

by public authorities when establishing both New and continuing Pre-Rule Quiet Zones.

Section V of the Guide provides examples of quiet zone implementation.

### Section I—Overview

In order for a quiet zone to be qualified under this rule, it must be shown that the lack of the train horn does not present a significant risk with respect to loss of life or serious personal injury, or that the significant risk has been compensated for by other means. The rule provides four basic ways in which a quiet zone may be established. Creation of both New Quiet Zones and Pre-Rule Quiet Zones are based on the same general guidelines; however, there are a number of differences that will be noted in the discussion on Pre-Rule Quiet Zones.

#### A. Qualifying Conditions

One of the following four conditions or scenarios must be met in order to show that the lack of the train horn does not present a significant risk, or that the significant risk has been compensated for by other means:

1. One or more SSMs as identified in Appendix A are installed at *each* public crossing in the quiet zone; or
2. The Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold without implementation of additional safety measures at any crossings in the quiet zone; or
3. Additional safety measures are implemented at selected crossings resulting in the Quiet Zone Risk Index being reduced to a level equal to, or less than, the Nationwide Significant Risk Threshold; or
4. Additional safety measures are taken at selected crossings resulting in the Quiet Zone Risk Index being reduced to at least the level of risk that would exist if train horns were sounded at every public crossing in the quiet zone.

It is important to consider the implications of each approach before deciding which one to use. If a quiet zone is qualified based on reference to the Nationwide Significant Risk Threshold (*i.e.* the Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold—see the second and third scenarios above), then an annual review will be done by FRA to determine if the Quiet Zone Risk Index remains equal to, or less than, the Nationwide Significant Risk Threshold. Since the Nationwide Significant Risk Threshold and the Quiet Zone Risk Index may change from year to year, there is no guarantee that the quiet zone will remain qualified. The circumstances that cause the disqualification may not be subject to the control of the public authority. For example, an overall national improvement in safety at gated crossings may cause the Nationwide Significant Risk Threshold to fall. This may cause the Quiet Zone Risk Index to become greater than the Nationwide Significant Risk Threshold. If the quiet zone is no longer qualified, then the public authority will have to take additional measures, and may incur additional costs that might not have been budgeted, to once again lower the Quiet Zone Risk Index to at least the Nationwide Significant Risk Threshold in order to retain the quiet zone. Therefore, while the initial

cost to implement a quiet zone under the second or third scenario may be lower than the other options, these scenarios also carry a degree of uncertainty about the quiet zone's continued existence.

The use of the first or fourth scenarios reduces the risk level to at least the level that would exist if train horns were sounding in the quiet zone. These methods may have higher initial costs because more safety measures may be necessary in order to achieve the needed risk reduction. Despite the possibility of greater initial costs, there are several benefits to these methods. The installation of SSMs at every crossing will provide the greatest safety benefit of any of the methods that may be used to initiate a quiet zone. With both of these methods (first and fourth scenarios), the public authority will never need to be concerned about the Nationwide Significant Risk Threshold, annual reviews of the Quiet Zone Risk Index, or failing to be qualified because the Quiet Zone Risk Index is higher than the Nationwide Significant Risk Threshold. Public authorities are strongly encouraged to carefully consider both the pros and cons of all of the methods and to choose the method that will best meet the needs of its citizens by providing a safer and quieter community.

For the purposes of this Guide, the term "Risk Index with Horns" is used to represent the level of risk that would exist if train horns were sounded at every public crossing in the proposed quiet zone. If a public authority decides that it would like to fully compensate for the lack of a train horn and not install SSMs at each public crossing in the quiet zone, it must reduce the Quiet Zone Risk Index to a level that is equal to, or less than, the Risk Index with Horns. The Risk Index with Horns is similar to the Nationwide Significant Risk Threshold in that both are targets that must be reached in order to establish a quiet zone under the rule. Quiet zones that are established by reducing the Quiet Zone Risk Index to at least the level of the Nationwide Significant Risk Threshold will be reviewed annually by FRA to determine if it still qualifies under the rule to retain the quiet zone. Quiet zones that are established by reducing the Quiet Zone Risk Index to at least the level of the Risk Index with Horns will not be subject to annual reviews.

The use of FRA's web-based Quiet Zone Calculator is recommended to aid in the decision making process (<http://www.fra.dot.gov/Content3.asp?P=1337>). The Quiet Zone Calculator will allow the public authority to consider a variety of options in determining which SSMs make the most sense. It will also perform the necessary calculations used to determine the existing risk level and whether enough risk has been mitigated in order to create a quiet zone under this rule.

#### B. Risk Reduction Methods

FRA has established two general methods to reduce risk in order to have a quiet zone qualify under this rule. The method chosen impacts the manner in which the quiet zone is implemented.

1. *Public Authority Designation (SSMs)*—The Public Authority Designation method

(§ 222.39(a)) involves the use of SSMs (*see* appendix A) at some or all crossings within the quiet zone. The use of only SSMs to reduce risk will allow a public authority to designate a quiet zone without approval from FRA. If the public authority installs SSM's at every crossing within the quiet zone, it need not demonstrate that they will reduce the risk sufficiently in order to qualify under the rule since FRA has already assessed the ability of the SSMs to reduce risk. However, if only SSMs are installed within the quiet zone, but not at every crossing, the public authority must calculate that sufficient risk reduction will be accomplished by the SSMs. Once the improvements are made, the public authority must make the required notifications, and the quiet zone may be implemented. FRA does not need to approve the plan as it has already assessed the ability of the SSMs to reduce risk.

2. *Public Authority Application to FRA (ASMs)*—The Public Authority Application to FRA method (§ 222.39(b)) involves the use of ASMs (*see* appendix B). ASMs include both modified SSMs that do not fully comply with the provisions found in Appendix A (*e.g.* shorter than required traffic channelization devices), and non-engineering ASMs such as programmed law enforcement. If the use of ASMs (or a combination of ASMs, SSMs, and modified SSMs) is elected to reduce risk, then the public authority must apply to FRA for approval of the quiet zone. The application must contain sufficient data and analysis to confirm that the proposed ASMs do indeed provide the necessary risk reduction. FRA will review the application and will issue a formal approval if it determines that risk is reduced to a level that is necessary in order to comply with the rule. Once FRA approval has been received and the safety measures fully implemented, the public authority would then proceed to make the necessary notifications, and the quiet zone may be implemented. The use of non-engineering ASMs will require continued monitoring and analysis throughout the existence of the quiet zone to ensure that risk continues to be reduced.

3. *Calculating Risk Reduction*—The following should be noted when calculating risk reductions in association with the establishment of a quiet zone. This information pertains to both New Quiet Zones and Pre-Rule Quiet Zones and to the Public Authority Designation and Public Authority Application to FRA methods.

*Crossing closures:* If any public crossing within the quiet zone is proposed to be closed, include that crossing when calculating the Risk Index with Horns. Do *not* include the crossing to be closed when calculating the Quiet Zone Risk Index since the crossing will no longer exist. This will reflect the fact that the risk associated with the crossing has been eliminated entirely. However, be sure to increase the traffic counts at other crossings within the quiet zone and recalculate the risk indices for those crossings that will handle the traffic diverted from the closed crossing.

*Example:* A proposed New Quiet Zone contains four crossings: A, B, C and D streets. A, B and D streets are equipped with flashing lights and gates. C Street is a passive