

Train Horns at Grade Crossings Fact Sheet

BACKGROUND

In June 2005, the Federal Railroad Administration (FRA) issued laws governing the use of train horns at grade crossings throughout the United States. These laws, included in the Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings, state that a train crew must sound the locomotive's horn when approaching a grade crossing. This practice has been common for many years, and was required internally by railroads prior to the federal law. However, communities were looking for ways to reduce the noise associated with the horns and the FRA stepped in to develop an overall policy. In addition to requiring that train horns must be sounded, the FRA Rule now provides a nationally consistent methodology for establishing, maintaining, and enforcing "Quiet Zones". Quiet Zones are segments of railroad lines where train crews are exempt from sounding the horn at grade crossings. It should be noted that train crews are still permitted to sound the horn within a Quiet Zone for railroad-related reasons or for safety reasons. For more information, refer to the FRA's Quiet Zone website at www.fra.dot.gov/us/content/1318

DEFINITIONS

Municipality – Under the train horn rule, the public agency with authority over the roadway that crosses the tracks must apply for the quiet zone. Under this definition, cities, counties, and special districts with roadway authority could apply for quiet zones within Colorado. In cases where roads within the quiet zone are managed by different authorities, the affected agencies must collaborate and choose a lead agency to apply for the quiet zone.

Supplemental Safety Measure (SSM) - a measure intended to improve grade crossing safety when train horns are not sounded and that is defined as effective in the FRA rule.

Alternate Safety Measure (ASM) – a measure intended to improve grade crossing safety (when train horns are not sounded) that does not fall under the FRA definition of an SSM. ASMs are subject to FRA review and analysis as to effectiveness.

SUPPLEMENTAL SAFETY MEASURES

- Four Quadrant Gate System;
- Gates with Medians;
- Gates with Channelization;
- One Way Street with Gate(s);
- Close (permanently) Railroad Crossing;
- Close (temporarily) Railroad Crossing.

Wayside Horn – A horn mounted along the roadway at a grade crossing used to replace the train horn.

Power Out Indicator – A wayside device that notifies an approaching train crew whether or not the active warning system at a grade crossing has appropriate power.

Constant Warning Time Circuitry – Railroad signal system elements that use a train’s approach speed to determine when it will reach a grade crossing, and then start the crossing gate cycle a specified time before the train reaches the crossing.

Dual Gates – Crossing gates provided along the approaches to the railroad crossing (often one in each direction, or two total).

Quad Gates – Crossing gates provided along the approaches to and departures from the railroad crossing (often one on each side of the tracks in each direction, or four total).

Electric Multiple Unit (EMU) – a commuter rail technology that uses overhead electric systems to power self-contained electric railcars.

Diesel Multiple Unit (DMU) – a commuter rail technology that uses a diesel engine to power self-contained railcars.



Wayside horn and sign at crossing in Roseville, CA



Wayside horn at crossing adjacent to New Jersey Transit Commuter Rail station



Four quadrant gates at a crossing in Illinois

APPLICABILITY

The new train horn rule generally applies to railroads operating as part of the nation’s general railroad system of transportation. This includes freight railroads across the U.S., Amtrak, and transit systems (typically commuter rail) that fall under FRA oversight. It typically does not include heavy rail systems (subways) or light rail (LRT) systems that operate outside of freight rail corridors. Although the title of the

rule refers to locomotives, it applies to any vehicles operating on the national system, including locomotive-hauled coaches, EMUs and DMUs.

IMPLEMENTATION

Under the FRA Rule, a municipality wishing to implement a Quiet Zone needs to:

- Define the group of crossings to be included in the Quiet Zone. The crossings must be adjacent, and at least a ½ mile segment of railroad must be included.
- Review and evaluate existing conditions at the crossings within the segment. This includes updating the FRA's grade crossing inventory for each crossing.
- All crossings within the Quiet Zone must be improved to certain baseline criteria, generally including flashing lights and gates; power out indicators; constant warning time circuitry; and audible warning for pedestrians.
- Based on the existing condition evaluation and implementation of the baseline requirements, a Risk Index is calculated, both with and without the train horns at the crossings.
- The municipality must then develop an enhancement plan that improves the Risk Index without train horns back to the level of the Risk Index with train horns.
 - o The FRA has defined a group of improvements that can be used to improve the Risk Index called Supplemental Safety Measures (SSMs). If these are used to reach the Risk Index with train horns, the application can be submitted and the Quiet Zone can be established (assuming FRA approval).
 - o If the community does not wish to use SSMs, Alternate Safety Measures (ASM) are available, which also improve the Risk Index. A community can also propose modified SSMs to help improve the Risk Index. If ASMs or modified SSMs are specified in the Quiet Zone application, any resulting approval will be conditional. A Quiet Zone resulting from this process will be subject to annual FRA review.
 - o Grade crossing modifications (SSMs, modified SSMs, or ASMs) are subject to approval by the Colorado Public Utilities Commission and the owning railroad.
- Once FRA approval of the Quiet Zone has been obtained, the community must implement the identified safety measures before the Quiet Zone can be put into place. There is currently no Federal funding for Quiet Zone improvements, so communities must be ready to pay for their safety measures in order to obtain a Quiet Zone. Costs for quiet zone improvements vary widely depending on the measures

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used and existing conditions at the crossings. Typical improvements can cost between \$200,000 and \$300,000, meaning a 4- to 8-crossing quiet zone can cost \$1 to \$2 million.

- The FRA reserves the right to remove the Quiet Zone if safety conditions deteriorate after installation.

COLORADO QUIET ZONES

There are currently no Quiet Zones in Colorado. Three Front Range communities are working with the FRA to evaluate Quiet Zones, and one mountain community has prepared and then withdrawn an application. Quiet Zones are most common in the midwestern and eastern states, including Minnesota, Wisconsin, Massachusetts, and Maine.