohol-impaired driving crashes remain a leading cause of roadway fatalities. The economic and societal impacts from drivers choosing to drive while impaired are enormous and devastating across the United States. According to NHTSA’s Fatality Analysis Reporting System (FARS), in 2023 there were 12,429 traffic fatalities in which at least one driver had a blood alcohol concentration (BAC) at or above 0.08 grams/deciliter (g/dL),¹ representing approximately 30 percent of all traffic fatalities in the United States. NHTSA estimates that alcohol is a causal factor² in 94 percent of crashes involving at least one driver with a BAC at or above 0.08 g/dL.³ In turn, fatalities in alcohol impairment-related crashes resulted in societal safety costs of approximately \$165 billion in 2023.⁴

NHTSA has a longstanding commitment to addressing the problem of impaired driving using the most effective tools available. NHTSA’s primary tools have been behavioral-based efforts targeted at reducing impaired driving through education, media campaigns, State level targeted law enforcement programs, and support for and partnerships with non-governmental organizations whose efforts focus on reducing impaired driving. By directly engaging with groups like Mothers Against Drunk Driving, the International Association of Chiefs of Police, the American Bar Association, the National District Attorneys Association, the SAFE Coalition, and others, NHTSA can better understand the challenges and opportunities to significantly reduce fatalities and injuries from impaired driving.

NHTSA continues these efforts through information campaigns and behavioral-based research that support effective law enforcement, and by also providing strong support for State ignition interlock device laws. Ignition interlock devices are non-passive devices that are proven effective at preventing alcohol-impaired driving among drivers who have been previously convicted of driving while under the influence of alcohol. Most recently, NHTSA published reports⁵ that continue to advance behavioral-based approaches:

¹ <https://crashstats.nhtsa.dot.gov/Api/Public/Publication/813713>.

² NHTSA’s fatality numbers reported in FARS, with use of the term “alcohol-impaired,” indicates that at least one driver with a BAC greater than or equal to .08 g/dL was involved in the crash. Crashes may involve causal factors other than alcohol (*e.g.*, one or multiple drivers or vehicles associated with speeding, reckless behavior, or mechanical failure).

³ See Blincoe, L., Miller, T., Wang, J.-S., Swedler, D., Coughlin, T., Lawrence, B., Guo, F., Klauer, S., & Dingus, T., The Economic and Societal Impact of Motor Vehicle Crashes, Report No. DOT HS 813 403., National Highway Traffic Safety Administration (2019, revised).

⁴ This calculation uses an estimated comprehensive economic cost of approximately \$14.1 million per fatality (in 2024 dollars).

⁵ <https://www.nhtsa.gov/behavioral-research>.

- *Resources to Prevent Impaired Driving in Rural Areas, 2025*, which provides an overview of effective programs in rural areas.
- *Drugs and Human Performance Fact Sheets: 2024*, a reference document based on the latest scientific research that provides practical guidance for evaluating and understanding drug-impaired driving cases.
- *Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices, 11th edition, 2023*, which provides numerous safety countermeasures for States and communities, including those targeting impaired driving.
- *Countermeasures That Work: An Introductory Resource for Rural Communities*, which focuses on the unique needs of rural America.
- *Best Practices of State Impaired Driving Task Forces* to help States identify stakeholders and activities to target impaired driving.
- *Report on Marijuana Research: Report to Congress* that highlights challenges and barriers to conducting marijuana research and developing a clearinghouse to facilitate research on marijuana-impaired driving.

In 2008, NHTSA established a public/private partnership with the Automotive Coalition for Traffic Safety, a non-profit organization, to develop technological solutions to address alcohol-impaired driving. The “Driver Alcohol Detection System for Safety” (DADSS) program, a research-focused activity, aims to develop a reference design that can be licensed by other entities for two non-intrusive, in-vehicle technologies (breath and touch sensors) designed to detect passively when a driver’s BAC exceeds the legal limit.

As directed by Section 24220 of IIJA, subsection (c), “not later than 3 years after the date of enactment of this Act [November 15, 2021], the Secretary shall issue a final rule prescribing a Federal motor vehicle safety standard [FMVSS] under Section 30111 of Title 49, United States Code, that requires passenger motor vehicles manufactured after the effective date of that standard to be equipped with advanced drunk and impaired driving prevention technology.” Subsection (b) of Section 24220 defines advanced drunk and impaired driving prevention technology as technology that:

(A) can (i) passively monitor the performance of a driver of a motor vehicle to accurately identify whether that driver may be impaired; and (ii) prevent or limit motor vehicle operation if an impairment is detected; (B) can (i) passively and accurately detect whether the blood alcohol concentration of a driver of a motor vehicle is equal to or greater than the blood alcohol concentration described in section 163(a) of title 23, United States Code; and (ii) prevent or limit motor vehicle operation if a blood alcohol concentration above the legal limit is detected; or (C) is a combination of systems described in subparagraphs (A) and (B).

Subsection (e), “Timing,” provides for an extension of up to three years if the Secretary determines a FMVSS cannot meet the requirements of 49 U.S.C. § 30111 (a) and (b), enacted as part of the National Traffic and Motor Vehicle Safety Act (Safety Act). Subsection (e) of Section 24220 also states that the Secretary:

(2) shall, not later than the date described in subsection (c) and not less frequently than annually thereafter until the date on which the rule under that subsection is issued, submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives a report describing, as of the date of submission of the report: (A) the reasons for not prescribing a Federal motor vehicle safety standard under Section 30111 of Title 49, United States Code, that requires advanced drunk and impaired driving prevention technology in vehicles; (B) the deployment of advanced drunk and impaired driving prevention technology in vehicles; (C) any information relating to the ability of vehicle manufacturers to include advanced drunk and impaired driving prevention technology in new passenger motor vehicles; and (D) an anticipated timeline for prescribing the Federal motor vehicle safety standard described in subsection (c).

On January 5, 2024, NHTSA published an Advance Notice of Proposed Rulemaking⁶ to solicit information from the public on advanced impaired driving technology. NHTSA continues to evaluate and analyze the information contained in the more than 3,000 unique comments received in response and to conduct the research and other activities described in this report. NHTSA last submitted the required annual report to Congress on December 13, 2024. NHTSA also submitted a report to Congress on July 20, 2023, as directed in the Joint Explanatory Statement accompanying the Consolidated Appropriations Act, 2023. The findings stated in the December 2024 report to Congress have not changed materially.

I. Reasons for Not Prescribing an Advanced Drunk and Impaired Driving FMVSS

NHTSA is committed to issuing a FMVSS as directed in Section 24220 of IIJA that requires vehicles to be equipped with advanced drunk and impaired driving prevention technology that passively detects impairment and limits the operation of the motor vehicle, while also meeting the requirements of the Safety Act. To further its effort in issuing a FMVSS, NHTSA is evaluating how such a regulation can be practicable, written in objective terms, and meet the need for motor vehicle safety.

In 2024, NHTSA published two reports that assessed the state of impairment detection technology.^{7,8} These reports identified a broad range of technologies intended to detect or measure alcohol or other measures of impairment based on physiological indicators, tissue spectroscopy (*e.g.*, touch sensors), cameras, vehicle data (*e.g.*, swerving in lane), or some combination thereof. The two primary approaches to detect driver impairment due to alcohol include BAC or breath alcohol concentration (BrAC) measurement — for which NHTSA has

⁶Fed. Reg. 830, [Advanced Impaired Driving Prevention Technology](#).

⁷Prendez, D. M., Brown, J. L., Venkatraman, V., Textor, C., Parong, J., & Robinson, E., Assessment of Driver Monitoring Systems for Alcohol Impairment Detection and Level 2 Automation, Report no. DOT HS 813 577, National Highway Traffic Safety Administration (2024).

⁸Pollard, J. K., Nadler, E. D., & Melnik, G. A., Review of Technology to Prevent Alcohol- and Drug-Impaired Crashes: Update, Report No. DOT HS 813 542, National Highway Traffic Safety Administration (2024).

tracked research and development efforts as part of the DADSS project — and driver monitoring, which infers impairment based on behavioral and physiological indicators. Of the technologies reviewed, most were in an early state of research and development or were not designed for in-vehicle use. Though the two 2024 reports documented some promising technologies, neither report found commercially available technology that detects driver alcohol impairment accurately and passively.⁹

DADSS sensors continue to be refined toward potential commercial deployment. Several State highway safety offices have deployed State vehicles with directed breath alcohol presence sensors designed by DADSS as test vehicles. This testing enables the collection of data to further improve the system to function passively. To date, there are no in-vehicle technologies in production that can measure BAC or BrAC at or above 0.08 g/dL passively. Full sensor development continues as a result, but the sensors are not ready to be integrated into vehicles sold to the general public. NHTSA remains actively engaged with manufacturers developing this technology. However, current systems have yet to demonstrate the precision, speed, and reliability needed to meet the IIJA mandate or the Safety Act.

Driver monitoring approaches aim to infer driver state based on behavior, typically through camera-based monitoring and vehicle inputs (*e.g.*, vehicle lane position variability). While camera-based driver monitoring systems (DMS) are becoming more prevalent in advanced driver assistance systems, NHTSA has found most of these systems are intended to detect driver drowsiness, inattention, and sudden sickness. DMS-based approaches aim to detect indicators of driver alcohol impairment (such as eye glances, facial features, and vehicle kinematic metrics) and potentially provide some indication of the level of impairment. NHTSA will research characteristics of DMS-based impairment approaches as they are made commercially available and, more recently, has identified one announcement of an effort to introduce DMS for use in production vehicles.¹⁰

NHTSA is committed to establishing well-defined requirements that also minimize false positive detections and driving restrictions for sober drivers. Currently, detection technology around the legal limit continues to have an error rate that would be unacceptably high. Accuracy is especially critical for this technology, given the estimated 227 billion driving trips that take place annually in the United States.¹¹ Estimates of the annual number of trips involving alcohol impairment account for a small fraction of all trips, but remain high.¹² While NHTSA has not made a final determination about the necessary level of accuracy, even a 99.9 percent detection accuracy level could result in millions to tens of millions of instances each year where the technology would incorrectly prevent or limit drivers from operating their vehicles, or fail to prevent or limit impaired drivers from doing so. At this time, NHTSA is not aware of any

⁹ NHTSA understands the term “passive” to mean that the system functions without direct action from the vehicle occupants.

¹⁰ <https://seeingmachines.com/seeing-machines-unveils-technology-to-detect-alcohol-impaired-driving/>.

¹¹ AAA, Foundation for Traffic Safety, “American Driving Survey: 2022,” [202309 2022-AAAFTS-American-Driving-Survey-Brief_v3.pdf](https://www.aaaftsa.org/202309-2022-AAAFTS-American-Driving-Survey-Brief_v3.pdf).

¹² CDC, Impaired Driving Facts, estimates 127 million episodes of alcohol-impaired driving in 2020, <https://www.cdc.gov/impaired-driving/facts/index.html>.

technology that claims to achieve anywhere close to this level of accuracy in minimizing false positives (misclassifying a sober driver as impaired) and false negatives (failing to detect an impaired driver), and no such capabilities have been verified independently to date.

Nonetheless, NHTSA believes such technology, when mature, will have a dramatic impact on road safety and combatting the scourge of impaired driving. NHTSA continues to monitor the progress of technology and works closely with industry as technology continues to be developed. Industry experts state most impairment-detection technologies are in the early development phase, while few are in the research phase. These experts have stated that no such technologies have demonstrated an adequate level of confidence and reliability to support a regulatory requirement, especially when considering vehicle countermeasures that may limit vehicle operation.¹³

Recently, the Insurance Institute for Highway Safety announced it will include vehicle features that address risky behaviors such as impaired driving in its TOP SAFETY PICK+ award criteria by 2030.¹⁴ NHTSA is also considering an approach to include information on vehicles that adopt impaired driving prevention technology in the New Car Assessment Program.

Test Procedure Development

One particular challenge in addressing impaired driving detection systems is developing a performance standard meeting the statutory requirement and a test procedure to verify compliance. The Safety Act requires that any FMVSS test procedure be stated in objective terms and practicable. That is, it must be sufficiently specific such that a manufacturer can know, with certainty at the time of certification, whether a motor vehicle or item of motor vehicle equipment will pass or fail when tested by NHTSA using those test procedures.

NHTSA continues to develop objective test methods that demonstrate a vehicle's ability reliably to measure a driver's alcohol concentration level passively and accurately. Proxy devices, which vary depending on the sensing technology, enable testing by providing repeatable input that can be varied in a predictable way. For example, NHTSA has developed a prototype proxy device that can simulate an exhalation from an alcohol-impaired person. NHTSA is also exploring the development of a proxy test device for touch-based alcohol detection techniques that use tissue spectroscopy. Once these proxy devices are validated, test procedures will be developed that take into consideration various vehicle-level influences that may impact the equipment's ability to measure alcohol concentration passively and accurately. Current NHTSA work looks to perform initial narrow measurements of those vehicle-level influences. However, there are currently no touch or breath-based alcohol detection systems integrated into production vehicles with which to perform this research.

DMS-based approaches that aim to infer alcohol impairment by observing the physiological effects on a driver would require the development of additional test tools and protocols. NHTSA

¹³ <https://www.regulations.gov/comment/NHTSA-2022-0079-16720>.

¹⁴ <https://www.iihs.org/news/detail/iihs-award-criteria-will-soon-include-features-to-address-risky-driving>.

continues to evaluate how test procedures could be developed to meet the requirements of the Safety Act.

Countermeasure Evaluation

NHTSA continues to gather information and conduct research on countermeasures to maximize safety once impairment has been detected. These countermeasures depend on both the type of impairment detected and when in the drive cycle impairment is detected. For example, if alcohol impairment is detected prior to vehicle movement (i.e., the beginning of the drive cycle), preventing or limiting vehicle motion likely is an effective countermeasure. However, if alcohol impairment is detected after the vehicle is set in motion, countermeasures become more challenging. For example, stopping a vehicle in-lane may lead to significant unintended consequences. NHTSA is carefully examining countermeasures, their potential effectiveness, and potential unintended consequences. One ongoing project is investigating a driver alcohol impairment telltale and developing and evaluating novel telltale alternatives.

II. Anticipated Timeline for FMVSS

NHTSA remains dedicated to combatting impaired driving and the high number of deaths and injuries caused by impaired drivers through a combination of law enforcement activities, campaigns, and technological research that may enable rulemaking. NHTSA continues its work on critical and complex topics including technology readiness, test procedure development, and consumer acceptance, as well as cybersecurity and privacy concerns. These issues must be addressed to enable NHTSA to propose a rule that could satisfy Section 24220 of IJA and the requirements of the Safety Act.

NHTSA will continue to provide annual reports to Congress and publish status updates in the Unified Agenda of Regulatory and Deregulatory Actions.