

crossbuck crossing with a traffic count of 400 vehicles per day. It is decided that C Street will be closed as part of the project. Compute the risk indices for all four streets. The calculation for C Street will utilize flashing lights and gates as the warning device. Calculate the Crossing Corridor Risk Index by averaging the risk indices for all four of the crossings. This value will also be the Risk Index with Horns since train horns are currently being sounded. To calculate the Quiet Zone Risk Index, first re-calculate the risk indices for B and D streets by increasing the traffic count for each crossing by 200. (Assume for this example that the public authority decided that the traffic from C Street would be equally divided between B and D streets.) Increase the risk indices for A, B and D streets by 66.8 percent and average the results. This is the initial Quiet Zone Risk Index and accounts for the risk reduction caused by closing C Street.

**Grade Separation:** Grade separated crossings that were in existence before the creation of a quiet zone are not included in any of the calculations. However, any public crossings within the quiet zone that are proposed to be treated by grade separation should be treated in the same manner as crossing closures as explained above. Highway traffic that may be diverted from other crossings within the quiet zone to the new grade separated crossing should be considered when computing the Quiet Zone Risk Index.

**Example:** A proposed New Quiet Zone contains four crossings: A, B, C and D streets. All streets are equipped with flashing lights and gates. C Street is a busy crossing with a traffic count of 25,000 vehicles per day. It is decided that C Street will be grade separated as part of the project. Compute the risk indices for all four streets. Calculate the Crossing Corridor Risk Index, which will also be the Risk Index with Horns, by averaging the risk indices for all four of the crossings. To calculate the Quiet Zone Risk Index, first re-calculate the risk indices for B and D streets by decreasing the traffic count for each crossing by 1,200. (The public authority decided that 2,400 motorists will decide to use the grade separation at C Street in order to avoid possible delays caused by passing trains.) Increase the risk indices for A, B and D streets by 66.8 percent and average the results. This is the initial Quiet Zone Risk Index and accounts for the risk reduction caused by the grade separation at C Street.

**Wayside Horns:** Crossings with wayside horn installations will be treated as a one for one substitute for the train horn and are not to be included when calculating the Crossing Corridor Risk Index, the Risk Index with Horns or the Quiet Zone Risk Index.

**Example:** A proposed New Quiet Zone contains four crossings: A, B, C and D streets. All streets are equipped with flashing lights and gates. It is decided that C Street will have a wayside horn installed. Compute the risk indices for A, B and D streets. Since C Street is being treated with a wayside horn, it is not included in the calculation of risk. Calculate the Crossing Corridor Risk Index by averaging the risk indices for A, B and D streets. This value is also the Risk Index with

Horns. Increase the risk indices for A, B and D streets by 66.8 percent and average the results. This is the initial Quiet Zone Risk Index for the proposed quiet zone.

## Section II—New Quiet Zones

FRA has established several approaches that may be taken in order to establish a New Quiet Zone under this rule. Please see the preceding discussions on “Qualifying Conditions” and “Risk Reduction Methods” to assist in the decision-making process on which approach to take. This following discussion provides the steps necessary to establish New Quiet Zones and includes both the Public Authority Designation and Public Authority Application to FRA methods. It must be remembered that in a New Quiet Zone all public crossings must be equipped with flashing lights and gates.

### A. Requirements for Both Public Authority Designation and Public Authority Application

The following steps are necessary when establishing a New Quiet Zone. This information pertains to both the Public Authority Designation and Public Authority Application to FRA methods.

1. Determine all public and private at-grade crossings that will be included within the quiet zone. Also determine any existing grade-separated crossings that fall within the quiet zone. Each crossing must be identified by the US DOT Crossing Inventory number and street or highway name. If a crossing does not have a US DOT crossing number, then contact FRA’s Office of Safety (202–493–6299) for assistance.

2. Ensure that the quiet zone will be at least one-half mile in length. (§ 222.35(a)(1))

3. A complete and accurate Grade Crossing Inventory Form must be on file with FRA for all crossings (public and private) within the quiet zone. These must be dated within six months prior to the designation of the quiet zone. An inspection of each crossing in the proposed quiet should be performed and the Grade Crossing Inventory Forms updated to reflect the current conditions at each crossing.

4. Every public crossing within the quiet zone must be equipped with active warning devices comprising both flashing lights and gates. The warning devices must be equipped with power out indicators. Constant warning time circuitry is also required unless existing conditions would prevent the proper operation of the constant warning time circuitry. The plans for the quiet zone may be made assuming that flashing lights and gates are at all public crossings; however the quiet zone may not be implemented until all public crossings are actually equipped with the flashing lights and gates. (§ 222.35(b)(1))

5. Private crossings must have cross-bucks and “STOP” signs on both approaches to the crossing. Private crossings with public access, industrial or commercial use must have a diagnostic team review and be treated according to the team’s recommendations. (§§ 222.25(b) and (c))

6. Each highway approach to every public and private crossing must have an advanced warning sign (in accordance with the MUTCD) that advises motorists that train

horns are not sounded at the crossing. (§ 222.35(c)(1) and 222.25(c)(2))

### B. New Quiet Zones—Public Authority Designation

Once again it should be remembered that all public crossings must be equipped with automatic warning devices consisting of flashing lights and gates in accordance with § 222.35(b). In addition, one of the following conditions must be met in order for a public authority to designate a new quiet zone without FRA approval:

- One or more SSMs as identified in Appendix A are installed at *each* public crossing in the quiet zone (§ 222.39(a)(1)); or
- The Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold without SSMs installed at any crossings in the quiet zone (§ 222.39(a)(2)(i)); or

- SSMS’s are installed 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 (§ 222.39(a)(2)(ii)); or
- SSMS’s are installed at selected crossings resulting in the Quiet Zone Risk Index being reduced to a level of risk that would exist if the horn were sounded at every crossing in the quiet zone (*i.e.* the Risk Index with Horns) (§ 222.39(a)(3)).

Steps necessary to establish a New Quiet Zone using the Public Authority Application to FRA method:

1. If one or more SSMs as identified in appendix A are installed at each public crossing in the quiet zone, the requirements for a public authority designation quiet zone have been met. It is not necessary for the same SSM to be used at each crossing. Once the necessary improvements have been installed, notifications may take place and the quiet zone implemented in accordance with the rule. If SSMs are not installed at each crossing, proceed on to Step 2 and use the risk reduction method.

2. To begin, calculate the risk index for each public crossing within the quiet zone (See appendix D. FRA’s web-based Quiet Zone Calculator may be used to do this calculation). If flashing lights and gates have to be installed at any public crossings, calculate the risk indices for such crossings as if lights and gates were installed. (**Note:** Flashing lights and gates must be installed prior to initiation of the quiet zone.) If the Inventory record does not reflect the actual conditions at the crossing, be sure to use the conditions that currently exist when calculating the risk index. Note: Private crossings are not included when computing the risk for the proposed quiet zone.

3. The Crossing Corridor Risk Index is then calculated by averaging the risk index for each public crossing within the proposed quiet zone. Since train horns are routinely being sounded for crossings in the proposed quiet zone, this value is also the Risk Index with Horns.

4. In order to calculate the initial Quiet Zone Risk Index, first adjust the risk index at each public crossing to account for the increased risk due to the absence of the train horn. The absence of the horn is reflected by an increased risk index of 66.8 percent at