

**AIR QUALITY AND CLIMATE DIVISION
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

To: Senate Committee on Transportation

From: Rachel Stevens, Associate General Counsel, DEC
Deirdra Ritzer, Mobile Sources Section Chief, Air Quality and Climate Division

CC: Heidi Hales, Director, Air Quality and Climate Division

Date: Feb. 12, 2026

Re: Response to Committee Questions on S.211 Testimony February 4, 2026 at 11am

Below please find follow up information in response to questions from Senate Transportation on Vermont's Inspection and Maintenance Program and emissions inspections.

Please provide additional information to support that emissions inspections lead to vehicle maintenance and repairs.

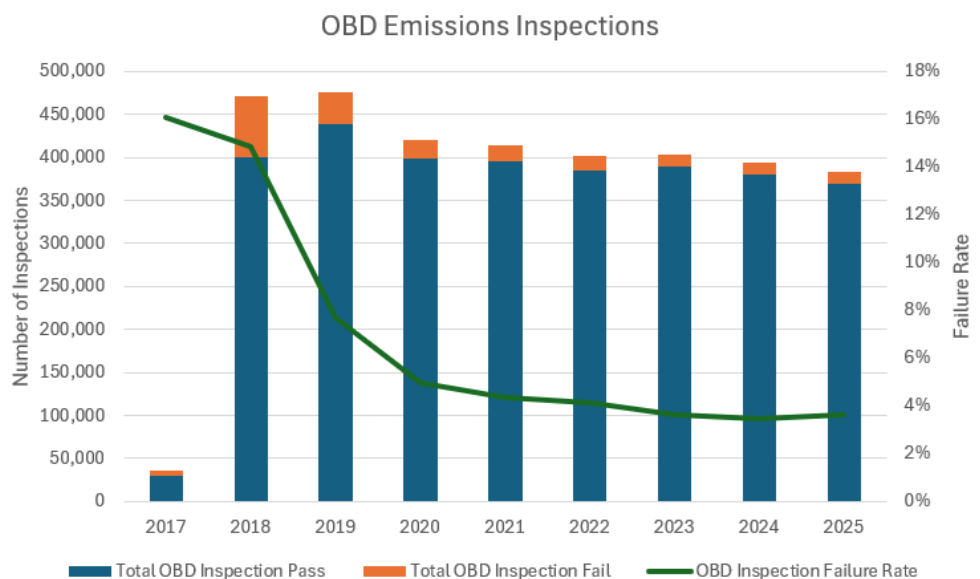
Vermont inspection data suggests that emissions inspections drive vehicle maintenance and play a meaningful role in improving compliance, getting vehicles repaired, and achieving air quality benefits.

Prior to 2017, vehicle inspections in Vermont were documented using paper records, which made the program difficult to enforce. In 2017, the state transitioned to an electronic data collection and management system, which significantly improved the accuracy and enforceability of emissions inspection results. The new system largely removed the human element from emissions testing by requiring technicians to electronically connect inspection equipment directly to the vehicle, with pass-fail determinations generated automatically by the system.

As shown in Table 1, to the right, when the electronic program was implemented, the emissions inspection failure rate was 16%. In the years that followed, the failure rate declined substantially (4% today), reflecting increased compliance as vehicle owners recognized the accuracy of the electronic testing process and addressed emissions related repairs prior to inspection.

The purpose of the malfunction indicator lamp (MIL), commonly known as the check engine light, is to notify drivers that an emissions-related repair

Table 1: Vermont OBD emissions inspection data from 2017 through 2025



Source: Vermont Automated Vehicle Inspection Program (AVIP), January 2026.

is necessary. According to the U.S. Environmental Protection Agency (EPA), “...many motorists, when seeing the OBD ‘Check Engine’ light is on, will elect to repair their vehicle prior to their required inspection.” EPA also noted that in 2018, 3.5 million vehicles initially failed their emissions inspection and because of state inspection programs, more than 75% of those vehicles that failed were repaired, reducing emissions.¹

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During a 2023 national conference on vehicle inspection and maintenance programs, experts at the Oregon Department of Environmental Quality (DEQ) presented an analysis of their 2022 OBD emissions inspection and maintenance (I/M) data. According to the DEQ, “every year, about 25% of all vehicles tested have had a repair event within 90 days of their test date.”³ Additionally, Oregon’s report submitted to EPA in 2025 specifically states that their inspection data “suggests the testing program is an important incentive to Oregon vehicle owners to maintain vehicles properly and seek repairs within their registration window.”⁴ This shows that vehicles owners are repairing their vehicles as their inspection draws closer and demonstrates that emissions inspections are driving motorist repair behavior.

Additionally, the Oregon DEQ conducted emissions testing on vehicles located outside inspection areas, where there are no inspection requirements, and discovered a failure rate of 16.5%. This rate is nearly 7 times higher than the 2.5% failure rate observed within inspection areas. Oregon DEQ concluded that “I/M clearly makes a difference in the maintenance habits of motorists.”⁵

At a national conference on vehicle inspection and maintenance programs in 2025, OPUS (business in the vehicle inspection and intelligent vehicle support markets) presented on Remote Sensing Device (RSD) programs.⁶ RSD provides a snapshot of emissions from vehicles as they are driven on roadways. RSD units collect various data and analyze the emissions as a vehicle drives past. Specifically, analysis of RSD data collected in Colorado’s inspection program demonstrates pre-inspection repairs being made as the vehicle inspection due date draws near. RSD measurements capturing vehicles before and after their inspections show that emissions repairs made near the time of inspection resulted in:

- A decrease in carbon monoxide emissions of 4%
- A decrease in hydrocarbon emissions of 27%
- A decrease in nitric oxide emissions of 30%

¹ U.S. Environmental Protection Agency. *Overview of Vehicle Inspection and Maintenance (I/M) Programs*. October 2021. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013CC0.pdf>.

² U.S. Environmental Protection Agency. *Overview of Vehicle Inspection and Maintenance (I/M) Programs*. October 2021. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013CC0.pdf>.

³ Oregon Department of Environmental Quality, June 2023, *Oregon Vehicle Test Data – 2022*. PowerPoint Slides. Document on file with DEC.

⁴ Oregon Department of Environmental Quality Vehicle Inspection Program, July 2025, *U.S. Environmental Protection Agency Report 2024 Test Year*. Page 39. <https://www.oregon.gov/deq/Vehicle-Inspection/Documents/vipepareport2024.pdf#page=39>.

⁵ Oregon Department of Environmental Quality Vehicle Inspection Program, June 2023, *Oregon Vehicle Test Data – 2022*. PowerPoint Slides. Document on file with DEC.

⁶ OPUS, May 20, 2025. *I/M Program Effectiveness*. PowerPoint Slides. Document on file with DEC.

A Carnegie Mellon University study from 2015 on vehicle inspections concluded that inspections should continue and stresses the importance of data sources, noting that “accurate inspection data is limited and often incorrectly analyzed.”⁷ The data and information cited above are from experts in the field of motor vehicle emissions inspections, scientists and engineers. ANR cautions against the use of data and recommendations from sources that are not well versed in motor vehicle emissions and inspection programs.

ANR would also like to make the Committee aware of a study about vehicle inspection published in the *Journal of Transportation Engineering* in 2023.⁸ The authors conclude that “...estimates suggest that states with I/M programs had 5.5% fewer roadway fatalities per 100,000 registered passenger vehicles...” Additionally, this study observed that previous research assessing the effectiveness of safety inspection programs often depended on outdated data or focused on restricted geographic regions.

What timeline is involved for S.211 implementation (modeling, SIP revision, EPA approval)?

ANR estimates that technical staff at ANR can run the required emissions modeling within a two- to three-week timeline. One uncertainty is if additional direction from EPA will be needed for the modeling and EPA’s capacity to respond to any inquiries. Depending on the modeling results, the Vermont Inspection and Maintenance State Implementation Plan (SIP) would then need to be amended and submitted to EPA for approval. EPA action on a SIP submittal usually takes about 18 months, though EPA has indicated it has other concerns with Vermont’s inspection program that must be addressed as well. This could result in a longer timeline for EPA approval.

Explain “check engine light” and On-Board Diagnostic (OBD) check.

The purpose of the malfunction indicator lamp (MIL), commonly known as the check engine light, is to notify drivers that an emissions-related repair is necessary. Vermont’s regulations incorporate Title 13 of California Code of Regulations (CCR) §1968.2 which states that the OBD system “shall monitor emission systems in-use for the actual life of the vehicle and shall be capable of detecting malfunctions of the monitored emission systems, illuminating a malfunction indicator light (MIL) to notify the vehicle operator of detected malfunctions...” Specifically, 13 CCR §1968.2 (d)(2.1.6) states “The MIL may not be used for any purpose other than specified in this regulation.”

Broadly speaking, these OBD regulations that apply to vehicle manufacturers require that OBD systems monitor for any malfunctions that can increase emissions and/or prevent the OBD system from monitoring for malfunctions. A vehicle’s OBD system runs a variety of tests on emissions components and systems while the vehicle is being driven. If the OBD system is prevented from monitoring for malfunctions due to a broken component, then the tests will not run, which means the vehicle is not able to identify an emission-related problem if it were to occur. Auto manufacturers are required by law to have OBD systems on their vehicles that monitor for any component or system malfunction that can cause emissions to increase more than 1.5 times the

⁷ Dana Peck, H. Scott Matthews, Paul Fischbeck, Chris T. Hendrickson. “Failure rates and data driven policies for vehicle safety inspections in Pennsylvania,” *Transportation Research Part A*, Volume 78, pages 252-265. (2015).

<https://www.sciencedirect.com/science/article/abs/pii/S096585641500141X>

⁸ Prithvi S. Acharya, Laila AitBihiOuali, H. Scott Matthews, and Daniel J. Graham. “The Impact of Periodic Passenger Vehicle Safety Inspection Programs on Roadway Fatalities: Evidence from US States Using Panel Data,” *Journal of Transportation Engineering, Part A: Systems*, Volume 149, issue 7 (2023). <https://ascelibrary.org/doi/10.1061/JTEPBS.TEENG-7320>

emissions standard to which the vehicle was certified. If either type of emissions issue is identified by the OBD system, the “check engine light” will turn on.