ATTORNEYS GENERAL OF THE STATES OF ILLINOIS, NEW YORK, NEW JERSEY, CALIFORNIA, WASHINGTON, MINNESOTA, DISTRICT OF COLUMBIA, OREGON, MASSACHUSETTS, AND VERMONT

Via www.regulations.gov, fax, and mail

March 4, 2026

William A. Quade
Acting Associate Administrator
Hazardous Materials Safety
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue SE
Washington, DC 20590

Re: Comments on Advance Notice of Proposed Rulemaking, Hazardous Materials: Modernizing Regulations to Facilitate Transportation of Hazardous Materials Using Highly Automated Transportation Systems, 90 Fed. Reg. 55,836 (Dec. 4, 2025), Docket No. PHMSA-2024-0064 (HM-266), RIN 2137—AF68

Dear Acting Associate Administrator Quade:

The Offices of the Attorneys General of Illinois, New York, New Jersey, California, Washington, Minnesota, the District of Columbia, Oregon, Massachusetts, and Vermont respectfully submit the following comment on the Pipeline and Hazardous Materials Safety Administration (PHMSA)'s Advance Notice of Proposed Rulemaking that requests input on potential revisions to the Hazardous Materials Regulations (HMR), 49 C.F.R. Parts 171-180, to facilitate the transportation of hazardous materials (hazmat) by highly automated transportation systems.[1]

I. INTRODUCTION

Highly automated transportation systems are still in early development and deployment stages. These developments have included the deployment of small-scale autonomous delivery services, such as delivery robots and drones, and autonomous passenger vehicles, all thus far limited to non-hazmat transportation, with very few exceptions.[2] Large-scale autonomous transportation services, such as highway trucking and rail transportation, are still in their infancy but expanding.[3] The development and testing of autonomous transportation systems has not included hazmat-specific designs or capabilities.

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[1] Advance Notice of Proposed Rulemaking, *Hazardous Materials: Modernizing Regulations to Facilitate Transportation of Hazardous Materials Using Highly Automated Transportation Systems*, 90 Fed. Reg. 55,836 (Dec. 4, 2025), Docket No. PHMSA-2024-0064 (HM-266).

[2] *See* Amazon Prime Air Comments on the FAA's Notice of Proposed Rulemaking, *Normalizing Unmanned Aircraft Systems Beyond Visual Ling of Sight Operations*, 90 Fed. Reg. 38,212 (Aug. 7, 2025) (Docket No. FAA-2025-1908) at 7 ("[w]e are also authorized to safely carry items classified as hazardous materials, including items containing lithium batteries").

[3] *See* Landline.Media, *Texas going big with autonomous infrastructure?* (published February 11, 2026), available at https://landline.media/texas-going-big-with-autonomous-infrastructure/ (last accessed March 3,

Despite this lack of development for autonomous transportation of hazmat, PHMSA has already issued an Advance Notice of Proposed Rulemaking that is expansive in scope and seeks comment on nearly every aspect of potential autonomous transportation of hazmat by highway, rail, air, and sea. However, given the early stages of all autonomous transportation, which is still largely limited to passenger vehicle transportation and small package delivery, the States urge that PHMSA first ensure that the technology and infrastructure for general autonomous transportation is developed, tested, and safely implemented before proposing a regulatory program for autonomous transportation of hazmat.

It is premature to develop regulations before a baseline level of reliability and safety has been achieved for everyday autonomous transportation.[4] Autonomous transportation of hazmat will involve unique risks and logistical complications far beyond those for passenger transportation or package delivery. The safety of passenger transportation and the construction of nationwide electric vehicle infrastructure must be prioritized and supported before the federal government commits limited resources to automated hazmat transportation. Only once reliable safety levels for autonomous passenger transportation and package delivery have been reached should PHMSA then undertake a careful, deliberative, and collaborative process that builds on existing experience to develop regulations for highly automated transportation of hazmat.

If, despite these concerns, PHMSA chooses to move forward with proposed regulations at this time, it is imperative that the agency seek and respond to States' perspectives, especially those of state and local first responders and emergency response personnel, who are on the front lines of responding to hazmat accidents. Other perspectives, such as from state agencies responsible for protecting the environment, also deserve consideration. The transportation of hazmat by highly automated transportation systems will significantly impact the States' responsibilities to oversee the health, welfare, and safety of their citizens, and the environment. Federal and State interests intertwine in nearly every aspect of hazmat transportation, requiring close coordination, communication, and cooperation among all parties. PHMSA should establish regular engagement with the States, first responders, and emergency management personnel at the outset and throughout the process of revising the HMR to ensure PHMSA considers and addresses their concerns in any related regulatory or sub-regulatory process.

II. BACKGROUND

The federal government is the regulatory authority for many aspects of highway, rail, air, and vessel transportation. The Federal Motor Carrier Safety Administration (FMCSA) oversees the transportation of hazmat by highway, the Federal Aviation Administration (FAA) oversees hazmat transportation by air, the Federal Railroad Administration (FRA) oversees transportation by rail, and the Department of Homeland Security (DHS) oversees hazmat transportation by vessel.[5] Yet the States play critical roles in ensuring hazmat transportation safety. For example, for highway transportation, States enforce hazmat

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2026); *see also Torc Robotics Expands Autonomous Truck Testing to Michigan Public Roads* (published February 24, 2026), available at https://torc.ai/michigan-public-roads-autonomous-truck-testing/ (last accessed March 3, 2026).

[4] Congress is only in the initial stages of creating a federal framework for autonomous vehicles. *See* Landline.Media, *Senate Committee stresses need for autonomous framework* (published February 5, 2026), available at https://landline.media/senate-committee-stresses-need-for-autonomous-framework/. (last accessed March 3, 2026).

[5] *See* 90 Fed. Reg. at 55,838.

requirements, conduct package inspections, and may have related special permit requirements.[6] States oversee hazmat rail shipments through the State, inspect hazmat rail shipments and railroad tracks, and fund projects for the safety of public highway rail crossings.[7] State and local law enforcement, firefighters, and other state agencies are the first responders and emergency management personnel.[8]

In addition to these authorities and responsibilities, States must communicate critical information to their citizens to protect safety, health, and the environment.[9] To do so, "[l]ocal health, fire, police, safety and other governmental officials require detailed information about the identity, characteristics, and quantities of hazardous substances used and stored in communities within their jurisdictions."[10] This information is required "in order to adequately plan for, and respond to, emergencies, and enforce compliance with applicable laws and regulations concerning these substances."[11] PHMSA must ensure that States are involved in every aspect of the potential use of highly automated transportation for hazmat to protect the States' interests in receiving and communicating this critical information for the protection of their citizens.

Some states may have relatively substantial regulatory experience with automated transportation,[12] while others have less. Regardless of experience, all States and local jurisdictions are responsible for responding to hazmat accidents and these accidents frequently have catastrophic effects. For example, on February 3, 2023, a freight train with 20 rail cars carrying hazmat derailed in East Palestine, Ohio. The rail cars contained vinyl chloride, ethylene glycol, ethylhexyl acrylate, butyl acrylate, and isobutylene.[13] Some cars caught fire and some spilled their loads into an adjacent ditch that fed into streams and waterways that eventually emptied into the Ohio River.[14] The response required more than 165,000 tons of solid waste to be transported off site, more than 35 million gallons of

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[6] *See, e.g.,* Illinois Hazardous Materials Transportation Act, 430 ILCS 30/1. *See also, e.g.,* Illinois State Police Directive ENF-042, Hazardous Materials Enforcement Program and Incident Response; National Conference of State Legislatures, *State Hazardous Materials Transportation, Registration and Permitting*, https://www.ncsl.org/transportation/state-hazardous-materials-transportation (updated July 21, 2020) (last accessed March 3, 2026); Illinois Environmental Protection Agency, special hazardous waste hauling permits, https://epa.illinois.gov/topics/waste-management/waste-disposal/special-waste/transportation-permits.html (last accessed March 3, 2026).

[7] *See, e.g.,* Illinois Commerce Commission, https://icc.illinois.gov/rail-safety (last accessed March 3, 2026).

[8] *See, e.g.,* Illinois Emergency Operations Plan, Annex 13, Oil and Hazardous Materials Response, available at https://iemaohs.illinois.gov/preparedness/ieop.html (last accessed March 3, 2026).

[9] *See, e.g.,* Illinois Emergency Planning and Community Right-to-Know Act, 430 ILCS 100.

[10] 430 ILCS 100/2 Sec. 2(2)

[11] *Id.*

[12] *See generally*, *e.g.*, California Department of Motor Vehicles, California Autonomous Vehicle Regulations, available at: https://www.dmv.ca.gov/portal/vehicle-industry-services/autonomous-vehicles/california-autonomous-vehicle-regulations/ (last accessed March 3, 2026); *see also*, *e.g.*, California Code of Regulations, Title 13, Division 1, Chapter 1, Article 3.7 "Testing of Autonomous Vehicles" and Article 3.8 "Deployment of Autonomous Vehicles"; *see also* California Department of Motor Vehicles, Current Proposals and Actions, Autonomous Vehicles, OAL File Number 2025-0415-04, available at https://www.dmv.ca.gov/portal/about-the-california-department-of-motor-vehicles/california-dmv-rulemaking-actions/ (last accessed March 3, 2026).

[13] EPA *East Palestine, Ohio Train Derailment Background*, (last updated January 5, 2026), available at https://www.epa.gov/east-palestine-oh-train-derailment/background (last accessed March 3, 2026).

[14] *Id.*

hazardous wastewater to be transported off site, and more than 2 million gallons of wastewater to be treated on site.[15]

The accident also required an immediate 1-mile evacuation zone encompassing about 2,000 residents, and this zone was expanded a few days later to allow officials to vent and burn the remaining contents of several tank cars that still contained hazmat. The vent and burn action "resulted in a mushroom cloud that towered over the town and surrounding area"[16] and residents reported significant health harms in the immediate aftermath and ongoing for years after.[17] These harms, as recently acknowledged by the National Institutes of Health, included "headaches as well as respiratory, skin, and eye irritations," and "concern about broader long-term impacts on maternal and child health as well as psychological, immunological, respiratory, and cardiovascular effects."[18] The gravity of these and other potential harms from hazmat transportation requires PHMSA to proceed with great caution, coordinate closely with state and local partners, and always put safety before expediency, especially when considering autonomous transportation of hazmat.

III. COMMENTS

A. *PHMSA should not implement a regulatory program permitting autonomous transportation of hazmat until the safety of autonomous transportation technologies is sufficiently tested and demonstrated.*

PHMSA should not implement a regulatory program for hazmat transportation via autonomous systems for any transportation mode until autonomous technology for the specific mode of transportation has been sufficiently tested and successfully implemented for non-hazmat transportation. PHMSA should follow the regulatory approach of states that have extensive experience regulating autonomous transportation systems. For example, California, the state with the most autonomous vehicles in testing and deployment on public roads, has recognized the primary importance of ensuring public safety through regulation of autonomous vehicles as a still-developing technology. Since 2018, California has prohibited, with very limited exclusions, the testing or deployment on public roads of autonomous vehicles that transport hazmat.[19] California is currently in the process of updating its regulations in order to allow for the further testing and deployment of autonomous vehicles within the state, including heavy-duty commercial autonomous vehicles, which are currently

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[15] EPA Report Submitted Pursuant to Section 2(b) of Executive Order 14108, available at https://www.epa.gov/east-palestine-oh-train-derailment/legal-and-other-documents (last accessed March 3, 2026).

[16] NTSB Press Release, *Failed Wheel Bearing Caused Norfolk Southern Train Derailment in East Palestine, Ohio* (published June 25, 2024), https://www.ntsb.gov/news/press-releases/Pages/NR20240625.aspx (last accessed March 3, 2026).

[17] *See* PBS News, *A year after a train derailment in Ohio spilled hazardous chemicals, health fears persist for East Palestine* (published February 2, 2024), https://www.pbs.org/newshour/nation/a-year-after-a-train-derailment-in-ohio-spilled-hazardous-chemicals-health-fears-persist-for-east-palestine (last accessed March 3, 2026).

[18] National Institutes of Health Press Release, *NIH to Fund Long-Term Health Studies for East Palestine After Train Disaster* (published June 19, 2025), available at https://www.hhs.gov/press-room/nih-long-term-health-research-east-palestine-ohio-train-disaster.html (last accessed March 3, 2026).

[19] *See* 13 CCR § 227.28(a)(5), operative April 1, 2018.

prohibited.[20] However, California has remained committed to public safety during this next developmental stage by continuing to prohibit the testing and deployment of autonomous vehicles that transport hazmat.[21]

This view is also strongly held by first responders.[22] "We believe any consideration to authorizing [automated vehicle] transportation of hazardous materials can only occur after the development of a strong record of safe AV [Automated Vehicle] use while engaged in the transport of non-hazardous materials."[23] Consistent with the States here, first responders urge PHMSA "to engage in a long deliberative review of AV use to transport non-hazardous cargos before considering expansion of operation authority to the regulated hazardous materials arena."[24]

For example, automated heavy-duty truck use is still generally in the demonstration phase,[25] and autonomous vehicle testing and use thus far has been largely limited to passenger transportation or delivery of non-hazardous materials.[26] DOT's Automated Vehicle Transparency and Engagement for Safe Testing (AV TEST) Initiative started in 2020, provided some initial grant funding for demonstration projects,[27] and last year, NHTSA published a notice of proposed rulemaking, proposing a "voluntary framework for the evaluation and oversight of motor vehicles equipped with automated driving systems."[28] In describing the proposal, NHTSA clarified that it was proposing to limit eligibility for that initiative to ADS-equipped vehicles, and explained that

> "[t]his scope allows focus on the unique complexities of ADS while most automated driving systems operations are within the control of the companies responsible for their testing. Currently, very few ADS-equipped vehicles are available for purchase by the general public. Instead, almost all such vehicles are owned and operated by vehicle manufacturers, ADS developers, or fleet operators. Most of these vehicles remain in the testing and development stage. If they operate on public roads at all, they do so only in limited environments. Limited numbers of ADS-equipped vehicles are engaged in commercial applications, such as goods delivery platforms or mobility on demand operations. However, even those commercial

[20] California Department of Motor Vehicles, OAL File Number 2025-0415-04, Notice of Proposed Action, April 25, 2025, pp. 2-3, available at: https://www.dmv.ca.gov/portal/file/notice-of-proposed-action-2025-0415-04-pdf/ (last accessed March 3, 2026).
[21] *Id.* at 4.
[22] *See* PHMSA 2018-0001-0017, Comments of the International Association of Fire Fighters (May 7, 2018) in response to PHMSA's *Request for Information on Regulatory Challenges to Safely Transporting Hazardous Materials by Surface Modes in an Automated Vehicle Environment*, 83 Fed. Reg. 12,529 (March 22, 2018), (Docket No. PHMSA-2018-0001) ("PHMSA RFI").
[23] *Id.* at 1.
[24] I*d.*
[25] *See supra* fn. 3; *see also* CNN, *The first driverless semis have started running regular longhaul routes* (published May 1, 2025) ("Aurora is starting with a single self-driving truck and plans to add more by the end of 2025"), available at https://www.cnn.com/2025/05/01/business/first-driverless-semis-started-regular-routes (last accessed March 3, 2026).
[26] *See* U.S. Department of Transportation (DOT)'s Automated Vehicle Transparency and Engagement for Safe Testing (AV TEST) Initiative (NHTSA), https://avtest.nhtsa.dot.gov/av-test/home (last accessed March 3, 2026).
[27] *See* AV TEST Initiative Test Tracking Tool, https://www.nhtsa.gov/automated-vehicle-test-tracking-tool (last accessed March 3, 2026).
[28] NHTSA Proposed Rule ADS-Equipped Vehicle Safety, Transparency, and Evaluation Program, 90 Fed. Reg. 4,130 (Jan. 15, 2025).

applications remain largely under development and operate in limited environments.[29]

As NHTSA recognizes, autonomous transportation continues to develop but remains in early stages. PHMSA should not implement regulations or authorize automated transportation of hazmat until after prototype use cases for non-hazmat autonomous transportation have sufficiently demonstrated the safety of this new technology.

PHMSA cannot design an adequate regulatory program for autonomous transport of hazmat before further testing and initial implementation of non-hazmat transportation by federal and state regulatory bodies. If PHMSA drafts and promulgates regulations without the benefit of lessons learned, then PHMSA will have charted out a course that exposes first responders, public safety, and the environment to increased, grave risks. PHMSA will also then need to revise its regulations through new rulemakings or risk overseeing a regulatory program that fails to fulfill PHMSA's fundamental purpose to maintain safety. If PHMSA does design a hazmat transportation regulatory program, it must only do so building on the foundation of a safe, reliable, and tested framework for non-hazmat automated transportation systems.

B. ***If PHMSA were to proceed to implement a regulatory program permitting autonomous transportation of hazmat, then PHMSA must address the following concerns.***

i. <u>PHMSA must engage directly and extensively with state and local first responders, emergency management personnel, and state homeland security.</u>

First and foremost, first responders' ability to safely and successfully respond to future accidents must be ensured before PHMSA proposes to implement a regulatory program. PHMSA should not exclusively rely on industry groups or associations as stand-in entities for the viewpoints of individual state and local first responders. PHMSA should establish a working group and invite those front-line personnel to ensure they are engaged and consulted on all regulatory developments.

States' emergency response communities rely heavily on immediate access to shipping papers, cargo identification, and emergency response information during hazmat incidents. When systems are designed and implemented for hazmat transportation, those systems must have the functionality to provide on-scene information about an accident that is critical to maintain safety for first responders and help emergency management support those responders.[30] This will include, among other things, information about the surrounding environment, such as which direction the wind is blowing, and whether water sources are located nearby—the type of information that may be difficult to capture in real time by automated systems. This type of information has been reliably communicated orally between

[29] *Id.* at 4,132.

[30] Specifically regarding rail safety, "[w]ithout a crew member in direct control . . . there would be no engineer or conductor on hand to share crucial information to first responders, including documentation about the [hazmat] onboard." The International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART), *FRA Permits Self-Driving Freight Test Despite Warnings from SMART-TD* (published February 4, 2025) ("SMART Statement"), available at https://www.smart-union.org/fra-permits-self-driving-freight-test-despite-warnings-from-smart-td/ (last accessed March 3, 2026).

human operators and first responders and new systems must be designed to capture and convey critical on-scene information.

In essence, the automated systems will need to step into the shoes of a human operator and provide eyes on the ground to inform those responders of the imminent risks and impacts. First responders are best positioned to test the efficacy of safety monitoring, hazard communication, and response systems. All risk management and incident response system discussions, and regulatory standards development, should directly involve first responders and emergency management personnel. First responders should be engaged to inform prototype designs of safety and emergency management systems and pilot testing of those systems. The system testing should be randomized to cover a variety of situational purposes, such as interactions with law enforcement, fire fighters, and highway maintenance, and various environments, including urban, suburban, and rural areas.

In addition, before PHMSA or any other relevant federal regulatory body even proposes to allow automated transportation of hazmat, those bodies must establish or adopt minimum industry standards for training content and quality and not leave individual operators to implement their own trainings without foundational requirements.[31] These regulatory bodies should assist states with training first responders and emergency management personnel, and other supporting workforce, regarding the new technology and supportive systems (e.g., incident reporting, safety system functionality).

There is also specific functionality that must be built into autonomous technology to address first responder concerns. Some such functionality includes a vehicle's ability to recognize and respond appropriately when a law enforcement officer or other responder activates emergency lights or when an officer is trying to pull a vehicle to the side of the road. These officers will need immediate access to all applicable information on the type of cargo and its associated hazards in order to inspect the vehicle safely and appropriately. And if a critical violation is discovered (*e.g.*, unsecured packages of hazmat) and requires repair prior to the vehicle resuming its trip, who will be notified of the required repair and how will this be communicated to the vehicle for response? Law enforcement may also need to order a vehicle to exit the trafficway at a scalehouse or rest area if the trafficway must be closed due to an accident or other incident. For these and other reasons, law enforcement officers and first responders must be involved in designing and testing the technology necessary to ensure they can safely perform their duties.

Rural areas present particularly unique challenges. Many smaller, rural communities have volunteer fire fighters and other first responders who would need specialized training and support to safely respond to accidents involving new autonomous transportation technology.[32] Those areas may also lack consistent cell service and internet connectivity, which could slow down or interfere with remote sensing or incident response functionality, leading to circumstances that may leave first responders without critical information. This

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[31] *Cf.* FRA Waivers for Autonomous Rail Testing, requiring the permittee to "provide emergency response training for all emergency responders who might be called to respond in the event of an emergency" (waiver condition 17), available at https://www.smart-union.org/fra-waivers-for-autonomous-rail-testing/ (last accessed March 3, 2026).

[32] *See* National Transportation Safety Board (NTSB) Press Release, *Failed Wheel Bearing Caused Norfolk Southern Train Derailment in East Palestine, Ohio* (published June 25, 2024) (issuing safety recommendation to address "inadequate emergency response training for volunteer first responders"), available at https://www.ntsb.gov/news/press-releases/Pages/NR20240625.aspx (last accessed March 3, 2026).

will increase the risks to their safety and impede their ability to respond effectively to a hazmat release.

Many of the undersigned states, including New Jersey and Illinois, are also home to densely populated urban and suburban areas in close proximity to critical, complicated, and heavily travelled multimodal transportation infrastructure. Any proposed regulations should require formal coordination with state agencies, including but not limited to homeland security, law enforcement, or emergency management agencies, prior to authorizing site-specific activities in locations with significant logistical complications. State-level coordination must be mandatory, not discretionary, to ensure public safety, security, and operational deconfliction.

ii. PHMSA should consider establishing a risk-based list of hazmat ineligible or eligible for automated transportation.

If PHMSA chooses to propose new regulations now or in the future, then PHMSA should consider creating a risk-based list of specific hazmat that are approved for automated transport while also listing other hazmat as prohibited from some or all types of automated transportation based on a public notice and comment process to identify those materials. This view is shared by other concerned parties.[33] In addition, PHMSA should consider whether some hazmat are too dangerous to ever be transported without human oversight. "PHMSA should prohibit certain substances from ever being transported without a human operator due to the risk these materials pose to life and the environment."[34] By at least implementing a listing process, PHMSA would provide States, first responders, transportation experts, and the scientific community the opportunity to identify concerns with specific hazmat and the associated routing or transportation modes. If PHMSA proceeds to propose regulations to facilitate automated hazmat transportation, then PHMSA should include an initial proposed list of hazmat that it finds preliminarily acceptable for automated transport and identify the specific modes of transportation for which it is deemed acceptable. PHMSA should also identify the process it will implement and the criteria it will use to make eligibility determinations.

iii. PHMSA must respect the States' authority over route designations.

Under the Hazardous Materials Transportation Act, States maintain authority over specific route designations by which hazmat may or may not be transported by motor vehicle.[35] Pursuant to this law, states may consult and coordinate with the Secretary of Transportation to publish a list a of hazmat highway routing designations and restrictions—the National Hazardous Materials Route Registry (NHMRR)—which contains the routes that states have designated for hazmat transportation. Many of the undersigned states have designated routes pursuant to this process and intend to continue designating routes in the future for any autonomous transportation of hazmat by highway.[36] PHMSA must continue to honor state authority to designate appropriate routes based on the states' and municipalities'

[33] *See* Comments of the International Association of Fire Chiefs at 4 (May 7, 2018) ("PHMSA should establish a 'risk-based' analysis of each classification"), Comment PHMSA-2018-0001-0018 on PHMSA RFI.
[34] *See* Comments of the AFL-CIO Transportation and Trades Department at 3 (May 7, 2018), Comment 2018-001-0022 on PHMSA RFI.
[35] 49 USC § 5112.
[36] See https://www.fmcsa.dot.gov/regulations/hazardous-materials/national-hazardous-materials-route-registry-state (last accessed March 3, 2026).

knowledge of local conditions and use conflicts. The Secretary and states should continue to consult and coordinate on route designations for autonomous transportation in the same manner as traditional human-operated transportation routes. PHMSA should facilitate this state engagement and consultation for autonomous transportation of hazmat so states can continue to protect their citizens and ensure that routing designations do not have negative spillover effects on other states.

iv. A nationwide hazard communication system and protocol must be designed and implemented prior to approving any hazmat transportation.

State emergency management agencies serve as the call center for hazmat release reporting and are responsible for managing and coordinating state and local disaster response efforts.[37] To perform these critical functions, it is vital that these state agencies receive accurate and timely information. Any proposed regulations must include enforceable reporting requirements sufficient to ensure that the automated transportation systems comply with Federal and State chemical release reporting requirements and that they report directly to the state agencies charged with disaster response.

A central federal tracking and reporting system and individual state systems must be designed to successfully interact and transmit sufficient information from automated transport modes to state and local authorities to inform and coordinate incident response. These systems must consider what information should be routinely reported (e.g., departure, re-routing, arrival) and what circumstances will prompt an incident report. Placarding requirements also should be no less strict than existing standards for manned transportation and may need to include additional risk indicators related to the specific technology employed (*e.g.*, battery flammability risks). This basic information must be immediately accessible.

Assuming that future hazmat communications may be facilitated through a web-based system, this system will still need a backup, analog mode, such as the current telephone reporting system, if wireless internet access is lost. First responders must always be able to speak with an individual about an incident, 24 hours a day, 7 days a week. Those responders must be able to access and cross-reference incident-specific identifiers, such as distinct identification numbers or an alphanumeric system that can be read from a distance, such as on a placard.

v. Security plans and systems must be developed.

Each transportation mode should have security plans and measures designed to identify, prevent, and respond to security threats specific to the modality's security risks. A national security plan should ensure continuity across the nation and states should be able to add more specific security plan requirements tailored to local conditions. These security plans and measures should also adapt to the specific context and transportation locations, including plans for physical interference, cybersecurity threats, and loss of connectivity. For example, regulations for drone transportation should require the operators to implement controls consistent with other federal standards to mitigate risks of cyber incidents.[38] Security and

[37] *See* Illinois Hazardous Materials Emergency Act, 430 ILCS 50/5.03; *see also* 29 Ill. Adm. Code 430.
[38] *See* FAA's Securing UAS Fleets from Cyber Attacks, available at https://www.cna.org/analyses/2024/08/securing-uas-fleets-from-cyber-attacks (last accessed March 3, 2026), the U.S. Department of Commerce's National Institute of Standards and Technology (NIST) Cybersecurity

training protocols for highway transportation should address how loads will be protected if the automated systems break down in remote areas and identify who will respond. These protocols should include systems training for all responders to understand how to disconnect the batteries and how to unlock and operate systems if needed in emergency circumstances.

Any regulations that set standard requirements for security plans and response measures must be sufficient to address any security threat for all modes of transportation. Such proposed regulations should include how threats are identified and communicated, to whom they are communicated, and who will be responsible for response.

vi. PHMSA should design and implement a regulatory permitting process.

If PHMSA develops a regulatory program for autonomous transportation of hazmat, it should do so by promulgating enforceable regulations and permit requirements rather than using guidance documents or performance-based systems. The technology for automated transportation is still nascent, and the risks from hazmat are too great, to forego enforceable, prescriptive regulatory requirements that have been vetted through the notice and comment rulemaking process. Regulatory requirements provide more certainty and consistency than guidance, which does not reliably establish enforceable requirements and has less certainty due to its vulnerability to frequent policy changes. As the technology becomes more trustworthy, and satisfactory performance standards and histories are established, then regulations can be modified to accommodate those new developments.

PHMSA should not adopt a performance standards-based approach; there are no internationally accepted standards for automated transportation of hazmat and the novelty of the technology means that this transportation sector does not have a history of implementing or adhering to any widely-accepted standards. The risks of transporting hazmat via nascent technologies must be carefully controlled and subject to consistent requirements rather than left to individualized standards. In sum, any regulatory program must include enforceable reporting requirements with enforcement mechanisms and consequences for noncompliance. This will serve the paramount purposes of public safety and environmental protection, which should not be subservient to private corporate interests.[39]

C. *Additional Mode-Specific Concerns*

i. Rail

"[R]ailroad accidents, while less frequent than trucking accidents, are often catastrophic when they do occur."[40] Trains can transport large volumes of hazmat in a single trip,[41] and autonomous rail transportation without any cargo has received very limited

Framework Rev. 2.0, available at https://csrc.nist.gov/pubs/sp/1308/2pd (last accessed March 3, 2026), and NIST 800-53 Rev 5.2.0—Security and Privacy Controls for Information Systems and Organizations, available at https://csrc.nist.gov/projects/cprt/catalog#/cprt/framework/version/SP_800_53_5_2_0/home (last accessed March 3, 2026).

[39] *See e.g.,* Comments of Amazon at 1 (May 7, 2018) (seeking performance-based standards and not "prescribed equipage or design requirements") Comment PHMSA-2018-0001-0021 on PHMSA RFI.

[40] *BNSF Ry. Co. v. California Dep't of Tax & Fee Admin.*, 904 F.3d 755, 771072 (9th Cir. 2018).

[41] For example, the train in the East Palestine disaster carried 150 cars, of which 38 rail cars, including 20 cars carrying hazmat, derailed. *See* EPA, East Palestine, Ohio Train Derailment, Background (last updated January 5, 2026), available at https://www.epa.gov/east-palestine-oh-train-derailment/background (last accessed March 3, 2026).

demonstration testing. PHMSA identified only one approval for an autonomous railway project located in Georgia, which included 22 waivers of various FRA regulations.[42] Initial planning is underway in other states but in very preliminary stages.[43]

Industry experts who have observed testing have raised safety concerns with the current state of technology.[44] Some predominant concerns include "the vehicles' failure to adequately warn oncoming traffic at road crossings" and the "unreasonably long distances to come to a stop."[45] A paramount concern for states regarding railways is the safety of grade crossings. New and existing grade crossings must be constructed and operated in a manner that adapts to any autonomous rail use, including new crossing warning technology, and warning lights and sounds from the railcars. Speed zones must be identified and adjusted as necessary based on the weight and size of autonomous trains.

Autonomous railcars powered by lithium-ion batteries are already being tested in several states.[46] Lithium-ion batteries alone are considered hazmat, which means that even empty autonomous railcars will already be transporting hazmat.[47] PHMSA is aware of the well-known fire risks associated with lithium-ion batteries:

> Unlike standard alkaline batteries, most lithium batteries manufactured today contain a flammable electrolyte and have an incredibly high energy density. They can overheat and ignite under certain conditions, such as a short circuit, physical damage, improper design, or assembly. Once ignited, lithium cell and battery fires can be difficult to extinguish. Additional, although infrequent, events can result in lithium cells and batteries experiencing thermal runaway, a chain reaction leading to a violent release of stored energy and flammable gas. This thermal runaway can propagate to other batteries or combustible materials nearby, potentially resulting in large scale thermal events with severe consequences.[48]

In the East Palestine, Ohio disaster in 2023, an overheated wheel bearing was not detected in a timely manner by automated system detectors and the system failed to warn the crew in time to halt the train, leading to a "fiery" derailment.[49] The NTSB's investigation of the disaster identified numerous system failures, none of which resulted from human error.[50]

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[42] 90 Fed. Reg. at 55838 fn.20, citing 90 Fed. Reg. 9053 (Feb. 2, 2025); *see* FRA Waivers for Autonomous Rail Testing (published February 4, 2025), available at https://www.smart-union.org/fra-waivers-for-autonomous-rail-testing (last accessed March 3, 2026). S*ee also* SMART Statement.
[43] *See* University of Illinois Urbana-Champaign, Grainger College of Engineering, Illinois Center for Transportation, Illinois Autonomous and Connected Track (I-Act), https://ict.illinois.edu/i-act (last accessed March 3, 2026).
[44] SMART statement.
[45] *Id.*
[46] *Id.*
[47] *See* 49 C.F.R. Parts 171-180; PHMSA "Transporting Lithium Batteries," available at https://www.phmsa.dot.gov/lithiumbatteries (last accessed March 3, 2026); *see also* EPA Used Lithium-Ion Batteries guidance, available at https://www.epa.gov/recycle/used-lithium-ion-batteries (last accessed March 3, 2026).
[48] *See id.*, PHMSA, Transporting Lithium Batteries.
[49] NTSB Press Release, *Failed Wheel Bearing Caused Norfolk Southern Train Derailment in East Palestine, Ohio* (published June 25, 2024), available at https://www.ntsb.gov/news/press-releases/Pages/NR20240625.aspx (last accessed March 3, 2026).
[50] *Id. See also* NTSB Abstract of Final Report, Finding No. 1 (None of these issues contributed to the derailment . . . and subsequent hazardous materials release: . . . (3) the train crew's proper train handling and appropriate

When the train derailed, several of the tanker cars were "mechanically breached, releasing flammable and combustible liquids that ignited."[51] Combining flammable hazmat with a fire-prone energy source is a recipe for catastrophe.

The significant risks of rail transportation for hazmat have led states previously to oppose shipment of liquified natural gas (LNG) by non-autonomous rail and urge for stringent protective measures in the alternative. Among those requirements were speed restrictions, use of specific brake types, remote monitoring for location and leaks, and training of emergency responders along the route.[52] These and other protective measures should likewise be considered, tailored, and implemented for any automated transportation of hazmat.

In fact, bipartisan legislation has been introduced in the Senate to improve railway safety in response to the East Palestine disaster.[53] The legislation would mandate the presence of two crewmembers, expand the list of hazmat that are subject to higher safety standards, improve emergency response, and expand support for first responders.

ii. Air

The safety and security concerns with drones carrying hazmat anywhere in the United States are readily apparent. Nevertheless, PHMSA, along with the FAA,[54] envision a not-distant future where significant numbers of drones will carry hazmat and other goods over people's homes and into the hearts of congested urban and suburban areas.[55]

Drone use has rapidly expanded, and continues to expand, nationwide. The Department of Homeland Security estimates there are already "more than 1.7 million registered drones flying in the United States."[56] This expanding use is accompanied by new threats and complications, including cybersecurity concerns, the use of radio signals to jam drones, and the use of high-energy lasers to take down drones. Some of these risks have been illustrated by recent high-profile incidents near the Texas-Mexico border, resulting in the

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response to the bearing alarm and derailment"), available at https://www.ntsb.gov/news/press-releases/Pages/NR20240625.aspx (last accessed March 3, 2026).

[51] *Id.*

[52] *See* Comments of the Attorneys General of Maryland, et al. on Notice of Proposed Rulemaking – Hazardous Materials: Liquefied Natural Gas by Rail, Docket No. PHMSA-2018-0025 (HM-264), (January 13, 2020), available at https://www.regulations.gov/comment/PHMSA-2018-0025-0283 (last accessed March 3, 2026).

[53] *See* Press Release, U.S. Senate Committee on Commerce, Science, & Transportation, *Cantwell, Husted, Colleagues Reintroduce Bipartisan Railway Safety Act* (published February 24, 2026), available at https://www.commerce.senate.gov/2026/2/cantwell-husted-colleagues-reintroduce-bipartisan-railway-safety-act (last accessed March 3, 2026).

[54] *See* FAA, Package Delivery by Drone (Part 135), https://www.faa.gov/uas/advanced_operations/package_delivery_drone (last accessed March 3, 2026).

[55] Amazon News, *Amazon drones can now fly farther and deliver to more customers following FAA approval* (published May 30, 2024) (describing goal of delivering 500 million packages per year by drone), available at https://www.aboutamazon.com/news/transportation/amazon-drone-prime-air-expanded-delivery-faa-approval (last accessed March 3, 2026).

[56] Anchorage Daily News, *US military used laser to inadvertently shoot down a Boarder Protection drone, lawmakers say* (published February 27, 2026), *available at* https://www.adn.com/nation-world/2026/02/27/us-military-used-laser-to-shoot-down-a-border-protection-drone-lawmakers-say/ (last accessed March 3, 2026).

FAA closing airspace.[57] In both instances, the military thought the drones were a threat. Both times they were wrong.

This increasingly congested airspace is subject to complex regulatory frameworks. For example, New Jersey operates within one of the most congested and operationally complex airspace environments in the United States. The State lies beneath and adjacent to overlapping Class B and Class C airspace associated with John F. Kennedy International Airport (JFK), Newark Liberty International Airport (EWR), LaGuardia Airport (LGA), Philadelphia International Airport (PHL), Teterboro Airport (TEB), and numerous satellite airports and heliports. This airspace already supports dense volumes of commercial aviation, medical helicopter operations, law enforcement aviation, military training routes, maritime aviation, and public safety UAS activity. Transportation by drone in this and other similarly congested environments will heighten the risks of a collision or ground impact, and the release of any hazmat would cause additional harm.[58]

These risks and recent incidents raise a series of questions about whether drones could ever safely carry hazmat through already congested airspace that is increasingly filled with drones dispatched for various purposes. How would law enforcement discern a threatening drone from a non-threatening drone, and how will law enforcement know which drones among the many are carrying hazmat? How will state and local law enforcement be trained to do so?[59] The considerable threats to public safety are obvious but the ability to prevent significant public harm is not. PHMSA should never sacrifice public safety for the profits and market domination of private companies.[60]

iii. Vessel

Like the concerns discussed above, the States urge PHMSA not to authorize transportation of hazmat by automated vessels—especially uncrewed autonomous vessels—until after these systems have been shown to be safe for non-hazmat shipments. In particular, PHMSA should not propose to amend its regulations concerning hazmat transport by autonomous vessel at least until after the International Maritime Organization (IMO) issues its forthcoming non-mandatory regulatory framework for autonomous ships, which is currently expected in May 2026.[61] PHMSA should harmonize its future regulations with any updates to the International Maritime Dangerous Goods Code, which can only be achieved once the IMO framework is established.

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[57] New York Times, *A Laser, a Shutdown of Airspace and Signs of Government Agencies at Odds* (published February 26, 2026), available at https://www.nytimes.com/2026/02/26/us/drone-faa-dhs-el-paso-airspace.html (last accessed March 3, 2026).

[58] FAA airspace design and safety doctrine recognizes that congestion, complexity, and mixed-use operations significantly increase collision risk and operational workload, particularly in terminal and low-altitude environments. *See* FAA Air Traffic Organization Policy, Order JO 7110.65, available at https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.current/documentnumber/7110.65 (last accessed March 4, 2026).

[59] Press release, *Burlinson Introduces Bill to Expand Counter-Drone Authority for State and Local Law Enforcement*, (published February 12, 2026), available at https://burlison.house.gov/media/press-releases/burlison-introduces-bill-expand-counter-drone-authority-state-and-local-law (last accessed March 3, 2026).

[60] *See* Fox Business, *Walmart expands drone delivery service to 3 more states in race against Amazon* (published June 6, 2025), available at https://www.foxbusiness.com/lifestyle/walmart-expands-drone-delivery-service-three-more-states-race-against-amazon (last accessed March 3, 2026).

[61] *See* International Maritime Organization, *Autonomous Shipping*, https://www.imo.org/en/mediacentre/hottopics/pages/autonomous-shipping.aspx (last accessed March 3, 2026).

If PHMSA does proceed to propose regulations governing hazmat transportation by automated vessels, such regulations, including stowage and segregation procedures, should be no less stringent than those for human-operated vessels. PHMSA should also consider limiting the use of autonomous vessel systems in hazmat transport to certain tasks or locations, such as fixed or lower-speed routes and less trafficked waters.

iv. Highway

Current regulations require certain hazmat to be transported by heavy-duty truck drivers holding a Commercial Driver's License (CDL) with a HazMat endorsement. These drivers undergo advanced training on safe handling, transportation protocols, and first responder-level incident management. HazMat-endorsed drivers provide essential real-time information and coordination with first responders—a capability that automated systems currently cannot replicate.

If PHMSA proceeds to propose regulations for hazmat transportation by highly automated vehicles, PHMSA should require a human to be present in the vehicle and able to take control during a system malfunction and interact with emergency responders. Fully automated vehicles transporting hazmat would lack a trained operator capable of providing critical information during traffic incidents, such as vehicle malfunctions or major accidents. Without a human operator on scene, communication with emergency responders would be limited, potentially delaying emergency response and jeopardizing public safety. PHMSA should not authorize hazmat transportation in fully driverless or remote-operated vehicles until such systems can replicate the safety functions, emergency response coordination, and regulatory compliance currently provided by trained human drivers.

IV. CONCLUSION

The States urge PHMSA to halt its plan to propose regulations for the autonomous transportation of hazmat until the technology and infrastructure for general autonomous transportation has been reliably developed, tested, and safely implemented. However, if PHMSA decides to proceed at this time to propose regulations, then PHMSA must engage with states and first responders to ensure their ability to safely and successfully respond to future hazmat accidents involving autonomous transportation systems. PHMSA must also consider and address the States' concerns identified above.

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ATTACHMENTS

- **Amazon comments on BVLOS proposed rule FAA-2025-1908-2872_attachment_1**
- **CA Notice-of-Proposed-Action-04.18**
- **Comments of Attorneys General of Maryland, et al. PHMSA-2018-0025-0283_attachment_1**
- **EPA East Palestine eo_14108_report_10202023-final**
- **EPA EO 14108 report update**
- **FRA Waivers**
- **IEMA Emergency Operations Plan annex-13-oil-and-hazardous-materials-response**
- **Illinois State Police Directive ENF-042 DIR**
- **NIST Cybersecurity Framework Rev 2.0**
- **NTSB Abstract East Palestine**
- **Securing-UAS-Fleets-from-Cyber-Attacks**
- **special-waste-hauling-application-packet**