



# What is a Quiet Zone?

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A quiet zone is a section of a rail line that contains one or more consecutive public crossings at which locomotive horns are not routinely sounded.

## Why has the FRA issued the Train Horn Rule?

- To require trains to sound a locomotive horn at public grade crossings
- To permit the creation of Quiet Zones
- To promote quality of life without compromising safety

## FRA Final Rule

- Issued 4/27/05
- Rule becomes effective 6/24/05
- Requires horns to be sounded to warn motorists at public crossings
- Provides exceptions where risk is minimized
- Enables communities to establish quiet zones by reducing the risk caused by lack of horns

## Changes in Train Horn Requirements

- Requires the sounding of locomotive horns when approaching every public crossing (replacing state law)
- The horn shall be sounded no greater than ¼ mile from the crossing and at least 15 seconds, but no more than 20 seconds, prior to the train entering the crossing.
- Sec. 229.129 defines minimum and maximum train horn decibel levels (96dB-110dB)

## Who Can Establish a Quiet Zone?

- Public authority with jurisdiction for the roadway at the crossing
- If the Quiet Zone includes more than one public authority, all agencies must agree and actions must be taken jointly
- Quiet Zones may be established irrespective of state law

## How are Quiet Zones Created?

Local governments will have two ways of creating a quiet zone:

- Show that the lack of the horn does not pose a significant safety risk
- Implement safety measures such as SSMs or wayside horns to reduce excess risk associated with no horn

## Four Types of Quiet Zones

- Pre-Rule Quiet Zones:  
Areas without train horns on October 9, 1996 and on December 18, 2003
- Intermediate Quiet Zones:  
Areas without train horns after October 9, 1996 and before December 18, 2003
- New Quiet Zones:  
Quiet Zones that do not qualify as Pre-Rule or Intermediate Quiet Zones
- Partial Quiet Zones:  
A Quiet Zone where the train horns are not routinely sounded for a specified period of time during the evening and/or nighttime hours (10pm-7am).

## SSM - Supplemental Safety Measures

- Temporary Closures
- Four-Quadrant Gates
- Gates with Medians or Channelization Devices
- One-way Streets with Gates

## Wayside Horn

A stationary horn located at a highway-rail grade crossing, designed to provide, upon the approach of a locomotive or train, audible warning to oncoming motorists of the approach of a train.

- One-for-one substitute for the train horn
- Can be used within or outside of a QZ
- Simplest way to reduce train horn noise since a QZ is not required

## Considerations for use of Wayside Horns

- Temporary closure is not feasible
- Not enough distance to implement raised medians
- One-way street is not a viable alternative
- Cost of four-quadrant gates is prohibitive
- Cost effective for the community

## **ASM – Alternative Safety Measures**

- Non-complying SSMs
- Engineering ASMs
- Programmed Enforcement
- Public Education and Awareness
- Photo Enforcement (state law must allow)
- Effectiveness is monitored for the next two calendar quarters and every second quarter thereafter
- May be reduced to one qtr/yr after 5 years

## **Preparation for Quiet Zone Analysis**

- Verify AADTs and train counts
- Verify collision data
- Verify Crossing Warning Circuitry
- Review closure options
- Develop conceptual drawings and cost for each alternative for each crossing
- Develop matrix to analyze pros and cons of each alternative

## **Terminology**

### **Alternative Safety Measures (ASM)**

A safety system or procedure, other than an SSM, established in accordance with this part which is provided by the appropriate traffic control authority or law enforcement authority and which, after individual review and analysis by the Associate Administrator, is determined to be an effective substitute for the locomotive horn in the prevention of highway-rail casualties at specific highway-rail grade crossings.

### **Channelization Device**

A traffic separation system made up of a raised longitudinal channelizer, with vertical panels or tubular delineators attached, that is placed between opposing highway lanes designed to alert or guide traffic around an obstacle or to direct traffic in a particular direction.

### **Crossing Corridor Risk Index (CCRI)**

The number reflecting a measure of risk to the motoring public at public grade crossings along a rail corridor, calculated in accordance with the procedures in Appendix D of the FRA's Train Horn Rule document, representing the average risk at each public crossing within the corridor. This risk level is determined by averaging among all public crossings within the corridor, the product of the number of predicted collisions per year and the predicted likelihood and severity of casualties resulting from those collisions at each public crossing with the corridor.

### **Four-Quadrant Gate System**

A system of gates designed to provide a full closure of the crossing eliminating the opportunity to drive around a single lowered gate.

## **Nationwide Significant Risk Threshold (NSRT)**

The number reflecting a measure of risk, calculated on a nationwide basis, which reflects the average level of risk to the motoring public at public highway-rail grade crossings equipped with flashing lights and gates and at which locomotive horns are sounded.

### **Non-traversable Curb**

A highway curb designed to discourage a motor vehicle from leaving the roadway. Non-traversable curbs are used at locations where highway speeds do not exceed 40 miles per hour. The curbs must be at least six inches high.

### **One Way Street with Gate(s)**

Gate(s) must be installed such that all approaching highway lanes to the public highway-rail grade crossing are completely blocked.

### **Quiet Zone Risk Index (QZRI)**

The measure of risk to the motoring public which reflects the Crossing Corridor Risk Index for a Quiet Zone (if horns are presently sounded at the crossings) and reduced risk due to implementation, if any, of SSMs and ASMs within the Quiet Zone.

### **Risk Index With Horns (RIWH)**

The measure of risk to the motoring public when locomotive horns are routinely sounded at every public highway-rail grade crossing within a quiet zone.

### **Supplementary Safety Measure (SSM)**

A safety system or procedure established in accordance with this part which is provided by the appropriate traffic control authority or law enforcement authority responsible for safety at the highway-rail grade crossing, that is determined by the Associate Administrator to be an effective substitute for the locomotive horn in the prevention of highway-rail casualties. Appendix A of this part lists such SSMs.

### **Temporary Closure**

Designed to provide for a Partial Quiet Zone, required under the new FRA train horn rule, allowing train horns not to be routinely sounded during certain hours of the day (10pm-7am) by eliminating vehicular access to the crossing.

### **Wayside Horn**

A stationary horn located at a highway-rail grade crossing, designed to provide, upon the approach of a locomotive or train, audible warning to oncoming motorists of the approach of a train.

### **For More information on Quiet Zones**

please visit our website at [www.railroadcontrols.com](http://www.railroadcontrols.com) or contact us at (817) 820-6300