

A Landmark Effort To Create a 21st Century Toolbox For Highway-Rail Safety

Guidance of Traffic Control Devices at Highway-Rail Grade Crossings was written by the Department of Transportation's (DOT's) Highway-Rail Crossing Technical Working Group (TWG). The TWG is led by representatives of the following DOT agencies:

- Federal Highway Administration
- Federal Railroad Administration
- Federal Transit Administration
- National Highway Traffic Safety Administration

The TWG is a landmark effort to enhance coordination among highway agencies, railroad companies and authorities, and government agencies involved with the development and implementation of policies, rules and regulations governing rail and highway travel.

Information in guidebook is intended to assist engineers in selecting among the many options for improving traffic safety at highway-rail intersections. Federal requirements for selection of traffic control devices are governed by the MUTCD. The guidebook is a guidance document only and is intended as a helpful supplement to the MUTCD.

Guidance on Traffic Control Devices at Highway-Rail Grade Crossings is available on the web at <http://safety.fhwa.dot.gov/media/twgreport.htm>

For more information contact:

Debra (Dee) Chappell
Federal Highway Administration
Office of Safety Design
(202) 366-0087
debra.chappell@fhwa.dot.gov



U.S. Department of Transportation



Reduce Railroad Crossing Collisions

**Guidance for Selection
of Traffic Control Devices
At Highway-Rail Grade
Crossings**

Appropriate Use of Traffic Control Devices Can Save Lives, Reduce Incidents

In 2002, incidents at public highway-rail crossings in the United States caused 311 deaths and 859 injuries. As traffic congestion increases, advanced traffic control technologies for highway-rail crossings can help reduce back-ups and make highway travel safer.

Guidance for Engineers on Device Selection

“*Guidance on Traffic Control Devices at Highway-Rail Grade Crossings*,” a report by the U.S. Department of Transportation (DOT) with input from the Highway-Rail Grade Crossing Technical Working Group (TWG), helps engineers assess driver needs, specify appropriate passive and active traffic control devices and systems, and evaluate potential roadway design improvements. Some key points:

- **Signs** — Signs required or permitted by the Manual on Uniform Traffic Control Devices (MUTCD) are discussed. A table provides guidance on when the optional signs are applicable.
- **Active Traffic Control Devices** — Standard devices — such as flashing-light signals and automatic gates, and supplemental

Incidents at highway-rail intersections have declined significantly—from 4,465 in 1992, to 2,694 in 2002. But the death and injury toll is still too high.

devices—such as active advance warning signs with flashers, are discussed.

- **Preemption / Interconnection** — Situations where preemption/interconnection is required or should be considered to mitigate intersection back-ups are discussed.

- **Pre-signals** — Pre-signals are operated as part of the highway intersection traffic signal system, but their displays are integrated into the railroad preemption program. When to implement the use of pre-signals is discussed.

- **Median Separation** — Restricting driver access to opposing lanes helps reduce crossing gate violations.

- **Train Detection Systems** — Train detection systems need to provide a minimum of 20

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seconds of warning time. Factors to consider before increasing warning time are listed.

- **Pedestrian and Bicycle Safety** — Fencing, swing gates, pedestrian barriers, pavement markings, and other ideas for improving pedestrian and bicycle safety are discussed.
- **Crossing Closure** — Unneeded crossings should be eliminated. Factors to consider when making the closure decision are discussed.
- **Grade Separation** — Life cycle cost analysis rather than initial construction costs should govern decisions on separate grading. Factors to be analyzed are discussed.

Pre-signal Location at Automatic Gate Crossing



Pre-signals are designed to prevent a line of vehicles forming at the highway-highway intersection that would back up on to the railroad tracks.