# Improving Safety and Efficiency at U.S. Rail Grade Crossings

Center Forward Basics

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## Overview

Railroads play a vital role in the U.S. economy, moving goods and people efficiently across a vast network. They contribute to economic output and job creation, all while embracing technologies that enhance sustainability. A key intersection of rail and road activity lies in the nation's highway-rail grade crossings, which present ongoing challenges for both safety and efficiency. Grade crossings are classified as either public or private, with differing responsibilities for their maintenance. Despite improvements over time, collisions at these crossings remain a top safety concern, with hundreds of fatalities and injuries reported each year. Simultaneously, disruptions from rail operations, infrastructure, and rising freight and population demands strain system efficiency. In response, federal and local governments and private stakeholders are advancing innovative grant programs and partnerships to improve safety measures, reduce delays, and modernize critical infrastructure.

## What are grade crossings?

Rail has been a primary means of transport for goods and people nationwide since the early 1800s. By 1835, local networks connected towns, and by 1850, 9,000 miles of tracks were laid. The first transcontinental railroad was completed after the Civil War in 1869, allowing economic activity to move from coast to coast. Through the 21st century, railroads have used innovative technology to improve efficiency while driving sustainability efforts. Railroads generated $233.4 billion in total economic output in 2023, and every railroad job creates 3.9 additional jobs in industries like manufacturing, logistics, and technology. The American freight network is made up of almost 140,000 miles of rail across the country to transport goods and people.

Highway-rail grade crossings are intersections where these railways and roadways intersect at-grade, or on the same level. About 212,000 of these grade crossings exist across the U.S. and can be publicly or privately owned. A public authority has jurisdiction over and maintains public grade crossings. Private grade crossings are on privately owned roadways, such as on a farm or industrial area, and are intended for use only by the owner or the owner's licensees and invitees. Public authorities do not maintain private grade crossings. Highway authorities and railroad companies hold legal responsibility for different elements at public grade crossings. States are responsible for evaluating grade crossing risks and prioritizing individual crossings for improvement.

## Current Concerns

The most significant concern around grade crossings is safety. More than 2,000 incidents and 200 fatalities at grade crossings occur each year. In 2024, there were 261 fatalities and 745 injuries at grade crossings. Automobiles, truck trailers, pedestrians, and pick-up trucks account for most incidents reported at these crossings. Current Federal Railroad Administration (FRA) data shows that collisions and pedestrians trespassing on tracks combined account for over 95% of all

## Center Forward Basics

Center Forward brings together members of Congress, not-for profits, academic experts, trade associations, corporations and unions to find common ground. Our mission: to give centrist allies the information they need to craft common sense solutions, and provide those allies the support they need to turn those ideas into results.

In order to meet our challenges we need to put aside the partisan bickering that has gridlocked Washington and come together to find common sense solutions.

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railroad fatalities. Grade crossing collision rates in 2024 were down 23% compared to 2000, with the rate declining yearly. These incidents, especially those resulting in injury and death, are the number one problem in rail safety, and private and public partners are working together to find solutions.

The other major issue in the rail industry relates to efficiency. Railways can experience blocks because of routine operations, such as switching railcars, weather delays, equipment inspections, and interactions with other traffic, especially at grade crossings. Disruptions can also come from emergencies, vandalism, and infrastructure issues. The complexity of these disruptions and the need to maintain rail logistics sometimes result in unavoidable delays.

Two key trends affect challenges to efficiency: increased freight volume and population growth. The amount of goods transported by all means of transportation has increased in the U.S. in recent years because of consumer demand, business investment, and government stimulus. The volume of intermodal freight, or shipping goods using a combination of ships, barges, trains, and trucks, has also increased, leading to more demand on railways and highways. As urban centers continue to grow, more and more people live around rail lines, increasing the demand for road crossings.

## Proposed Solutions

Federal and local governments, in addition to advocacy groups, created a slew of solutions to deal with the challenges of safety and efficiency at grade crossings. Demand for these programs has been overwhelming, highlighting broad support for rail safety investments that help prevent collisions, reduce congestion, and strengthen supply chains.

The Rail Crossing Elimination (RCE) Grant Program supports projects separating rail and road traffic, closing unsafe crossings, and upgrading warning systems. This program allocates $600 million annually to eliminate at-grade crossings under the authorization of the Infrastructure Investment and Jobs Act (IIJA). In its first round in 2023, it funded over 400 projects across 32 states. RCE grants can fund up to 80% of project costs. Projects can include grade separation or closure, track relocation, the improvement or replacement of protective devices (such as signals and signs), measures to improve safety, and the planning, environmental review, and design of an eligible project.

The Railway-Highway Crossings (Section 130) Program allocates $230 million annually for new warning devices and surface improvements. Section 130 projects are funded 100% by federal aid. This program supports safety upgrades such as lights, gates, and surface improvements. Other programs include the Consolidated Rail Infrastructure and Safety Improvements (CRISI), which provides funding for projects to improve intercity passenger and freight rail safety, efficiency, and reliability. About $2.5 million remains available for award under the fiscal year 2023-24 notice of funding opportunity. The Federal Highway Administration also offers grants for various transportation projects. FHA grants include Commuter Authority Rail Safety Improvement (CARSI) Grants for projects eliminating hazards and improving safety at public crossings.

Public-private partnerships like the Chicago Region Environmental and Transportation Efficiency (CREATE) Program have also proven effective. Federal, state, local, and private stakeholders joined to make Chicago's railways safer and more efficient. 25% of U.S. freight trains pass through Chicago, so CREATE invested $4.6 billion in 60 projects to improve the region's rail infrastructure. Partners invested in CREATE include the U.S. Department of Transportation and the Chicago Department of Transportation, and companies such as Amtrak, BNSF Railways, and Norfolk Southern. Public safety campaigns from a variety of organizations, such as See Tracks? Think Train! Week from Operation Lifesaver Inc. (OLI) and those from International Level Crossing Awareness Day (ILCAD), educate communities about responsible behavior near tracks. These efforts combined hope to make rail and grade crossings safer for everyone.

Railroads are crucial to America's transportation system, but face serious challenges at highway-rail grade crossings, where safety risks and logistical inefficiencies persist. With more than 2,000 incidents annually and growing pressure from increased freight and urban development, the rail industry and government are investing in solutions. Programs like the Rail Crossing Elimination Grant and Section 130 aim to close dangerous crossings, install safety features, and upgrade infrastructure. Public-private initiatives such as CREATE in Chicago and awareness campaigns support safety and efficiency

goals. Rail advocates are pushing for increased and sustained funding for these programs in the Surface Transportation Reauthorization bill and federal support for public-private partnerships and public safety campaigns.

Together, these efforts reflect a strong national commitment to making rail systems safer and more resilient. Grade crossing safety is a bipartisan, achievable goal that saves lives, supports freight mobility, and builds trust in infrastructure investment.

## Links to Other Resources

- American Association of Railroads – Highway-Rail Grade Crossings Safety
- American Association of Railroads – Freight Rail: Pedestrians & Driver Safety
- CREATE – CREATE Overview
- Department of Transportation – Federal Highway Administration: Key Grant Programs
- Department of Transportation – FRA Safety Data
- Federal Railroad Administration – Highway-Rail Grade Crossings Overview
- Federal Railroad Administration – Highway-Rail Grade Crossings Safety
- Federal Railroad Administration – Freight Rail Overview
- SSI – Intermodal Freight Update - Tracking Volume Growth
- Stanford University – History of American Railroads
- U.S. Senate Committee on Commerce, Science, and Transportation – Railroad Crossing Congestion and Its Impacts on Safety and Efficiency