

Freight Rail & Hazmat Safety

Key Takeaway: Railroads play a crucial role in safely transporting hazmat, ensuring the well-being of communities, their employees and the environment. Beyond complying with strict regulations and operating practices, railroads have advocated for more stringent tank car standards, voluntarily developed an app for first responders and worked with the FRA to create software to determine the safest and most secure rail routes for hazmat.

From the chlorine used to purify drinking water to the chemicals used in fertilizers, railroads provide a safe solution for moving the hazardous materials (hazmat) essential to daily life. Railroads work daily with customers, suppliers, communities and federal regulators — like the U.S. Department of Homeland Security — to safely and securely deliver the freight they are legally required to move under a [common carrier obligation](#).

Railroads follow rigorous design standards for rail cars carrying hazmat, developed specialized first responder mobile apps, and worked with the U.S. Federal Railroad Administration to create software that determines the safest, most secure rail routes for hazmat. Coupled with the rail industry's ongoing commitment to infrastructure investment, technology deployment and rigorous employee training, the hazmat accident rate is down 75% since 2000 to its lowest-ever rate.

While freight rail is the safest way to move goods over land, and more than 99.9% of all hazmat moved by rail reaches its destination without a release caused by a train accident, recent derailments remind us that such incidents can profoundly affect a community. Freight rail is dedicated to protecting the health and safety of our workers, our communities and the environment. Class I railroads are taking [immediate actions](#) to further enhance rail safety, from installing more inspection technologies to training more first responders.

Railroads comply with federal regulations as well as industry-wide and railroad-specific operating procedures to ensure safe operations.

Industry and railroad-specific procedures cover employee training, train speeds, inspections, rail yard practices and locomotive operation. Federal regulations from various agencies, including the FRA and the Pipeline & Hazardous Materials Safety Administration (PHMSA), dictate safety practices in areas such as placement of railcars carrying certain commodities in the train "consist," hazmat routes, an inspection of equipment and track, speed restrictions and more. While federal regulations dictate the frequency of inspections, railroads often inspect their infrastructure with greater regularity than the federal government requires.

Freight rail's private investments have increased safety.

There is a direct correlation between increased investment in the rail network and enhanced safety performance. Record spending — approximately \$760 billion between 1980 and 2022 — helps freight railroads make a safe network safer. Using advanced technology, railroads routinely inspect track components, bridges and equipment to identify safety issues and proactively schedule maintenance before incidents occur.

These technologies include using drones to [inspect](#) inaccessible areas, ultrasound technology to identify flaws within the track and specialized monitors mounted along the track that identify faulty or worn railcar components as a train passes by. Because the nation's rail network is highly integrated with equipment often operating across the networks of multiple rail companies, railroads participate in industry-wide initiatives to gather and share data so potential problems with equipment can be identified quickly.

America's freight railroads transport most hazmat using a fleet of specialized rail tank cars and have advocated for tougher standards.

Thanks to rail industry advocacy, in 2015, USDOT released regulations requiring new, tougher tank car standards for certain types of hazmat, including crude oil. Older tank cars that do not meet new standards are being phased out. Railroads also proactively equip many trains carrying hazmat with equipment designed to enhance rail braking and minimize damage to rail cars in the event of an accident.

U.S. Class I railroads use the Rail Corridor Risk Management System (RCRMS), a joint initiative between railroads and the government, to analyze and identify the safest and most secure routes for transporting highly hazardous materials. The model uses 27 risk factors — including hazmat volume, trip length and population density along the route — to assess rail routes' overall safety and security.

Railroads have 24/7 emergency response teams to assist local officials.

Railroads also maintain networks of on-call hazmat response contractors and environmental consultants to provide additional assistance. Freight railroads have a fundamental commitment to the safety of the communities they serve all across the country. Working with government and industry partners like MxV Rail, railroads help [train tens of thousands of emergency responders](#) each year and actively collaborate with local officials on emergency response plans in the event of an incident. Emergency response agencies can, upon request, receive confidential information on the hazmat moving through their communities.

Railroads actively collaborate with local officials on emergency response plans.

Upon request, railroads also share information with state and local officials on the types of cargo moving through their communities to inform emergency response planning. In partnership with the International Association of Fire Chiefs, the industry developed the [AskRailApp](#), which provides first responders across the rail network immediate access to accurate, timely data about what type of hazmat a rail car is carrying and how to respond to an incident safely.

Railroads follow strict regulations when a hazmat incident occurs.

When a hazardous substance incident occurs, railroads work closely with government agencies and safety experts to immediately contain the situation, protect the health and safety of citizens and the environment, remediate any impacts and carefully return to service. [Railroads rigorously adhere to federal and state regulations](#) for hazardous substance transportation, collaborating with regulatory agencies, deploying environmental experts, and actively engaging in monitoring and remediation to minimize hazmat incident impacts. Their commitment extends to supporting affected communities until resolution.