



SAFETY BULLETIN

FEDERAL TRANSIT ADMINISTRATION

SB 19-03

November 12, 2019

Safety Considerations Associated with Rail Transit Grade Crossings

Purpose

This Safety Bulletin (SB 19-03) outlines safety considerations associated with rail transit grade crossings.

Background

FTA analyzes rail transit grade crossing data collected from annual State Safety Oversight Agency (SSOA) reporting. Grade crossings are locations where a roadway and a rail right-of-way intersect, including street intersections where rail transit is running at street level.

Transit rail grade crossing fatalities are on the rise, increasing almost eight percent per year. In 2015, 22 fatalities resulted from rail grade crossings—the highest count in the past eight years. These trends are described in more detail in FTA’s latest [Rail Safety Data Report](#), which covers safety data from 2007 through 2015.

Federal Actions Taken

- **Public Transportation Agency Safety Plan (PTASP):** FTA is assisting the transit industry with implementation of the PTASP regulation, published on July 19, 2018. The PTASP regulation requires certain operators of public transportation systems that receive federal funds to develop Agency Safety Plans (ASPs) that include the processes and procedures necessary for implementing Safety Management Systems (SMS). SMS focuses on proactive safety risk management (e.g., identified transit grade crossing issues), strong safety communication between workers and management, targeted safety



training, and organization-wide safety management policy, including clear accountabilities and responsibilities for critical safety activities. Transit operators must certify they have a safety plan in place meeting the requirements of the rule by July 20, 2020.

- **Operation Lifesaver Grants:** FTA partners with Operation Lifesaver, Inc. (OLI) to provide funding to develop and disseminate rail safety training and education materials. Since 2003, FTA has provided OLI \$2,054,500 in grant funding for over 25 rail transit safety awareness campaigns to support reducing collisions, fatalities, and injuries at rail grade crossings, and trespassing near tracks.
- **Safety Research:** FTA has funded the following safety research studies related to preventing grade crossing fatalities:
 - FTA sponsors research under the [Transit Cooperative Research Program \(TCRP\)](#), an applied research program that develops near-term, practical solutions to problems facing public transportation. TCRP is providing \$250,000 in competitive funding to research Strategies for Deterring Trespassing on Rail Transit and Commuter Rail Rights-of-Way. This research aims to review the breadth of current trespasser mitigation strategies research; catalog the wide variety of current approaches to preventing trespassing on the rights-of-way; analyze the different trespasser mitigation strategies to ascertain overall outcomes and effectiveness; and document best practices and make recommendations.
 - FTA sponsors Innovations Deserving Exploratory Analysis—the Transit IDEA Program. In 2011, FTA funded a Transit IDEA project to develop and test an intelligent Light Rail Transit/Street Grade Safety System that can be used by Light Rail Transit Systems. The project investigated and developed a solution that improves and provides active, adaptive, and alert recording of crossing incidents for the approaching Light Rail Vehicle, operator, and pedestrian, motorist, and/or worker at the crossing. The project concluded in 2014 and the final report is available on the [TRB Transit IDEA Program web page](#).
- **“Stop. Trains Can’t.” Campaign:** The U.S. Department of Transportation’s (DOT) Federal Railroad Administration (FRA) and National Highway Traffic Safety Administration (NHTSA) launched a national railroad crossing safety campaign to increase public awareness around railroad tracks and reduce crossing deaths and injuries. This is the latest in a three-year, focused effort to reverse the uptick in railroad grade crossing fatalities. The [DOT campaign website](#) provides more information and outreach materials available for use by rail transit agencies.



Data Analysis

Between 2007 and 2015 (inclusive), SSOAs—which oversee safety of rail transit agencies (RTAs)—were required to report all collisions at grade crossings through the SSO Rail Event Database. During this nine-year period, SSOAs reported 4,606 rail grade crossing (RGX) collisions, resulting in 113 fatalities and 2,286 injuries. Almost half (49 percent) of SSOA-reported events were RGX collisions. These collisions resulted in nine percent of all SSOA-reported fatalities and 39 percent of SSOA-reported injuries.

From 2011 to 2015 (inclusive), 98 percent of reported RGX collisions were between trains and either pedestrians or bicyclists or non-rail motor vehicles (Note, SSOAs did not distinguish by collision type prior to reporting year 2011). Nearly all RGX collision fatalities (97 percent) and injuries (97 percent) during this five-year period resulted from these types of collisions.

Managing Risk

RTAs may explore ways to capture, track, and analyze rail transit grade crossing incidents, and use the information from their SMS processes to monitor the effectiveness of grade crossing mitigation strategies. RTAs also may evaluate existing grade crossing safety risks and mitigation strategies while developing their ASPs. RTAs may consider available rail transit research to identify potential countermeasures to implement and evaluate their impact. Additionally, RTAs can utilize the grade crossing information and outreach materials available on the *Stop. Trains Can't.* campaign web page or apply for OLI funding to support training and outreach on this safety issue.

Additional Resources

- [Operation Lifesaver Passenger Rail Safety](#)
- [Manual on Uniform Traffic Control Devices for Streets and Highways](#)
- [Railroad-Highway Grade Crossing Handbook - Revised Second Edition August 2007](#)
- [Railroad Crossing Safety & Trespass Prevention](#)
- [TCRP Report 69: Light Rail Service: Pedestrian and Vehicular Safety](#)
- [TCRP Synthesis 79: Light Rail Vehicle Collisions with Vehicles at Signalized Intersections](#)
- **American Public Transportation Association (APTA) Rail Grade Crossing**
 - [Rail Transit Grade Crossing Warning Device Inspection Testing and Maintenance](#)
 - [Rail Transit Grade Crossing Public Education](#)
 - [Rail Transit Grade Crossing Safety Assessment](#)
 - [Rail Transit Grade Crossing Warning System Design Criteria Installation and Operation](#)

