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**Part II**

## **Department of Transportation**

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**Federal Railroad Administration**

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**49 CFR Parts 222 and 229**

**Use of Locomotive Horns at Highway-Rail  
Grade Crossings; Final Rule**

**DEPARTMENT OF TRANSPORTATION****Federal Railroad Administration****49 CFR Parts 222 and 229**

[Docket No. FRA-1999-6439, Notice No. 16]

RIN 2130-AA71

**Use of Locomotive Horns at Highway-Rail Grade Crossings**

**AGENCY:** Federal Railroad Administration (FRA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** On December 18, 2003, FRA published an interim final rule that required that the locomotive horn be sounded while trains approach and enter public highway-rail grade crossings. The interim final rule contained an exception to the above requirement in circumstances in which there is not a significant risk of loss of life or serious personal injury, use of the locomotive horn is impractical, or safety measures fully compensate for the absence of the warning provided by the locomotive horn. Communities that qualify for this exception may create "quiet zones" within which locomotive horns would not be routinely sounded. The final rule issued today amends certain provisions of the interim final rule to facilitate the development of quiet zones, while balancing the needs of railroads, States and local communities.

**DATES:** The effective date is June 24, 2005. However, public authorities may begin to provide quiet zone-related documentation to FRA and other parties 30 days after April 27, 2005. This final rule supercedes the interim final rule, which was published on December 18, 2003. Therefore, the interim final rule will not take effect.

**FURTHER INFORMATION CONTACT:** Ron Ries, Office of Safety, FRA, 1120 Vermont Avenue, NW., Washington, DC 20590 (telephone: 202-493-6299); or Kathryn Shelton, Office of Chief Counsel, FRA, 1120 Vermont Avenue, NW., Washington, DC 20590 (telephone: 202-493-6038).

**SUPPLEMENTARY INFORMATION:****1. Background**

On January 13, 2000, FRA published a Notice of Proposed Rulemaking (NPRM) in the *Federal Register* (65 FR 2230) addressing the use of locomotive horns at public highway-rail grade crossings. This rulemaking was mandated by Public Law 103-440, which added section 20153 to title 49 of the United States Code. The statute

requires the Secretary of Transportation (whose authority in this area has been delegated to the Federal Railroad Administrator under 49 CFR 1.49) to issue regulations that require the use of locomotive horns at public grade crossings, but gives the Secretary the authority to make reasonable exceptions.

In accordance with the Administrative Procedure Act (5 U.S.C. 553), FRA solicited written comments from the public. By the close of the comment period on May 26, 2000, approximately 3,000 comments had been filed with this agency regarding the NPRM and the associated Draft Environmental Impact Statement. As is FRA's practice, FRA held the public docket open for late filed comments and considered them to the extent possible.

Due to the substantial and wide-ranging public interest in the NPRM, FRA conducted a series of public hearings throughout the United States in which local citizens, local and State officials, Congressmen, and Senators provided testimony. Twelve hearings were held (Washington, DC; Fort Lauderdale, Florida; Pendleton, Oregon; San Bernadino, California; Chicago, Illinois (four hearings were held in the greater Chicago area); Berea, Ohio; South Bend, Indiana; Salem, Massachusetts; and Madison, Wisconsin) at which more than 350 people testified.

On December 18, 2003, FRA published an Interim Final Rule in the *Federal Register* (68 FR 70586). Even though FRA could have proceeded directly to the final rule stage, FRA chose to issue an interim final rule in order to give the public an opportunity to comment on changes that had been made to the rule. FRA also held a public hearing in Washington, DC on February 4, 2004. By the close of the extended comment period, over 1,400 comments had been filed with the agency regarding the Interim Final Rule. As is FRA's practice, FRA held the public docket open for late-filed comments and considered them to the extent possible. In order to avoid imposing inconsistent regulatory standards for quiet zone creation and establishment, FRA extended the effective date of the Interim Final Rule on November 22, 2004 (69 FR 67858) and on March 18, 2005 (70 FR 13117) so that the Interim Final Rule would not take effect before the Final Rule was issued.

**2. Statutory Mandate**

On November 2, 1994, Congress passed Public Law 103-440 ("Act") which added section 20153 to title 49 of the United States Code ("title 49").

Subsections (l) and (j) were added on October 9, 1996 when section 20153 was amended by Public Law 104-264. The Act requires the use of locomotive horns at public grade crossings, but gives FRA the authority to make reasonable exceptions.

Section 20153 of title 49 states as follows:

"Section 20153. Audible warning at highway-rail grade crossings.

(a) Definitions.—As used in this section—  
(1) the term "highway-rail grade crossing" includes any street or highway crossing over a line of railroad at grade;

(2) the term "locomotive horn" refers to a train-borne audible warning device meeting standards specified by the Secretary of Transportation; and

(3) the term "supplementary safety measure" (SSM) refers to a safety system or procedure, 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 Secretary to be an effective substitute for the locomotive horn in the prevention of highway-rail casualties. A traffic control arrangement that prevents careless movement over the crossing (e.g., as where adequate median barriers prevent movement around crossing gates extending over the full width of the lanes in the particular direction of travel), and that conforms to the standards prescribed by the Secretary under this subsection, shall be deemed to constitute an SSM. The following do not, individually or in combination, constitute SSMs within the meaning of this subsection: standard traffic control devices or arrangements such as reflectorized crossbucks, stop signs, flashing lights, flashing lights with gates that do not completely block travel over the line of railroad, or traffic signals.

(b) Requirement.—The Secretary of Transportation shall prescribe regulations requiring that a locomotive horn shall be sounded while each train is approaching and entering upon each public highway-rail grade crossing.

(c) Exception.—(1) In issuing such regulations, the Secretary may except from the requirement to sound the locomotive horn any categories of rail operations or categories of highway-rail grade crossings (by train speed or other factors specified by regulation)—

(A) that the Secretary determines not to present a significant risk with respect to loss of life or serious personal injury;

(B) for which use of the locomotive horn as a warning measure is impractical; or

(C) for which, in the judgment of the Secretary, SSMs fully compensate for the absence of the warning provided by the locomotive horn.

(2) In order to provide for safety and the quiet of communities affected by train operations, the Secretary may specify in such regulations that any SSMs must be applied to all highway-rail grade crossings within a specified distance along a railroad in order to be excepted from the requirement of this section.

(d) Application for Waiver or Exemption.—Notwithstanding any other provision of this subchapter, the Secretary may not entertain an application for waiver or exemption of the regulations issued under this section unless such application shall have been submitted jointly by the railroad carrier owning, or controlling operations over, the crossing and by the appropriate traffic control authority or law enforcement authority. The Secretary shall not grant any such application unless, in the judgment of the Secretary, the application demonstrates that the safety of highway users will not be diminished.

(e) Development of Supplementary Safety Measures.—(1) In order to promote the quiet of communities affected by rail operations and the development of innovative safety measures at highway-rail grade crossings, the Secretary may, in connection with demonstration of proposed new SSMs, order railroad carriers operating over one or more crossings to cease temporarily the sounding of locomotive horns at such crossings. Any such measures shall have been subject to testing and evaluation and deemed necessary by the Secretary prior to actual use in lieu of the locomotive horn.

(2) The Secretary may include in regulations issued under this subsection special procedures for approval of new SSMs meeting the requirements of subsection (c)(1) of this section following successful demonstration of those measures.

(f) Specific Rules.—The Secretary may, by regulation, provide that the following crossings over railroad lines shall be subject, in whole or in part, to the regulations required under this section:

- (1) Private highway-rail grade crossings.
- (2) Pedestrian crossings.

(3) Crossings utilized primarily by nonmotorized vehicles and other special vehicles.

(g) Issuance.—The Secretary shall issue regulations required by this section pertaining to categories of highway-rail grade crossings that in the judgment of the Secretary pose the greatest safety hazard to rail and highway users not later than 24 months following the date of enactment of this section. The Secretary shall issue regulations pertaining to any other categories of crossings not later than 48 months following the date of enactment of this section.

(h) Impact of Regulations.—The Secretary shall include in regulations prescribed under this section a concise statement of the impact of such regulations with respect to the operation of section 20106 of this title (national uniformity of regulation).

(i) Regulations.—In issuing regulations under this section, the Secretary—

(1) shall take into account the interest of communities that—

(A) have in effect restrictions on the sounding of a locomotive horn at highway-rail grade crossings; or

(B) have not been subject to the routine (as defined by the Secretary) sounding of a locomotive horn at highway-rail grade crossings;

(2) shall work in partnership with affected communities to provide technical assistance and shall provide a reasonable amount of

time for local communities to install SSMs, taking into account local safety initiatives (such as public awareness initiatives and highway-rail grade crossing traffic law enforcement programs) subject to such terms and conditions as the Secretary deems necessary, to protect public safety; and

(3) may waive (in whole or in part) any requirement of this section (other than a requirement of this subsection or subsection (j)) that is not likely to contribute significantly to public safety.

(j) Effective Date of Regulations.—Any regulations under this section shall not take effect before the 365th day following the date of publication of the final rule.”

This final rule complies with the statutory mandate contained within section 20153 of title 49. The final rule retains the locomotive horn sounding requirement for trains that approach and enter public highway-rail grade crossings. (See rule § 222.21.) However, the rule contains exceptions for certain categories of rail operations and highway-rail grade crossings, in accordance with 49 U.S.C. 20153(c)(1). Section 222.33 of the rule provides that a railroad operating over a public highway-rail grade crossing may, at its discretion, choose not to sound the locomotive horn if the locomotive speed is 15 miles per hour or less and the train crew or appropriately equipped flaggers provide warning to motorists. FRA has determined that these limited types of rail operations do not present a significant risk of loss of life or serious personal injury. The rule also contains an exception for highway-rail grade crossing corridors that are equipped with SSMs at each public highway-rail grade crossing, in accordance with 49 U.S.C. 20143(c).

Highway-rail grade crossing corridors that have a Quiet Zone Risk Index at or below the Nationwide Significant Risk Threshold or the Risk Index With Horns have been deemed, by the Administrator, to constitute a category of highway-rail grade crossings that do not present a significant risk with respect to loss of life or serious personal injury or that fully compensate for the absence of the warning provided by the locomotive horn. Therefore, communities with grade crossing corridors that meet either of these standards may silence the locomotive horn within the crossing corridor, if all other applicable quiet zone requirements have been met. (See § 222.39.)

Section 20153(i) of title 49 requires FRA to “take into account the interest of communities that have in effect restrictions on the sounding of a locomotive horn at highway-rail grade crossings”. FRA has complied with this requirement in several ways. The rule

allows Pre-Rule Quiet Zone communities to continue to silence the locomotive horn, without any additional safety improvements, if the Quiet Zone Risk Index is at, or below, *two times* the Nationwide Significant Risk Threshold and there have not been any relevant collisions within the quiet zone during the five years preceding April 27, 2005. (See § 222.41.) It should also be noted that Pre-Rule Quiet Zone communities can continue to silence the locomotive horn, without any additional safety improvements, if SSMs have been implemented at every public grade crossing within the quiet zone or if the Quiet Zone Risk Index is at, or below, the Nationwide Significant Risk Threshold.) Additionally, the rule allows Pre-Rule Quiet Zone communities to take additional time (up to eight years from the effective date of the interim final rule) within which to implement safety improvements that will bring them into compliance with the requirements of the rule. This “grace period” has been included in the rule in order to comply with 49 U.S.C. 20153(i)(2), which requires FRA to provide “a reasonable amount of time for [pre-existing whistle ban] communities to install SSMs”.

Section 20153(d) of title 49 states that “\* \* \* the Secretary may not entertain an application for waiver or exemption of the regulations issued under this section unless such application shall have been submitted jointly by the railroad carrier owning, or controlling operations over, the crossing and by the appropriate traffic control authority or law enforcement authority.” Therefore, § 222.15, which governs the process for obtaining a waiver from the requirements of the rule, requires joint filing of waiver petitions by the railroad and public authority.

Section 222.55 addresses the manner in which new SSMs and ASMs are demonstrated and approved for use. Paragraph (c) of this section, which reflects the requirements contained within 49 U.S.C. 20153(e), specifically provides that the Associate Administrator may order railroad carriers operating over a crossing or crossings to temporarily cease sounding the locomotive horn at the crossing(s) to demonstrate proposed new SSMs and ASMs that have been subject to prior testing and evaluation.

Section 20153(f) of title 49 explicitly gives discretion to the Secretary as to whether private highway-rail grade crossings, pedestrian crossings, and crossings utilized primarily by nonmotorized and other special vehicles should be subject this regulation. FRA has decided to refrain from exercising

jurisdiction over crossings utilized primarily by nonmotorized and other special vehicles in this final rule. FRA has, however, exercised its jurisdiction, in a limited manner, over private grade and pedestrian crossings. Locomotive horn use at private grade and pedestrian crossings will be subject to the requirements of this rule, if the private grade or pedestrian crossing is located within a quiet zone. Sections 222.25 and 222.27 address the specific requirements that pertain to private grade and pedestrian crossings within quiet zones.

Section 222.7 contains a concise statement of the rule's impact with respect to 49 U.S.C. 20106 (national uniformity of regulation). This statement of the rule's effect on State and local law, which was required by 49 U.S.C. 20153(h), provides that the rule, when effective, will preempt most State and local laws that govern locomotive horn use at public highway-rail grade crossings. However, as stated in section 222.7(b), the rule will not preempt State and local laws governing locomotive horn use at Chicago Region highway-rail grade crossings where railroads were excused from sounding the locomotive horn by the Illinois Commerce Commission, and where railroads did not sound the horn, as of December 18, 2003. In addition, State and local laws that govern routine locomotive horn use at private grade and pedestrian crossings outside quiet zones will not be preempted.

Lastly, this rule complies with the statutory one-year delay requirement. Section 20153(j) of title 49 prohibits any regulations issued under its authority from becoming effective before the 365th day following the date of publication of the final rule. On December 18, 2003, FRA published the interim final rule on the use of locomotive horn at highway-rail grade crossings. Because the interim final rule had the same force and effect as a final rule, FRA delayed the effective date of the interim final rule for one year, in order to comply with 49 U.S.C. 20153(j) and to give public authorities sufficient time to prepare for quiet zone implementation before the rule's locomotive horn sounding requirements took effect. After reviewing approximately 1,400 comments on the interim final rule, FRA is now issuing a final rule that grants additional relief to States and local communities. The final rule will become effective on June 24, 2005 because the one-year statutory delay requirement was satisfied by delaying the effective date of the interim final rule.

### 3. Liability

FRA received a number of comments on the liability implications of the rule. The majority of these comments were concerned that the interim final rule would shift liability onto the public authority that creates a quiet zone. For example, Steve Stricker, Village Administrator for Burr Ridge, Illinois and Chairperson of the DuPage Mayors and Managers Conference, expressed concern at a February 2004 meeting about the potential municipal liability that may result from quiet zone creation. Mr. Stricker urged FRA to include a clear statement in the final rule that it will not change any federal or state laws or court decisions on municipal liability. Similar sentiments were expressed by John Kravcik, President of Western Springs, Illinois. The Village of Cornwall-on-Hudson, New York submitted comments expressing concern that by not addressing the liability of local communities that create quiet zones, the interim final rule shifted traditional railroad liability away from the party profiting from the use of the tracks and onto local governments. The City of Sacramento, California submitted comments suggesting that the rule be revised to state that quiet zone establishment cannot be used as the basis of a claim against a local government, provided the local government established the quiet zone in accordance with the provisions of the rule. Noting that the interim final rule exempts railroads from liability, the Village of Hinsdale, Illinois recommended that the final rule provide a similar exemption for public authorities or, in the alternative, state that the existing liability structure will not change. Along the same lines, Brian Krajewski, Mayor of Downers Grove, Illinois asserted that the rule needs to acknowledge in no uncertain terms that it is not intended to alter, in any way, the liabilities of any party covered by it. The City of Placentia, California submitted comments suggesting that the rule be revised to specify that it is intended to provide protection from liability for silencing the train horn to public authorities, as well as the railroad and train crew.

This final rule clearly covers the subject matter of locomotive horn sounding at public grade crossings, as well as locomotive horn sounding at private and pedestrian grade crossings that are located within a quiet zone. Therefore, with the exception of State and local laws governing locomotive horn sounding at the highway-rail grade crossings described in section 222.3(c), this final rule preempts all State and

local laws that govern the sounding of locomotive horns at grade crossings located within duly established quiet zones. As stated in the interim final rule, FRA does not expect that future lawsuits will not arise over accidents within quiet zones, as such lawsuits may be due to factors other than the lack of an audible warning. However, this final rule is intended to remove failure to sound the horn, failure to require horn sounding, and prohibitions on sounding of the horn, at grade crossings located within duly established quiet zones, as potential causes of action. We expect that courts, following *Norfolk Southern v. Shanklin*, 529 U.S. 344 (2000) and *CSX v. Easterwood*, 507 U.S. 658 (1993), will conclude that this regulation substantially subsumes the subject matter of locomotive horn sounding at highway-rail grade crossings, as well as at private grade and pedestrian crossings that are located within a quiet zone. As a result, a federal standard of care defined by this rule will replace the standard of care that would otherwise apply at highway-rail grade crossings in each State, with the exception of those highway-rail grade crossings described in section 222.3(c). (Since the rule does not apply to the highway-rail grade crossings described in section 222.3(c), the standard of care required under State law will continue to apply at those crossings.) Local governments and railroads will benefit equally from the federal standard of care.

States also have the ability to assert sovereign immunity on behalf of local units of government within their borders, and many states have done so. It is not appropriate for the Federal government to unnecessarily disturb decisions States have made about whether local governments in their State should be immune from tort liability and FRA will not do so here.

FRA also received comments from local communities who expressed concern that railroads would require them to enter into indemnification agreements, as a prerequisite to the installation of additional safety measures at grade crossings that are located within a proposed quiet zone. The City of Arlington, Texas submitted comments stating that railroads may require municipalities to enter into indemnification agreements, if the rule is not revised to address municipal liability for quiet zone establishment. Therefore, the City of Arlington, Texas suggested that the rule be revised to prohibit railroads from requiring indemnification and hold harmless agreements as a condition of quiet zone creation. The DuPage Mayors and

Managers Conference also submitted comments recommending that the rule be revised to prohibit railroads from requiring a transfer of liability as a "quid pro quo" for safety improvement installation. The Village of Wilmette, Illinois submitted comments asserting that, with respect to SSMs, the rail carriers may require municipalities to agree to whatever terms they demand concerning liability. The West Central Municipal Conference and the Chicago Area Transportation Study submitted comments recommending that the final rule include language that prohibits railroads from requiring waivers of municipal immunity as part of any agreement, contract, or lease between railroads and municipalities.

On the other hand, FRA received comments from the railroad industry suggesting that the rule be revised to require public authorities to enter into indemnification agreements with railroads. The Fort Worth & Western Railroad, New Orleans & Gulf Coast Railroad, and the Idaho Northern & Pacific Railroad submitted comments recommending that the final rule require local communities to assume any increased liability that would result from quiet zone creation. The Fort Worth & Western Railroad submitted additional comments asserting that public authorities that establish a quiet zone should provide funding for any increase in railroad liability insurance premiums that may result from railroad operations within quiet zones. Caltrain submitted comments asserting that the sponsoring public authority should be required to indemnify railroads and hold them harmless from claims that arise within the quiet zone.

FRA has refrained from adding language to the final rule that would expressly prohibit the railroad industry from requiring public authorities to enter into indemnification and hold harmless agreements, as a condition of obtaining railroad consent to the installation of grade crossing safety improvements within proposed quiet zones. The provisions contained within, as well as the overall legality of, indemnification and hold harmless agreements between railroads and local communities are largely governed by State contract law and FRA has been given no general charge to adjust these interests.

In fact, FRA is not persuaded that railroads will, in most cases, enjoy significant power that could be used inappropriately in this context. State and local governments retain authority to determine appropriate traffic control devices and roadway improvements at highway-rail grade crossings. In a

number of cases, State agencies will be able to order installation of automated warning systems, such as four-quadrant gates, even on county and local roadways. Use of channelization techniques may require little or no cooperation from the railroad and, in many cases, photo enforcement can likely be accomplished using existing interconnections between crossing warning systems and traffic signals.

Further, in this context, railroads often can provide a unique perspective related to crossing improvements. For particular applications, railroads may be able to point out important public and private benefits from employing basic traffic channelization in lieu of more technically complex and maintenance-hungry four-quadrant gate systems.

#### 4. Partial Quiet Zones

Commenters requested clarification of the rule's effect on crossings at which horns are silenced for a portion of the day (typically during nighttime hours). The final rule thus addresses the continuation and establishment of such "partial quiet zones."

Under the final rule, communities with Pre-Rule Partial Quiet Zones (see § 222.9 for the complete definition of "Pre-Rule Partial Quiet Zones") must comply with Pre-Rule Quiet Zone standards, in order to continue existing restrictions on the use of the locomotive horn. However, Pre-Rule Partial Quiet Zones that do not qualify for automatic approval under § 222.41(a) will be given additional time within which to come into compliance, provided the public authority complies with the requirements set forth in §§ 222.41(b) and 222.43. Communities that wish to convert their pre-existing partial whistle bans into 24-hour quiet zones will, however, be required to comply with New Quiet Zone standards. (Please refer to the Section-by-Section Analysis of § 222.41 for further information about Pre-Rule Partial Quiet Zone requirements.)

Communities that had partial whistle bans in place as of December 18, 2003 (the interim final rule publication date), but after October 9, 1996, may qualify for Intermediate Partial Quiet Zone status. (Please refer to § 222.9 for a definition of Intermediate Partial Quiet Zones.) Intermediate Partial Quiet Zones may continue existing restrictions on the use of the locomotive horn for one year. However, Intermediate Partial Quiet Zones must comply with New Quiet Zone standards by the end of the one-year grace period, in order to prevent the resumption of routine locomotive horn sounding at public grade crossings within the former quiet

zone. (Please refer to the Section-by-Section Analysis of § 222.42 for further information about Intermediate Partial Quiet Zone requirements.)

Communities that wish to create a New Partial Quiet Zone will be required to comply with New Quiet Zone standards. Unless a waiver is granted, all New Partial Quiet Zones must restrict locomotive horn sounding between the hours of 10 p.m. and 7 a.m. This requirement will ensure consistent application of locomotive horn restrictions within New Partial Quiet Zones, which should minimize confusion for the locomotive engineer.

#### 5. Rule Changes

This brief overview of the changes that have been made in the Final Rule is provided for the reader's convenience. Because this section merely provides an overview, it should not be relied upon for a comprehensive discussion of all final rule changes. Indeed, this full document should be read together with the previous documents issued in the proceeding. Inasmuch as the Interim Final Rule and Notice of Proposed Rulemaking contained extensive discussion of both the background of the issues involved in this rulemaking and the rationale behind decisions relating to those issues, FRA emphasizes that this Final Rule should be read in conjunction with the Interim Final Rule and Notice of Proposed Rulemaking. Unless the positions and rationale expressed in those documents have explicitly changed in the subsequent rulemaking documents, the reader should understand that those positions and rationale remain those of FRA.

##### *Summary of Changes to the Interim Final Rule*

- The final rule clarifies FRA's position that it is not intended to preempt administrative procedures required under State law regarding grade crossing warning system modifications and installations. (See § 222.7 for more information.)
- Surface-mounted tubular delineators have been removed from the list of approved Supplementary Safety Measures (SSMs). Tubular delineators may only be used as SSMs under the final rule if they have been affixed to raised longitudinal channelizers. (See appendix A for more information.)
- The final rule provides a one-year grace period to comply with New Quiet Zone standards for communities with pre-existing whistle bans that were in effect on December 18, 2003, but were adopted after October 9, 1996. These communities are considered

“Intermediate” Quiet Zones under the final rule. (See § 222.42 for more information.)

- The final rule addresses quiet zones that prohibit sounding of horns during a portion of the day. These are referred to as Partial Quiet Zones.

- The final rule requires diagnostic team reviews of pedestrian crossings that are located within proposed New Quiet Zones and New Partial Quiet Zones. (See § 222.27 for more information.)

- The final rule requires quiet zone communities to retain automatic bells at public highway-rail grade crossings that are subject to pedestrian traffic. (See § 222.35(d) for more information.)

- The definition of “public authority” has been revised under the final rule to include only those public entities who are responsible for traffic control and law enforcement at public highway-rail grade crossings. (See § 222.9 for more information.)

- The final rule extends “recognized State agency” status to State agencies who wish to participate in the quiet zone development process. (See § 222.17 for more information.)

- The final rule contains a 60-day comment period on quiet zone applications. (See § 222.39(b) for more information.)

- The final rule requires public authorities to provide notification of their intent to create a New Quiet Zone. During the 60-day period after the Notice of Intent is mailed, comments may be submitted to the public authority. (See § 222.43(b) for more information.)

- The final rule provides quiet zone risk reduction credit for certain pre-existing SSMs. (See appendix A for more information.)

- The final rule provides quiet zone risk reduction credit for pre-existing modified SSMs. (See appendix B for more information.)

- The final rule contains a new category of ASMs that addresses engineering improvements other than modified SSMs. (See appendix B for more information.)

- The minimum sound level for wayside horns has been reduced to 92 dB(A). (See appendix E for more information.)

## 6. E.O. 15 Status

Emergency Order 15, issued in 1991, requires the Florida East Coast Railway Company to sound locomotive horns at all public grade crossings. The Emergency Order preempted State and local laws that permitted nighttime bans on the use of locomotive horns. Amendments to the Order did, however,

permit establishment of quiet zones if supplementary safety measures were implemented at every crossing within a proposed quiet zone. The supplementary safety measures specified in the Order, although similar, are not the same as those contained in this final rule. FRA recognizes that the SSMs, and the conditions on their implementation contained in this rule, provide communities substantially greater flexibility in creating quiet zones than those in the Order.

Therefore, the provisions of this final rule will apply to all grade crossings within the State of Florida when E.O. 15 is rescinded. FRA conducted a public conference on April 15, 2005, and solicited comments on the appropriate excess risk estimate that should be applied when routine use of the locomotive horn is prohibited at highway-rail grade crossings that are currently subject to E.O. 15. FRA intends to amend the final rule to specifically address this issue, after considering comments and testimony provided at the public conference from interested parties.

## 7. Chicago Regional Issues

The six-county Chicago Region is host to the largest rail terminal in the United States, and it accounts for the biggest concentration of “whistle bans” and associated casualties in the nation. Chicago communities and industries have grown up with, and around this extensive rail network, while the entire Chicago metropolitan area has benefitted from an extensive commuter rail system established by the State and funded by the State, region, and Federal government. As stated in the interim final rule, the unique aspects of locomotive horn sounding at public grade crossings within the Chicago Region have contributed to the need for different treatment for those crossings that have been subject to pre-existing whistle bans.

### *Excess Risk Estimate for Gated Crossings Subject to Existing Whistle Bans in the Chicago Region*

In the interim final rule, FRA explained at some length why the agency had decided to apply an excess risk estimate of 17.3% to Chicago Region gated crossings. We noted that Chicago Region no-whistle gated crossings have a statistical profile that is distinctly different from gated whistle ban crossings in the rest of the Nation. We explained that analysis conducted for FRA by a statistical firm, Westat, Inc., arrived at the 17.3% excess risk estimate for gated crossings in contrast to a national excess risk figure of 66.8%,

but that the estimate for the Chicago Region was not statistically significant at conventional levels. We further noted qualitative reasons why the lower estimate appeared to make sense (e.g., discretionary selection by railroads of crossings subject to no-whistle policies, high train counts supporting strong motorist expectations concerning the presence of a train, Metra’s emphasis on locomotive conspicuity measures). Commenters on the interim final rule have continued to question FRA’s position on this issue. Commenters outside the Chicago area seek the benefit of their own regional estimates (which are not achievable given the smaller number of relatively homogenous crossings available for analysis), and commenters from Chicago claim that the lower estimate is too high (and should be set at 0%, requiring no safety offset for loss of the train horn as an auditory warning to the motorist).

In response to the IFR, the Village of Arlington Heights, City of Chicago, Northwest Municipal Conference, Metropolitan Mayors Caucus, and the Chicago Area Transportation Study (“Chicago Region commenters”) submitted a study by TransInfo LLC and the University of Illinois at Chicago (“TransInfo-UIC study”), which concluded that “\* \* \* there is no reason to believe that in northeastern Illinois, banning the sounding of horns increases the chance of collisions at gated highway-rail crossings.” The TransInfo-UIC study noted that the 17.3% excess risk estimate was not statistically significant at conventional levels. Given this lack of significance, the TransInfo-UIC study asserted “\* \* \* one must then accept the hypothesis of no difference in the effects of a ban on horn soundings \* \* \*” Using the same data set as FRA’s contractor, Westat, Inc., TransInfo LLC and the University of Illinois at Chicago developed alternative statistical models. Their seemingly preferred model produced a –26.4% effectiveness rate (compared to +17.3% from the Westat model) that was statistically significant at the conventional 5% level. TransInfo-UIC also raised questions about possible collinearity in the Westat model.

FRA provided the TransInfo/UIC study to its contractor, Westat, for analysis. While acknowledging that its estimate lacks statistical significance at conventional levels (a point made explicitly by Westat in reporting its 2003 findings), Westat indicated that this does not mean that one must accept the hypothesis of no difference in collision rates between horn and no-horn crossings. Westat noted that “[i]n a statistical study, *absence of evidence*

against a hypothesis is not conclusive evidence for the hypothesis. \* \* \* The hypothesis may be true, or false, in the absence of evidence against it, we simply do not know.” After reviewing the TransInfo-UIC seemingly preferred model, Westat found that it has biased residuals and that it systematically underpredicts collisions for the Chicago area ban crossings.

In 2004, Westat developed a model that tested the sensitivity of the Westat 2003 model which was used to develop the interim final rule. This 2004 model supports earlier findings and the FRA conclusion that collision rates at gated crossings where train horns are not routinely sounded in the Chicago area are higher than at gated crossings in the rest of the nation (except Florida) where horns are routinely sounded.

Westat compared the TransInfo-UIC, Westat 2003, and Westat 2004 models and found that the two Westat models are superior for estimating the effect of train horns at gated crossings in Chicago. Both Westat models fit the data better and avoid the biased residuals found in the TransInfo-UIC model. Since there is some evidence of numerical instability in the Westat 2004 model, Westat prefers the Westat 2003 model. Westat also tested the Westat 2003 model for collinearity and found that (1) since approximately 76 percent of the effect of the no-horn parameter was independent of the other model parameters, there was no confirmation of collinearity, (2) although there was evidence of some possible collinearity among some of the parameters, there was no such evidence pertaining to the no-horn parameter, and (3) the test statistic for assessing an adverse effect of collinearity for the no-horn parameter was well below the threshold for collinearity, therefore collinearity did not pose a serious threat to estimated effectiveness of train horns. As a result, Westat concluded that its 2003 model provided the best representation of excess risk among the models applied. FRA analysts agreed that the TransInfo-UIC model did not perform suitably to explain crossing risk in the region. Westat further concluded that the sample size for the Chicago area is not large enough to derive consistent statistical results across different statistical models.

Detailed comments by Chicago jurisdictions further questioned the interim final rule’s statistical basis. For example, the Metropolitan Mayors Caucus, acting in concert with the City of Chicago and the Chicago Area Transportation Study (CATS), stated that, “The FRA’s data quality and model use is inappropriate for setting policy.”

The Mayors Caucus filing (FRA–1999–6439–3770) called attention to direction provided in February 2002 by the Office of Management and Budget to develop and implement data quality standards. The commenters specifically questioned the quality of the National Highway-Rail Crossing Inventory, which is maintained by FRA on behalf of States, railroads and other users. The Inventory was used to generate risk estimates for use in the Westat and TransInfo-UIC studies.<sup>1</sup>

FRA recognizes that, in a voluntarily-populated database that provides information for over 149,000 public at-grade crossings, there are individual errors. For instance, in conducting additional review of Chicago Region crossings equipped with flashing lights only, FRA recently determined that several of them have been upgraded by the addition of gates. State authorities and railroads apparently had not reported the improvements to FRA’s contractor. This is the typical type of problem encountered when a significant minority of records are simply out of date.

The commenters suggest that FRA “correct the data” before undertaking further analysis. FRA meets regularly with railroads and with State agencies responsible for highway-rail crossing safety. FRA strongly encourages submissions from these parties, which typically have more recent data available for their own purposes. The U.S. Department of Transportation has four times sent legislation to the Congress that would have made regular updating of the inventory mandatory on both the State agencies (which are generally recipients of substantial Federal-aid highway funds) and the railroads. The first such legislation was transmitted on July 26, 1999. The Congress has not taken final action on this legislation, although a virtually identical provision was included in S. 1402, the Federal Railroad Safety Improvement Act, which passed the Senate on November 25, 2003, but failed of final passage with the adjournment of the 108th Congress in December of 2004. Short of mandatory reporting, FRA has no practical means of re-creating the national inventory in a manner acceptable to Chicago Region commenters in this proceeding.

<sup>1</sup>This criticism was repeated in an October 5, 2004, letter from the CATS Council of Mayors Executive Committee to the Department of Transportation’s Inspector General and in a January 26, 2005, letter from eleven Members of Congress from Illinois to the Director, Office of Management and Budget. These documents are filed in the public docket of this proceeding as Document nos. FRA–1999–6439–3918 and FRA–1999–6439–3922, respectively.

FRA is required by law to issue a final rule requiring use of the train horn. The agency is not required to provide exceptions to use of the train horn, except to the extent that it is useful to take into consideration the interests of communities with pre-existing bans. Nevertheless, FRA has aggressively sought from the beginning of this effort—including before enactment of any requirement to consider the interests of pre-rule ban communities—to craft suitable exceptions. Providing for quiet zones is a goal embraced by virtually all commenters in this proceeding, and in order to do it fairly and effectively, FRA must utilize the best data available.

FRA has proceeded with development of this rulemaking with the belief, founded on daily use of Inventory information for a variety of purposes, that while some of the data are older than would be desired, there are not patterns in the inventory that would create biased results as between train horn crossings and whistle ban crossings or in any regional analysis. In making their data quality argument, the Chicago Region commenters do not allege specific bias or suggest a reason why there could be such a bias. If FRA cannot rely upon the Inventory data for purposes of this rulemaking, then FRA would lack a rational basis for permitting any exceptions to the statutory command that train horns sound at highway-rail grade crossings. Nevertheless, FRA agrees that, when dealing with a comparative safety performance difference as small as the one at issue for gated crossings in the Chicago Region, and given the poor results for statistical significance and model fit for the various approaches, it is wise to explore whether there may be any differences in the characteristics of the Inventory data that might inadvertently introduce bias into the analysis.

FRA had noted during the 10-year pendency of this rulemaking that much of the data for the Chicago area and the balance of Illinois was badly out of date. FRA encouraged the State to update the information, and the State did make a major effort to update average annual daily traffic in 2003. Because of the study period (1997 through 2001) and the methodology used for retrieval of inventory information, however, most of this updated information was not utilized in the Westat or TransInfo-UIC analysis (*i.e.*, the updates occurred late in the study period or after its close). (The updated information has been used in generating corridor risk estimates and is accessed by the quiet zone web calculator.) FRA concurs that it is



prudent to inquire further into whether known data quality issues—which themselves cannot be effectively addressed by FRA without cooperation from other parties—have the potential to adversely affect the Chicago Region analysis.

Therefore, FRA will arrange for an independent peer review of its conclusion on this issue before issuing an amendment to this final rule which will address Chicago Region crossings. FRA will respond to the “peer review report” and place a copy of its response in the public docket.

Pending completion of this Chicago Region re-analysis, FRA is excepting existing Chicago Region no whistle crossings from the requirement to sound the train horn. It is FRA’s intention to leave those crossings—and those crossings alone—subject to existing Illinois State Law pending further rulemaking. Existing no-whistle excusals will stand, and railroads will remain free to sound the horn where they elect to do so (as is the case today).

In doing so, FRA notes that the most active challenge made by the Chicago authorities has to do with the 17.3% excess risk estimate for gated crossings. FRA pointed out in the interim final rule that there are an insufficient number of non-gated crossings in the region to calculate a special excess risk rate for them. Nor, in the case of many of the non-gated crossings, would all of the same considerations presented by Chicago Region commenters apply (*e.g.*, most of the non-gated crossings are on tracks used by fewer trains, some are on lines exclusively used for freight service). Nevertheless, FRA is including those non-gated crossings in the temporary exclusion provided in this final rule. The following considerations support this approach:

1. Some of the subject crossings are within logical pre-rule quiet zones comprised principally of gated crossings. It is not reasonable to ask public authorities to move forward with improvement of individual crossings outside the context of planning for the corridor. Nor would it in every case be cost effective, in comparison with a corridor approach, to do so.

2. The total risk associated with these crossings is not high. There are fewer than 10 non-gated crossings that would fall in pre-rule quiet zones requiring some form of action to compensate for absence of the train horn (based on current risk indices and relevant accidents in the past 5 years). Several of these are on lines with moderate speeds or very modest annual average daily traffic and have individual risk indices below the NSRT. The Illinois Commerce

Commission has been aggressive in adding gates at the higher-risk crossings over the past several years. There is no reason to believe that this will not continue.

3. FRA expects to conclude further data analysis regarding the Chicago Region gated crossings as soon as possible and to conclude any necessary final rule amendment as quickly thereafter as feasible, given the need for review and clearance of the amendment. Pre-rule quiet zones are expected to be brought in full conformity with this final rule within 5 to 8 years, depending upon actions taken by the State to support local communities. The further delay associated with temporarily excepting these non-gated crossings from the requirement to sound the train horn will not be significant.

FRA does not perceive any reason to conduct an entire new series of analyses for the balance of the Nation. Westat’s results for the Nation were statistically significant with good model fit. Given that whistle bans outside of the Chicago Region involve inventory records from 24 States, FRA cannot conceive any condition under which the Inventory records for whistle ban crossings would be of materially different quality (currency and accuracy) than for train horn crossings.

FRA calls attention to the fact that two important sets of data have not been effectively challenged as to their quality: Data regarding highway-rail crossing incidents (which is filed under penalty of law); and the identity of Chicago Region crossings (which has been meticulously studied and agreed upon by the Illinois Commerce Commission and FRA).

FRA further notes that there is likely no transportation safety database that is free of imperfections. Use of imperfect data is greatly to be preferred over disregarding of data. But it is important not to rely excessively on data whose characteristics are poorly understood. Chicago Region commenters in this rulemaking have challenged FRA to take another look at the data, and FRA will do so.

#### Other Regional Claims

FRA also received comments from communities in Massachusetts and Maryland requesting differential treatment under the final rule, based on the characteristics of rail operations in the Northeast. Ledyard McFadden of Beverly Farms, Massachusetts accused FRA of discriminatory implementation of the rule, given the “specific exception” accorded to the Chicago Region based on extensive and expensive statistical analysis provided

by that region. Noting that the Chicago Region was afforded “a much lower effectiveness rate than the rest of the nation,” the City of Cumberland, Maryland asserted that the discrepancy should be resolved using accurate data or the rest of the nation should also be accorded the lower excess risk estimate. Massachusetts Congressman John Tierney submitted comments asserting that a number of his constituents “perceive discriminatory implementation of the rule” based on the rule’s specific exception for the greater Chicago area. Questioning why similar analysis was not performed in the Northeast, particularly along the commuter-only rail lines of Boston’s North Shore, Congressman Tierney asserted that the rule should not be implemented until adequate regional analyses have been completed.

FRA is not able to provide for separate regional estimates of excess risk. Statistically, there are sound reasons for assigning a horn effectiveness rate to gated crossings in the Chicago area that is lower than that for gated crossings in the rest of the country. Westat estimated an effectiveness rate for gated crossings for the Chicago Region of 17.3% and an effectiveness rate for gated crossings in the rest of the nation (excluding Florida) of 66.8%. Associated with these point estimates are 95% confidence intervals.<sup>2</sup> Neither point estimate is contained in the 95% confidence interval of the other. Based on this, Westat noted “the ban effect in the Chicago area is different from the ban effect in the rest of the nation.” Had the point estimate for the Chicago Region been within the 95% confidence interval for the rest of the nation (excluding Florida), there would have been some reason to believe that the ban effect in the Chicago Region was not necessarily different from that in the rest of the nation (excluding Florida).

Westat performed a statistical analysis at FRA’s direction on no-whistle crossings in Wisconsin and the Chicago Region. These regions were selected for regional statistical analysis because (1) commenters argued that safety performance at whistle ban crossings is different than in the nation at large, (2) the statute provides a basis for addressing their concerns, and (3) they contained a sufficiently large number of no-whistle crossings that might support

<sup>2</sup> A 95% confidence interval for an estimate provides a range over which we are highly confident the true value exists. If we could sample the Chicago area and the rest of the nation many times and compute corresponding confidence intervals, the true value would be between the computed confidence intervals about 95% of the time.



comparison with national crossing data. Given the relatively low number of whistle ban crossings in Northeast Massachusetts and Maryland, FRA was not able to perform a regional statistical analysis of those crossings that would yield reliable conclusions.

It is unusual for FRA to tailor a rule to the characteristics of one or more regions of the country because of the statutory command that “[l]aws, regulations, and orders related to railroad safety \* \* \* shall be nationally uniform to the extent practicable.” 49 U.S.C. 20106. In this case, FRA is authorized by statute to treat communities with pre-existing quiet zones differently. Congress directed FRA, in issuing this rule, to “take into account the interest of communities that (A) have in effect restrictions on the sounding of a locomotive horn at highway-rail grade crossings; or (B) have not been subject to the routine \* \* \* sounding of a locomotive horn at highway-rail grade crossings.” 49 U.S.C. 20153(i)(1). FRA must, however, have a rational basis for doing so. As discussed above and elsewhere in this Final Rule and the Interim Final Rule, the Chicago region presented enough data points for FRA to rationally distinguish safety behavior at no-whistle highway-rail grade crossings in the Chicago region from those in the rest of the country. The record does not contain sufficient data for Northeast Massachusetts or Cumberland, Maryland, to enable FRA to make similar rational distinctions for them. Nor have whistle bans in Massachusetts or Maryland been subject to discretionary selection (*i.e.*, there is no reason to believe that relatively safer crossings were selected for inclusion in ban areas).

If a court should conclude that FRA lacks a rational basis for treating the Chicago region differently than the rest of the nation, the Chicago region would then be required to meet the national standard. Such a ruling would not extend the benefit of the 17.3% excess risk estimate to any other region.

FRA notes the possibility that the marginal effectiveness of the train horn might be smaller in a situation such as Northeast Massachusetts where the following conditions exist: Predominance of commuter rail service (scheduled service, shorter trains), moderate speed over crossings adjacent to stations, and absence of heavy freight service on the rail lines. However, the Massachusetts Bay Transportation Authority provides express, as well as local, service at a number of crossings proximate to station locations that present significant hazards. Although the small number of crossings and other

data points makes it impractical to derive special estimates for this region, FRA remains open to dialogue regarding circumstances in individual communities in the context of waiver proceedings.

This statutory exception (49 U.S.C. 20153(i)(1)) to the requirement for national uniformity may be seen as consistent with the policy behind the national uniformity requirement because, while it yields varying requirements for communities in different circumstances, the requirements for railroads are nationally uniform. The policy is aimed at facilitating transportation over the general system of railroad transportation by assuring that railroads face the same requirements nationwide—put another way, the railroad system cannot function efficiently if the rules for operation change across local or state jurisdictions. Railroads are required nationwide to sound the train horn at every highway-rail grade crossing except those in quiet zones. The standards for railroad operations remain the same nationwide without regard to regional variations in the standards local governments must meet in order to establish quiet zones.

As noted in the interim final rule, FRA investigated a number of options in addressing Chicago area issues. (*See* section 14 of the preamble to the interim final rule, “Chicago Regional Issues,” 68 FR 70611.) FRA noted then, and reiterates here that the option of using national averages for the entire Nation, including Chicago, would have been employed by FRA if the Chicago Regional data were not available or their use inappropriate. FRA could have rationally decided that the limited significance of the Chicago Region statistical conclusions did not require reliance on those conclusions. This would have resulted in a fully functional and appropriate final rule consistent with the Act; a rule FRA would not have hesitated issuing. However acceptable this option was, it would have necessitated according little weight to a sizable body of testimony from the Chicago Region together with statistical analysis and qualitative knowledge of the Chicago Region’s unique characteristics.

#### *Excess Risk Estimate for New Quiet Zones*

Other commenters from the Chicago Region assert that the 17.3% excess risk estimate attributed to gated crossings subject to whistle bans in the Chicago Region should be applied to all public grade crossings within the Chicago Region. Noting that gated crossings

subject to whistle bans are often located on the same rail lines as other grade crossings not subject to existing whistle bans, the Town of Riverside, Illinois and the City of Elmhurst, Illinois asserted that it was illogical to suggest that motorists consciously exhibit riskier behavior at one gated crossing over another. The Village of Northbrook, Illinois asserted that differential treatment of public crossings implies that drivers need the audible cue at some crossings, but not at others, in order to achieve the same level of safety. However, drivers in northeastern Illinois regularly cross multiple crossings and are not cognizant of which crossings are subject to whistle bans and which are not. The Village of Buffalo Grove asserted that different standards should not apply to adjacent crossings along the same rail line, while George Pradel, Mayor of Naperville, Illinois asserted that there is no difference in motorist behavior at such crossings.

FRA is not persuaded by the suggestion that the lower estimate of excess risk associated with gated no-whistle crossings in Chicago is applicable to other crossings. As FRA explained in the interim final rule, one of the most important explanatory factors supporting a reduced estimate of excess risk for gated no-whistle crossings in Chicago is discretionary selection. Railroads have determined that they should sound the horn at a clear majority of crossings in the region where the Illinois Commerce Commission excused use of the horn because of the risk that the railroads perceive at those crossings. Factors that drive such decisions may include accident history, reports of “near hits” by train crews, poor crossing geometry, poor sight distances on one or more approach, absence of active law enforcement, and other factors. It is, of course, possible that the excess risk associated with silencing the train horn at other crossings in Chicago may be less than the national average due to a variety of factors. However, FRA has no principled basis for deriving such an estimate. FRA notes that Illinois authorities have not seen fit to impose mandatory train horn bans at these additional crossings, and FRA is unwilling to do so except on the basis required of all New Quiet Zones nationwide.

#### *Chicago Region Proposed Alternate Crossing Safety Program*

The Village of Arlington Heights, City of Chicago, Northwest Municipal Conference, Metropolitan Mayors Caucus, and the Chicago Area

Transportation Study (“Chicago Region commenters”) submitted comments asserting that their whistle ban crossings should qualify for the statutory exception from the rule’s locomotive horn sounding requirements found at 49 U.S.C. 20153(c)(1)(C). This exception can be applied by FRA to those categories of highway-rail grade crossings that do not present a significant risk with respect to loss of life or serious personal injury. In support of their assertion, the Chicago Region commenters submitted a study by TransInfo LLC and the University of Illinois at Chicago (“UIC”), which concluded that “\* \* \* based on FRA data, there is no reason to believe that in the Chicago Area banning the sounding of horns increases the chance of collisions at gated public highway-rail grade crossings.”

In the alternative, the Chicago Region commenters submitted a Proposed Alternative Crossing Safety Program to FRA for consideration. Under this proposed program, FRA would delegate its authority over quiet zone development and implementation to “an appropriate State agency with railroad safety oversight responsibilities.” While FRA would monitor the effectiveness of the regional quiet zone program, the State agency would establish acceptable safety thresholds, designate quiet zone status, and enforce railroad compliance within quiet zones. For example, the Chicago Region would establish a safety threshold for quiet crossings of no more than three “relevant” collisions over a five-year period. If this threshold was ever exceeded at a quiet crossing, the State agency could immediately impose routine horn sounding at the crossing.

As stated above, FRA provided the TransInfo/UIC study to its contractor, Westat, Inc., a nationally respected statistical research firm, for analysis. After reviewing the study, Westat concluded that the model used by TransInfo/UIC produced biased estimates. Westat also concluded that its original model, which estimated a 17.3% risk increase at whistle ban crossings in the Chicago Region, constituted the best estimate of excess risk available. Given this increase in risk, FRA has not, as of this date, applied the statutory exception to whistle ban crossings in the Chicago Region. However, FRA has excepted pre-rule no-whistle crossings in the Region from the requirement to sound the train horn pending further analysis.

In addition, FRA has not adopted the Proposed Alternative Crossing Safety Program. FRA cannot delegate its statutory authority to prescribe

requirements for quiet zone development and implementation in the wholesale manner recommended by the Chicago Region commenters. FRA also finds the proposed safety threshold of no more than three “relevant” (as defined by the commenters) collisions over a five-year period to be inadequate, particularly in light of the fact that the Program would exclude collisions in which the driver intentionally drives around or under activated gates from the definition of “relevant collision.” Aggressive motorist behavior is part of the risk that this rule seeks to counter. It is simply not the case that a motorist who would drive around or under a gate cannot be deterred. Absent suicidal behavior (suicides are not included in FRA safety data), motorists can often be persuaded by a warning that is urgent and clearly associated with the imminent arrival of the train at the crossing. To the extent that State policy overlooks this fact, it fails to address the full range of risk addressed by this rulemaking.

Nonetheless, within the framework of a uniform national policy, State agencies can make substantial contributions to the successful implementation of quiet zones. In response to comments, FRA has added a new provision to the final rule that provides a greater role for State agencies in the quiet zone development process. This provision will allow State agencies to submit applications for “recognized State agency” status, under which the agency can choose to participate as a partner throughout the quiet zone development process. FRA envisions that “recognized State agencies” could serve as clearinghouses for proposed quiet zones, by coordinating the quiet zone development process, designating crossings that are eligible for Pre-Rule Quiet Zone and Intermediate Quiet Zone status, and/or participating in diagnostic team reviews of crossings. Therefore, FRA encourages State agencies who, like the Illinois Commerce Commission, would like to take a proactive role in the quiet zone development process to submit applications for “recognized State agency” status.

#### Section-by-Section Analysis

##### *Section 222.1 What Is the Purpose of This Regulation?*

This section was not revised in the final rule. Noting that the interim final rule already addressed private crossings, the AAR submitted comments recommending the revision of this section to state that the purpose of this rule is to provide for safety at highway-

rail grade crossings and pedestrian crossings. However, the final rule addresses private and pedestrian crossings to the extent that they are located within quiet zones. Given the limited number of private and pedestrian crossings affected by the rule, FRA has not expanded the scope of this section.

##### *Section 222.3 What Areas Does This Regulation Cover?*

Paragraph (a) of this section has not been revised. A new paragraph (b) has been added to this section. In the course of drafting any rule, and especially when drafting a rule of this complexity and one involving a number of sometimes competing interests, FRA makes a number of difficult decisions. In doing so, FRA makes every attempt to construe and implement statutory requirements appropriately. Accordingly, paragraph (b) has been added to this section to expressly indicate the intent of FRA that the provisions of this part are separate and severable from one another. If any provision is stayed or determined to be invalid, it is the intent of FRA that the remaining provisions shall continue in effect.

Due to the uncertainty associated with the excess risk estimate of silencing the locomotive horn at highway-rail grade crossings in the Chicago Region where horn sounding was excused by the Illinois Commerce Commission and where railroads have implemented no-whistle policies, paragraph (c) has been added to exclude those highway-rail grade crossings from the scope of the final rule pending completion of the Chicago Region data re-analysis discussed in “Chicago Regional Issues” (Supplementary Information, section 7).

##### *Section 222.5 What Railroads Does This Regulation Apply To?*

This section describes the railroads to which this regulation applies. The regulation applies to every railroad with a number of listed exceptions. The regulation does not apply to (1) railroads exclusively operating freight trains only on track which is not part of the general railroad system of transportation; (2) passenger railroads that operate only on track which is not part of the general railroad system of transportation and that operate at a maximum speed of 15 miles per hour over public grade crossings; and (3) rapid transit operations within an urban area that are not connected to the general railroad system of transportation.

Paragraph (a) of this section was not revised in the final rule. However,

paragraph (b) of this section was revised in response to comments received from the Association of Railway Museums. Noting that the interim final rule would require tourist and excursion railroads to limit their operating speeds to 15 miles per hour over all railroad trackage, the Association of Railway Museums recommended that the rule be revised to exclude passenger railroads that operate on track which is not part of the general railroad system of transportation and that operate at a maximum speed of 15 mph over public grade crossings. The Association of Railway Museums asserted that precedent for this recommendation could be found in 49 CFR 229.125, which requires operative auxiliary lights on each lead locomotive operating at a speed greater than 20 mph over public grade crossings. After considering these comments, FRA determined that passenger operations that operate on track which is not part of the general railroad system of transportation could be exempted from the rule's locomotive horn sounding requirements, provided these operations are limited to 15 mph over public highway-rail grade and pedestrian crossings. Therefore, FRA has revised paragraph (b) accordingly.

Paragraph (c) of this section has not been revised. The California Public Utilities Commission ("California PUC") submitted comments asserting that the rule should be revised to exclude rapid transit operations that share highway-rail grade crossings with conventional operations but do not share trackage. In its comments, the California PUC noted that rapid transit operations exhibit different risk patterns and hazards than conventional rail operations. For instance, rapid transit operations feature shorter consist lengths, different overall visibility profiles, and greater braking abilities. If the rule is applied to rapid transit operations that share highway-rail grade crossings with conventional operations, rapid transit operations would be required to sound the horn more frequently at crossings and to use a much louder horn than is being currently used. FRA notes that § 229.129 continues to exclude all rapid transit operations from the audible warning sound level requirements. Therefore, rapid transit operations that share highway-rail grade crossings with conventional operations will not be required to use louder horns to provide an audible warning at public highway-rail grade crossings. However, rapid transit operations that share highway-rail grade crossings with conventional operations must file a waiver under § 222.15 to obtain relief from the

application of Part 222. FRA may then grant relief, depending on the underlying circumstances of each case.

New Jersey Transit Corporation ("NJ Transit") also submitted comments requesting clarification of the rule's applicability to light rail systems that operate on the general railroad system pursuant to an FRA-approved Temporal Separation Plan. NJ Transit urged FRA to exempt these light rail operations from the application of the rule based on the distinct nature of light rail equipment (*i.e.*, light rail vehicles weigh less than conventional rail equipment and have superior stopping capabilities).

FRA also received comments from individuals in Riverton, New Jersey who requested that the rule be revised to exempt light rail operations from the scope of the rule. Mark Schneider submitted comments requesting that the final rule be revised to exclude the light rail operation in the historic town of Riverton, New Jersey, which, he states, is one of five light rail operations in the nation that can "stop on a dime." Catherine Wheelhouse, owner of the Thomas Margaret Fine Art Gallery, submitted comments asserting that light rail operations should be evaluated under a different set of criteria because these operations consist of slower moving vehicles that provide a very large area of visibility for the operator.

Given the unique characteristics of individual light rail operations and the fact that freight operations over shared crossings will generally sound the horn (creating motorist expectations that should be considered in planning for safety), FRA has not provided an exemption for all light rail operations in the final rule. However, FRA would be willing to consider any waivers filed under § 222.15, for relief from the requirements of this part, on a case-by-case basis. These requests can be considered within existing "shared use" dockets and after consultation with the Federal Transit Administration and State Safety Oversight agencies.

The Town of Manchester-by-the-Sea, Massachusetts also submitted comments recommending that the exemption set forth in paragraph (c) be expanded to cover commuter rail service. Noting that its commuter rail service consists of short passenger trains, generally not longer than seven or eight cars, the Town of Manchester-by-the-Sea asserted that motorists are not tempted to "beat" the train to the crossing and are willing to wait for it to travel through the crossing. The Town of Manchester-by-the-Sea also drew similarities between commuter rail service and rapid transit operations, as both types of rail service

operate in densely populated areas. FRA has not, however, revised paragraph (c) to cover commuter rail service.

Commuter rail service, unlike rapid transit operations, operates on the general railroad system of transportation, often over the same trackage over which freight railroads operate. In addition, the equipment used in commuter rail service carries substantial weight which, in turn, requires significant stopping distances. Even though the commuter rail service in Manchester-by-the-Sea may entirely consist of short passenger trains, the longer stopping distances associated with conventional commuter rail operations necessitate advance warning of their impending arrival at grade crossings, absent additional safety measures that mitigate existing risk.

#### *Section 222.7 What Is This Regulation's Effect on State and Local Laws and Ordinances?*

This section contains a statement of FRA's intent regarding the preemptive effect of this final rule. While the presence or absence of such a section does not conclusively establish the preemptive effect of a final rule, it provides information to the public about the statutory provisions that govern the preemptive effect of the rule and FRA's position on this issue.

Paragraph (a) has been revised in the final rule to provide clarification as to the preemptive effect of the rule on State laws governing the sounding of the locomotive horn at public highway-rail grade crossings. 49 U.S.C. 20106 states that all regulations prescribed by the Secretary relating to railroad safety preempt any State law, regulation, or order covering the same subject matter, except a provision necessary to eliminate or reduce an essentially local safety hazard that is not incompatible with a Federal law, regulation, or order and that does not unreasonably burden interstate commerce. However, the highway-rail grade crossings described in § 222.3(c) are exempt from the scope of the final rule. Therefore, except as provided in paragraph (b) of this section, this final rule shall preempt any State statutory or common law, local ordinance or State or local regulatory agency rule governing locomotive horn use at public highway-rail grade crossings. As for the highway-rail grade crossings described in § 222.3(c), paragraph (b) states that the final rule will not have any preemptive effect on State laws, rules, regulations, or orders governing the sounding of the locomotive horn at those crossings. Note that this statement of non-preemptive effect applies only to those Chicago

Region highway-rail grade crossings described in § 222.3(c). Thus, it does not apply to every highway-rail grade crossing in the Chicago Region.

Paragraph (c) states that the final rule preempts any State statutory or common law, local ordinance or State or local regulatory agency rule governing locomotive horn use at private and pedestrian grade crossings that are located within a duly established quiet zone. This paragraph has been revised in the final rule to include a reference to the rule's preemptive effect over State and local laws governing locomotive horn use at pedestrian grade crossings within quiet zones.

Paragraph (d) states that the final rule will not preempt State law regarding use of SSMs and ASMs as traffic control measures. However, with the exception of SSMs and ASMs implemented at the highway-rail grade crossings described in § 222.3(c), the final rule will preempt State law governing the sounding of the locomotive horn at highway-rail grade crossings equipped with SSMs and/or ASMs. Since the highway-rail grade crossings described in § 222.3(c) are exempt from the scope of the final rule, the final rule will not preempt State law governing the sounding of the locomotive horn at those crossings.

Paragraph (e), which expresses FRA's intent to refrain from preempting State law concerning administrative procedures that must be followed regarding the installation or modification of engineering improvements at highway-rail grade crossings, has been added to the final rule in response to comments requesting clarification of the role of State agencies that have jurisdiction over highway-rail grade crossing safety. For example, while requesting clarification of the rule's effect on the role of State agencies, the Oregon Department of Transportation noted that signal and median installations within the state of Oregon must be approved by the Oregon Department of Transportation's Rail Division. Along the same vein, the Missouri Department of Transportation stated that whenever highway-rail grade crossings are modified, the Missouri Department of Transportation is required to review and approve plans and issue administrative orders. Noting that State law gives it exclusive jurisdiction over the terms of installation, operation, maintenance, use and protection of each crossing, the California Public Utilities Commission asserted that the interim final rule was sufficiently vague that some localities might assume that they could bypass state agencies, such as the California Public Utilities Commission, that are

empowered with exclusive authority over grade crossing design and modification. The Township of Montclair, New Jersey also submitted comments requesting clarification of the State's role during the quiet zone development process. After reviewing these comments, FRA has revised the final rule by specifically stating, in paragraph (e), that the rule does not preempt State law concerning administrative procedures for the installation or modification of highway-rail grade crossing improvements.

#### *Section 222.9 Definitions*

The definitions of "Administrator", "Alternative safety measures (ASMs)", and "Associate Administrator" have not been revised in the final rule.

"Channelization device" means 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. "Tubular markers" and "vertical panels" as described in sections 6F.57 and 6F.58, respectively, of the Manual on Uniform Traffic Control Devices ("MUTCD") issued by the Federal Highway Administration, are acceptable channelization devices for purposes of this part. Additional design specifications are determined by the standard traffic design specifications used by the governmental entity constructing the channelization device. However, FRA notes that it would be highly advisable to use raised longitudinal channelizers that are at least four inches high.

FRA revised the definition of channelization device in the final rule to reflect the fact that tubular markers and vertical panels must now be attached to raised curbing, in order to qualify as an SSM. Even though the interim final rule allowed the use of tubular markers and vertical panels that were directly affixed to the pavement as Supplementary Safety Measures, FRA received a number of negative comments about the effectiveness and high maintenance burden associated with the use of this type of roadway treatment. After considering these comments, FRA has removed surface-mounted channelization devices from the list of approved SSMs. Therefore, the rule has been revised by restricting the definition of channelization devices to include only those raised longitudinal channelizers that are equipped with vertical panels or tubular delineators.

"Chicago Region" means the following six counties in the State of Illinois: Cook, DuPage, Lake, Kane, McHenry and Will.

The definition of "Crossing Corridor Risk Index" was not revised in the final rule. The definition of "Diagnostic team" was also not revised in the final rule. The California PUC submitted comments recommending that the definition of "diagnostic team" be revised to state that State agencies with jurisdiction over grade crossings must be included in any diagnostic team. However, FRA did not revise the definition of "diagnostic team" to mandate the inclusion of State agencies with jurisdiction over grade crossings because no funding for diagnostic team activities has been provided.

"Effectiveness rate" means a number between zero and one which represents the reduction of the likelihood of a collision at a public highway-rail grade crossing as a result of the installation of an SSM or ASM when compared to the same crossing equipped with conventional active warning systems of flashing lights and gates. Zero effectiveness means that the SSM or ASM provides no reduction in the probability of a collision, while an effectiveness rating of one means that the SSM or ASM is totally effective in eliminating collision risk. Measurements between zero and one reflect the percentage by which the SSM or ASM reduces the probability of a collision. This definition has been revised in the final rule to correct a typographical error.

The definitions of "FRA" and "Grade Crossing Inventory Form" have not been revised in the final rule.

"Intermediate Partial Quiet Zone" means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns for a specified period of time during the evening or nighttime hours, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads for a specified period of time during the evening and/or nighttime hours, and at which such statutes, ordinances or agreements were in place and enforced or observed as of December 18, 2003, but not as of October 9, 1996.

"Intermediate Quiet Zone" means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which State statutes or local ordinances restricted the routine sounding of

locomotive horns, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads, and at which such statutes, ordinances or agreements were in place and enforced or observed as of December 18, 2003, but not as of October 9, 1996.

The definitions of "Locomotive", "Locomotive horn", "Median", "MUTCD", and "Nationwide Significant Risk Threshold" have not been revised in the final rule.

"New Partial Quiet Zone" means a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which locomotive horns are not routinely sounded between the hours of 10 p.m. and 7 a.m., but are routinely sounded during the remaining portion of the day, and which does not qualify as a Pre-Rule Partial Quiet Zone. This definition contains a uniform period for the routine silencing of the locomotive horn, which was included in response to comments submitted by the Florida East Coast Railway asserting that different time periods for partial quiet zones would cause operational confusion and make compliance difficult.

"New Quiet Zone" means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which routine sounding of locomotive horns is restricted pursuant to this part and which does not qualify as either a Pre-Rule Quiet Zone or Intermediate Quiet Zone.

"Non-traversable curb" means a highway curb designed to discourage a motor vehicle from leaving the roadway. Non-traversable curbs, which are used at locations where highway speeds do not exceed 40 miles per hour, are at least six inches high. Additional design specifications are determined by the standard traffic design specifications used by the governmental entity constructing the curb.

FRA revised this definition in the final rule to correct a typographical error and to remove the maximum height requirement contained within the interim final rule. The interim final rule defined non-traversable curbs as being *more* than six inches, but no more than nine inches high. As noted by SEH, Inc., this definition would exclude the standard six-inch curb frequently used by governmental entities. Therefore, FRA has revised the definition to include the standard six-inch curbs that are frequently used by governmental entities.

"Partial Quiet Zone" means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded for a specified period of time during the evening and/or nighttime hours.

"Pedestrian crossing" means, for purposes of this part, a separate designated sidewalk or pathway where pedestrians, but not vehicles, cross railroad tracks. Sidewalk crossings contiguous with, or separate but adjacent to, public highway-rail grade crossings, are presumed to be part of the public highway-rail grade crossing and are *not* considered pedestrian crossings for purposes of this rule.

The definition for "Power-out indicator" has not been revised in the final rule.

"Pre-existing Modified Supplementary Safety Measure" (Pre-existing Modified SSM) means a safety system or procedure that is listed in appendix A to this Part, but is not fully compliant with the standards set forth therein, which was installed before December 18, 2003 by the appropriate traffic control or law enforcement authority responsible for safety at the highway-rail grade crossing. The calculation of risk reduction credit for pre-existing modified SSMs is addressed in appendix B of this part.

"Pre-existing Supplementary Safety Measure" (Pre-existing SSM) means a safety system or procedure established in accordance with this part before December 18, 2003 which was provided by the appropriate traffic control or law enforcement authority responsible for safety at the highway-rail grade crossing. These safety measures must fully comply with the SSM requirements set forth in appendix A. The calculation of risk reduction credit for qualifying pre-existing SSMs is addressed in appendix A of this part.

"Pre-Rule Partial Quiet Zone" means a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which State statutes or local ordinances restricted horns for a specified period of time during the evening and/or nighttime hours, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads for a specified period of time during the evening and/or nighttime hours, and at which such statutes, ordinances or agreements were in place and enforced or observed as of October 9, 1996 and on December 18, 2003.

The definition of Pre-Rule Partial Quiet Zone specifically includes partial

whistle bans enforced or observed as of the date of passage of Public Law 104-264, which amended 49 U.S.C. 20153 to require the Secretary to take into account the interest of communities that "have in effect" restrictions on the sounding of the locomotive horn at highway-rail grade crossings or have not been subject to the routine sounding of a locomotive horn at highway-rail grade crossings. FRA reads the statute as requiring FRA to be particularly solicitous of communities that had restrictions in effect at the time of the 1996 ordinance.

The definitions of "Pre-Rule Quiet Zone" and "Private highway-rail grade crossing" have not been revised in the final rule.

"Public authority" means the public entity responsible for traffic control or law enforcement at the public highway-rail grade or pedestrian crossing. The definition of this term has been revised to more accurately reflect the statutory definition provided in 49 U.S.C. 20153. In making this revision, FRA is responding to comments submitted by the American Association of Railroads ("AAR") which asserted that, under the definition provided in the interim final rule, multiple entities could qualify for public authority status over a set of crossings. For example, a county police department could have jurisdiction over the same set of crossings that fall under the jurisdiction of a State highway agency. Under such a scenario, the county police department and the State highway agency would qualify for "public authority" status. By narrowing scope of the definition, FRA is attempting to minimize the number of circumstances in which there may be multiple entities that can qualify for public authority status over a single set of crossings. While the definition refers to the entity "responsible for traffic control or law enforcement" at the public crossing, FRA does not contemplate that the local police department will be the entity creating a quiet zone. Instead, the public entity having control over that law enforcement agency would be the more appropriate entity. Thus, if city police patrol the crossing, the city government, rather than the actual city police department, would be the appropriate entity.

"Public highway-rail grade crossing" means, for purposes of this part, a location where a public highway, road, or street, including associated sidewalks or pathways, crosses one or more railroad tracks at grade. If a public authority maintains the roadway on both sides of the crossing, the crossing

is considered a public crossing for purposes of this part.

The definition of public highway-rail grade crossing has been revised in the final rule. The Florida Department of Transportation submitted comments asserting that the definition of public highway-rail grade crossing in the interim final rule is inconsistent with the definition of public road provided in Title 23 of the United States Code. Noting that grade crossings owned and maintained on one side by a private entity are generally considered to be private crossings, the AAR also submitted comments expressing concern that the definition provided by the interim final rule would include a number of crossings that are currently considered private crossings. As a result, the interim final rule would require routine horn sounding at many crossings where horns are not currently sounded. After considering these comments, FRA revised the definition of public highway-rail grade crossing to reflect the generally-accepted industry standard of having a public roadway on both sides of the crossing.

The definition of "Quiet Zone" has not been revised in the final rule.

"Quiet Zone Risk Index" means a measure of risk to the motoring public which reflects the Crossing Corridor Risk Index for a quiet zone, after adjustment to account for increased risk due to lack of locomotive horn use at the crossings within the quiet zone (if horns are presently sounded at the crossings) and reduced risk due to implementation, if any, of SSMs and ASMs with the quiet zone.

The calculation of the Quiet Zone Risk Index, which is explained in appendix D of this part, does not differ for partial quiet zones. FRA calculates risk on a 24-hour basis for all quiet zones, even if restrictions on locomotive horn use have only been imposed during the nighttime hours.

The definition of "Railroad" has not been revised in the final rule.

"Recognized State agency" means, for purposes of this part, a State agency, responsible for highway-rail grade crossing safety or highway and road safety, that has applied for and been approved by FRA as a participant in the quiet zone development process.

"Relevant collision" means a collision at a highway-rail grade crossing between a train and a motor vehicle, excluding the following: A collision resulting from an activation failure of an active grade crossing warning system; a collision in which there is no driver in the motor vehicle; or a collision in which the highway vehicle struck the side of the train beyond the fourth locomotive unit

or rail car. For purposes of Pre-Rule Partial Quiet Zones, a relevant collision shall not include collisions that occur during the time period within which the locomotive horn is routinely sounded.

A specific exception has been added to the definition of "relevant collision" for Pre-Rule Partial Quiet Zones. This exception has been added to the final rule to ensure that only those relevant collisions which occur during periods when the locomotive horn is silenced will be considered for purposes of § 222.41(b).

FRA received comments from Metra recommending that the definition of "relevant collision" be revised to exclude collisions that were deemed intentional on the part of the driver and collisions caused by driver impairment due to consumption of alcohol or controlled substances. The City of Cumberland, Maryland also submitted comments recommending that the definition of "relevant collision" be revised to exclude collisions in which the driver was under the influence of drugs or alcohol and collisions in which the driver committed suicide. However, FRA did not revise the definition of "relevant collision" to exclude these types of collisions because primary cause determinations for highway-rail grade crossing collisions are matters that are best left for resolution by the courts.

Lastly, the AAR submitted comments recommending that the definition of "relevant collision" be revised to include collisions at highway-rail grade crossings between a train and a pedestrian. While collisions between trains and pedestrians have been included in the overall calculation of grade crossing risk, FRA has not revised the definition of "relevant collisions" to include collisions between trains and pedestrians because pedestrian collisions are not relevant on the direct issue of motorist decision-making.

"Risk Index With Horns" means a measure of risk to the motoring public when locomotive horns are routinely sounded at every public highway-rail grade crossing within a quiet zone. In Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones, the Risk Index With Horns is determined by adjusting the Crossing Corridor Risk Index to account for the decreased risk that would result if locomotive horns were routinely sounded at each public highway-rail grade crossing.

The definitions of "Supplementary safety measure (SSM)", "Waiver", and "Wayside horn" have not been revised in the final rule.

#### *Section 222.11 What Are the Penalties for Failure To Comply With This Regulation?*

This section has been revised in the final rule to reflect the May 2004 inflation adjustment of FRA's maximum and minimum civil monetary penalties. Under the final rule issued on May 28, 2004 (69 FR 30591), FRA increased its minimum civil penalty from \$500 to \$550 and its maximum civil penalty where a grossly negligent violation or pattern of repeated violations has created an imminent hazard of death or injury or has actually caused death of injury from \$22,000 to \$27,000.

#### *Section 222.13 Who Is Responsible for Compliance?*

This section has not been revised in the final rule.

#### *Section 222.15 How Does One Obtain a Waiver of a Provision of This Regulation?*

The California PUC submitted comments recommending that the rule be revised to require that any petition for waiver must come before the State agency responsible for grade crossings. The California PUC asserted that, at the very least, the State agency responsible for crossing safety should be a party to the waiver proceeding and should be given an opportunity to address the petition. However, FRA notes that the waiver procedures set forth in 49 CFR part 211 require publication notice of the waiver petition in the **Federal Register** and the public, including State agencies, is encouraged to submit comments on the waiver petition before FRA issues a decision.

The National League of Cities submitted comments recommending that the scope of this section be expanded to include multi-jurisdictional quiet zones. By expanding this section to include multi-jurisdictional quiet zone disputes, FRA would make the final decision with respect to whether quiet zone status should be granted or denied in those instances in which an individual jurisdiction is in opposition to a proposed multi-jurisdictional quiet zone. However, FRA is unwilling to allow the waiver process to be used by one jurisdiction to impose its proposed quiet zone and all resultant responsibilities upon its neighbor. Therefore, the changes requested by the National League of Cities will not be made.

This section has been revised, however, to conform to the statutory requirements of §§ 20153(d) and 201553(I)(3). Accordingly, paragraph (b)

has been revised to require that in the event the railroad and public authority cannot reach agreement to file a joint petition, the filing party, in addition to specifying in its petition the steps it has taken in an attempt to reach agreement with the other party, must also explain why applying the requirement for a jointly filed submission under paragraph (a) would not be likely to contribute significantly to public safety. If the Associate Administrator determines that applying the requirement for a jointly filed submission to that particular petition would not be likely to significantly contribute to public safety, the Associate Administrator shall waive the requirement for a joint submission and accept the petition for consideration.

Paragraphs (c) and (d) of this section have not been revised in the final rule.

#### *Section 222.17 How Can a State Agency Become a Recognized State Agency?*

This section sets forth the procedure that shall be followed by a State agency responsible for highway-rail grade crossing safety and/or highway and road safety in order to become a recognized State agency. Even though the specific functions of a recognized State agency are subject to agreement between the State agency and FRA, FRA envisions that a recognized State agency could act as a quiet zone clearinghouse by providing guidance on appropriate SSM selection, ensuring that proposed grade crossing improvements comply with FRA regulations and State administrative rules, securing all necessary State administrative approvals, and ensuring that all required public authority notification packages comply with FRA regulations. FRA does not, however, plan to delegate any authority to approve quiet zone applications or to establish acceptable risk thresholds within quiet zones. Nor does FRA intend to allow recognized State agencies to prevent public authorities from creating quiet zones, if the proposed quiet zone qualifies under this rule and all applicable State laws and regulations.

FRA has added this section to the final rule in response to comments submitted by State agencies who suggested the need for a larger role in the quiet zone development process. Asserting that the State's role was virtually non-existent under the interim final rule, the Minnesota Department of Transportation submitted comments expressing concern that the interim final rule would allow communities to bypass the considerable expertise of State agencies charged with improving

grade crossing safety. The North Carolina Department of Transportation recommended that State departments of transportation serve as clearinghouses for quiet zone requests, so that State agencies could be involved in safety evaluations for each proposed quiet zone.

Other State agencies submitted comments requesting a more expansive role during the quiet zone development process. The Ohio Public Utilities Commission and the California Public Utilities Commission submitted comments recommending that all proposed quiet zones be reviewed and approved by State grade crossing regulatory agencies. Similarly, the Ohio Rail Association submitted comments recommending that the final rule extend to States the power to determine what oversight and safety standards need to be applied when communities seek quiet zones. FRA also received a Proposed Alternative Crossing Program from the Chicago Region, under which FRA would delegate the authority to implement and manage quiet zone development to an appropriate State agency with railroad safety oversight responsibilities.

After considering these comments, FRA decided to create a process by which State agencies who are interested in having a greater role in quiet zone development can provide assistance to FRA throughout the quiet zone development process. As suggested by the North Carolina Department of Transportation, recognized State agencies could serve as clearinghouses for proposed quiet zones by coordinating quiet zone creation and verifying local compliance with all applicable FRA regulations and State laws and administrative rules. However, as stated above, FRA does not plan to delegate any authority to approve quiet zone applications or to establish acceptable quiet zone risk thresholds.

Paragraph (a) provides that a State agency responsible for highway-rail grade crossing safety and/or highway and road safety may become a recognized State agency by submitting an application to the Associate Administrator. This application must contain a detailed description of the State agency's proposed scope of involvement in the quiet zone development process, contact information for the person(s) who will be made available to discuss the State agency application with FRA, and a statement from State agency counsel affirming that the State agency is authorized to undertake the responsibilities proposed.

Paragraph (b) provides that FRA will approve the State agency application if the proposed scope of involvement will, in the Associate Administrator's judgment, facilitate safe and effective quiet zone development. However, the Associate Administrator reserves the right to impose additional conditions as may be necessary to ensure effective coordination between the State agency and FRA during the quiet zone development process.

#### *Section 222.21 When Must a Locomotive Horn Be Used?*

Paragraph (a) of this section establishes the duty to sound the locomotive horn when approaching a public highway-rail grade crossing. The locomotive horn shall be sounded when the lead locomotive or cab car is approaching a public highway-rail grade crossing. This paragraph also requires the sounding of the locomotive horn in a pattern of two long, one short, and one long blast, which shall be initiated at the location specified in paragraph (b) of this section. The locomotive horn sounding pattern shall be repeated or prolonged until the locomotive or train occupies the crossing. However, the horn sounding pattern may be varied as necessary where crossings are spaced closely together.

FRA revised this paragraph in response to comments received from the AAR which noted an inconsistency in the locomotive horn sounding requirements imposed by the first two sentences in the interim final rule. The first sentence of this paragraph originally required the sounding of the locomotive horn when the locomotive or lead car *approached and passed through* a public grade crossing. However, the second sentence in the interim final rule required that the sounding of the locomotive horn be repeated or prolonged until the locomotive or train *occupied* the public grade crossing. For the sake of consistency, FRA revised the first sentence of this paragraph to address the initiation of locomotive horn sounding, so that only the second sentence of this paragraph refers to the duration of the locomotive horn sounding requirement.

Paragraph (b) of this section addresses the time interval within which the locomotive horn shall sound in advance of the public highway-rail grade crossing. Under the interim final rule, this paragraph (b) required that the locomotive horn shall begin sounding at least 15 seconds, but no more than 20 seconds, before the locomotive enters a public highway rail grade crossing. The paragraph also stated that in no event



shall a locomotive horn be sounded more than one-quarter mile in advance of the crossing.

FRA received comments on this paragraph from the North Carolina Department of Transportation and the AAR. North Carolina noted that a train operating at a speed of 80 mph would only be able to sound its horn for 11 seconds prior to its arrival at a public grade crossing. On the other hand, the AAR noted that a train operating at a speed less than 45 mph would sound its horn for more than 20 seconds, if horn sounding was initiated one-quarter mile from the public crossing.

As a result of the comments received, FRA revised this paragraph. New paragraph (b)(1) provides that, subject to paragraph (b)(2), the locomotive horn shall begin sounding at least 15 seconds, but no more than 20 seconds, before the locomotive enters a public highway-rail grade crossing. Paragraph (b)(2) addresses locomotives traveling at speeds more than 45 mph. That paragraph states that locomotives traveling at speeds in excess of 45 mph shall not begin sounding the horn more than one-quarter mile in advance of a public grade crossing, even if the advance warning provided by the locomotive will be less than 15 seconds in duration. Research has shown that the effect of a locomotive horn sounded at a distance greater than  $\frac{1}{4}$  mile from a grade crossing is attenuated to the extent that it does not provide adequate warning to the motorist. There is thus no need to sound the horn beyond this point. Eliminating the extra distance over which the horn is sounded will reduce its noise impact on nearby residences and businesses without affecting safety at grade crossings.

The Brotherhood of Locomotive Engineers and Trainmen submitted comments reiterating the importance of retaining whistle posts in their current locations to help locomotive engineers gauge their distance from upcoming public crossings. Asserting that the location of upcoming grade crossings can often only be determined in reference to permanent whistle boards, the Metropolitan Transit Authority submitted comments asserting that it would be virtually impossible for locomotive engineers to comply with the rule, given the range of speeds over which trains are operated. Although FRA has not received many comments from locomotive engineers and their representatives asserting that there may be substantial difficulties in complying with the time-based horn sounding requirements contained within this rule, FRA encourages railroads to retain

present whistle boards as an aid to their locomotive engineers.

Paragraph (c), which has been added to the final rule, reiterates the fact that the highway-rail grade crossings described in § 222.3(c) have been excluded from the scope of the final rule. Since the horn sounding requirements established by this section will not apply, locomotive horn sounding at these crossings will continue to be governed by State and local law.

*Section 222.23 How Does This Regulation Affect Sounding of a Horn During an Emergency or Other Situations?*

This section addresses the situations in which the locomotive horn may be sounded within a quiet zone. Paragraph (a)(1) is intended to make clear that a locomotive engineer may sound the locomotive horn in emergency situations. Notwithstanding any other provision of the rule, a locomotive engineer may sound the locomotive horn to provide a warning to vehicle operators, pedestrians, trespassers or crews on other trains in an emergency situation if, in the engineer's sole judgment, such action is appropriate in order to prevent imminent injury, death, or property damage. Thus, establishment of a quiet zone shall not prevent the locomotive engineer from using his or her discretion to sound the locomotive horn in emergency situations.

The AAR submitted comments on the interim final rule recommending that this paragraph be revised to specifically state that sounding of the locomotive horn to warn animals constitutes an emergency situation that would justify horn sounding within a quiet zone. FRA agrees that sounding the locomotive horn to warn animals that are trespassing on, or near the track, constitutes an emergency situation that justifies horn sounding within a quiet zone. Therefore, the rule has been revised accordingly.

Paragraph (a)(2) is intended to clarify that while the rule does not preclude the sounding of the locomotive horn in emergency situations, the rule also does not impose a legal duty to do so. FRA received a number of comments from communities throughout the country who were concerned that the limited scope of this provision does not shield public authorities from liability for silencing the routine use of the locomotive horn within quiet zones. For example, the Village of Hinsdale, Illinois asserted that the interim final rule exempts railroads from liability and recommended that the final rule be

revised to provide the same coverage for public authorities. Along the same lines, the City of Placentia, California submitted comments suggesting that the final rule be revised to specify that it is intended to provide protection from liability for silencing the train horn to public authorities, as well as the railroad and train crew. The City of Placentia also recommended that this protection from liability extend to incidents involving both motor vehicles and pedestrians. The Village of Cornwall-on-Hudson, New York submitted comments asserting that by not addressing the liability of local communities that create quiet zones, the interim final rule shifts traditional railroad liability away from the party that is profiting from the use of the tracks and onto local governments. The City of Sacramento, California submitted comments recommending that the final rule be revised to state that the establishment of a quiet zone cannot be the basis of a claim against a local entity, provided the local entity established the quiet zone in accordance with the rule. Along the same lines, the Town of Riverside, Illinois submitted comments suggesting that the final rule contain a clear statement that it is not intended to create any new liability for municipalities. The City of West University Place, Texas submitted comments suggesting that the final rule be revised by including broad language that eliminates liability—either civil or criminal—for public and private organizations and individuals who participate in quiet zone establishment.

As stated in the interim final rule, FRA intends to protect from liability the locomotive engineer who, in accordance with this rule and railroad operating rules that were established in response to the creation of a quiet zone, does not sound the locomotive horn. As for the public authority that creates a quiet zone in accordance with this part, FRA expects that the courts will apply the standard of care set by this rule, inasmuch as any quiet zone established in accordance with this part will have been established in accordance with federal law and FRA's intention to preempt State law is expressly stated. This rule, in effect, establishes the standard of care for the creation of quiet zones and the sounding of train horns, providing reassurance both to railroads and communities that no plaintiff will prevail on the basis that an audible warning has been withheld. Further, this rulemaking does nothing to undermine the sovereign immunity of State and local governments, where they have asserted it.

Paragraph (b) of this section addresses situations involving warning system malfunctions, in which use of the locomotive horn within a quiet zone shall be allowed. These situations include instances in which active grade crossing warning devices have malfunctioned and use of the locomotive horn is required by §§ 234.105, 234.106, or 234.107 of title 49, Code of Federal Regulations. These situations also include instances in which a grade warning system is temporarily out of service for inspection, testing, or maintenance purposes. The final rule includes a third category of warning system malfunction, which consists of wayside horn malfunctions, the occurrence of which shall also exempt locomotive horn use within a quiet zone.

Paragraph (c) permits use of the locomotive horn, within a quiet zone, to announce the approach of a train to roadway workers in accordance with a program adopted under part 214 of this Chapter, or where otherwise required by railroad operating rule.

#### *Section 222.25 How Does This Rule Affect Private Highway-Rail Grade Crossings?*

This section clarifies the manner in which this rule affects private crossings. (Section 20153(f) of title 49 explicitly gives discretion to the Secretary on the question of whether private highway-rail grade crossings should be subject to the rule's locomotive horn sounding requirements.) FRA has determined that exercising its jurisdiction in a limited manner over these crossings is the appropriate course of action.

This section specifically states that this rule does not require the routine sounding of locomotive horns at private highway-rail grade crossings. Although FRA has jurisdiction over locomotive horn use at private crossings based on 49 U.S.C. 20103 and 20153, it is not exercising that jurisdiction at this time, except as to the use of horns at private crossings within quiet zones.

Paragraph (a) has not been revised in the final rule. However, paragraph (b) has been revised to require the public authority to provide an opportunity to the State agency responsible for grade crossing safety and all affected railroads to participate in diagnostic team reviews of private crossings located within New Quiet Zones and New Partial Quiet Zones. FRA is making this revision in response to comments requesting a greater role for State agencies and affected railroads in the quiet zone establishment process. For example, the Florida East Coast Railway expressed concern that the interim final rule

would entitle a local community to establish a quiet zone without railroad input because the importance of receiving such input during the planning process cannot be overlooked. The Fort Worth & Western Railroad, New Orleans & Gulf Coast Railroad, and the Idaho Northern & Pacific Railroad submitted comments recommending that the interim final rule be revised to establish a proactive review process by railroads on the potential impacts of proposed quiet zones. The Southern California Regional Rail Authority commented that the final rule should require diagnostic team reviews of every grade crossing within a proposed quiet zone or diagnostic team reviews of every grade crossing that will be treated with an SSM that will need to be connected to the grade crossing warning system. (Please see the Section-by-Section discussion of § 222.17 for a summary of the comments requesting a greater role for State agencies.) After considering these comments, FRA revised the rule by providing greater opportunity for railroads to provide input during the quiet zone development process. The revision of paragraph (b) reflects this approach, as public authorities are now required to provide an opportunity for State agencies and railroads to participate in diagnostic team reviews of private crossings.

Paragraph (b)(1) retains the requirement contained within the interim final rule that private highway-rail grade crossings located within New Quiet Zones which allow access to the public, or access to active industrial or commercial sites, may be included in a quiet zone only if a diagnostic team evaluates the crossing to determine whether the institution of a quiet zone will significantly increase risk at the private crossing. The scope of this requirement has, however, been expanded in the final rule to include New Partial Quiet Zones.

Paragraph (b)(2) states that the public authority shall provide the State agency responsible for grade crossing safety and all affected railroads an opportunity to participate in the diagnostic team review of private crossings. This new requirement should ensure that the State agency and all affected railroads are given an opportunity to express their views and provide useful information for the public authority to consider. As stated in paragraph (a), the private crossing must then be equipped or treated in accordance with the recommendations of the diagnostic team.

This rule does not specify the financial responsibility of parties for safety improvements at private

crossings. Responsibility will be determined under normal principles of property law and based upon whatever contracts and cooperative agreements that may have been entered into by the parties. It is, however, expected that the public authority seeking to establish a quiet zone would assume responsibility for funding any necessary improvements, the private crossing owner would agree to the installation of any necessary improvements, and the railroad would assume practical responsibility for maintenance of any automated warning systems at the crossing.

Paragraph (c) of this section establishes requirements for the installation of signage at private crossings located within quiet zones. Paragraph (c)(1) states that every private crossing within a New Quiet Zone or New Partial Quiet Zone shall, at a minimum, be equipped with crossbucks and "STOP" signs, which are compliant with MUTCD standards unless otherwise prescribed by State law, together with advance warning signs that comply with § 222.35(c). However, even if State law prescribes use of a private crossing sign that is not MUTCD-compliant, the private crossing sign must indicate to the motorist that a stop is required. Paragraph (c)(2) provides a period of three years from the effective date of the final rule for the installation of such signs at private crossings located within Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones.

Paragraph (c) has been revised in response to comments submitted by the Association of American Railroads. Under the interim final rule, crossbucks and "STOP" signs that were installed at private crossings within quiet zones were required to conform to the MUTCD. However, the Association of American Railroads noted in its comments that some railroads use stop signs and crossbucks that have been incorporated into a "private railroad crossing" sign, which does not comply with all aspects of the MUTCD. Furthermore, the Association of American Railroads asserted that the State of California mandates use of a specific private railroad crossing sign. Therefore, the interim final rule would require railroads to replace signs that have been widely used for years. In an attempt to reduce the regulatory burdens associated with this rule, FRA has revised this paragraph to allow railroads and public authorities to continue to use crossbucks and "STOP" signs that are not fully compliant with MUTCD standards, if prescribed by State law.

*Section 222.27 How Does This Rule Affect Pedestrian Crossings?*

This section has been added to the final rule in order to address pedestrian crossings located within quiet zones. (Section 20153(f) of title 49 explicitly gives discretion to the Secretary on the question of whether pedestrian crossings should be subject to the rule's locomotive horn sounding requirements.) FRA has determined that exercising its jurisdiction in a limited manner of these crossings is the appropriate course of action. Although FRA has jurisdiction over locomotive horn use at pedestrian crossings based on 49 U.S.C. 20103 and 20153, it is not exercising that jurisdiction at this time except as to the use of horns at pedestrian crossings within quiet zones.

The AAR submitted comments warning that the failure of the interim final rule to address pedestrian crossings and pedestrian accidents was a major gap in the regulatory scheme. Noting that, in the absence of the warning provided by the locomotive horn, the only warning a pedestrian may have of an approaching train is the sound of the train itself and visual observation, the AAR recommended that the final rule require public authorities that want to create New Quiet Zones that encompass pedestrian crossings to demonstrate that they have addressed the effect that the quiet zone would have on pedestrian traffic.

It is imperative that the establishment of a quiet zone shall not result in a significant increase in risk at pedestrian crossings located within the quiet zone. Therefore, FRA is addressing pedestrian crossings in a manner similar to the approach recommended by the AAR. Paragraph (a) of this section provides that pedestrian crossings may be included in a quiet zone. Paragraph (b) of this section requires public authorities to address pedestrian safety issues when establishing New Quiet Zones and New Partial Quiet Zones that contain pedestrian crossings. Public authorities that want to establish a New Quiet Zone or New Partial Quiet Zone that contains pedestrian crossings will be required to conduct diagnostic team reviews of the pedestrian crossings and treat them in accordance with the diagnostic team recommendations. Paragraph (c) states that the public authority is required to provide an opportunity for the State agency responsible for grade crossing safety and all affected railroads to participate in diagnostic team reviews of pedestrian crossings. This will ensure that the State agency and all affected railroads are given an opportunity to express their

views and provide useful information for the public authority to consider.

Paragraph (d), which has been added to the final rule, requires the installation of signs at pedestrian crossings located within quiet zones that advise pedestrians that train horns are not sounded at the crossing. Noting that the interim final rule failed to require specific warnings for pedestrians within quiet zones, the Southern California Regional Rail Authority and Caltrain submitted comments recommending that the rule be revised to require the posting of warning signs at locations within quiet zones where pedestrians can access the railroad right-of-way. After considering these comments, in combination with the comments of the AAR which have been described above, FRA added paragraph (d) to the final rule to provide an additional warning to pedestrians at pedestrian crossings located within quiet zones.

Paragraph (d)(1) requires that each pedestrian crossing within a New Quiet Zone shall be equipped with a sign that advises the pedestrian that train horns are not sounded at the crossing. FRA recommends use of the W10-9 "NO TRAIN HORN" sign within New Quiet Zones. However, any sign used shall conform to the standards contained in the MUTCD.

Paragraph (d)(2) requires that each pedestrian crossing within a New Partial Quiet Zone shall be equipped with a sign that advises the pedestrian that train horns are not sounded at the crossing between the hours of 10 p.m. and 7 a.m. FRA recommends use of the W10-9 "NO TRAIN HORN" sign, in combination with a yellow S4-1 "10 p.m. to 7 a.m." sign within New Partial Quiet Zones. However, any sign(s) used shall conform to the standards contained in the MUTCD.

Paragraph (d)(3) requires that each pedestrian crossing within a Pre-Rule Quiet Zone shall be equipped by June 24, 2008 with a sign that advises the pedestrian that train horns are not sounded at the crossing. FRA recommends use of the W10-9 "NO TRAIN HORN" sign within Pre-Rule Quiet Zones. However, any sign used shall conform to the standards contained in the MUTCD.

Paragraph (d)(4) requires that each pedestrian crossing within a Pre-Rule Partial Quiet Zone shall be equipped by June 24, 2008 with a sign that advises the pedestrian that train horns are not sounded at the crossing for a specified period of time. FRA recommends use of the W10-9 "NO TRAIN HORN" sign, in combination with a yellow S4-1 sign that sets forth the hours during which train horns will be not sounded, within

Pre-Rule Partial Quiet Zones. However, any sign(s) used shall conform to the standards contained in the MUTCD.

Paragraphs (d)(3) and (4) provide a three-year grace period for the installation of signs at pedestrian crossings in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. This three-year grace period tracks the three-year grace period provided to Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones under § 222.41.

*Section 222.33 Can Locomotive Horns Be Silenced at an Individual Public Highway-Rail Grade Crossing That Is Not Within a Quiet Zone?*

This section has not been revised in the final rule. FRA received comments on this section from the DuPage Mayors and Managers Conference and the Chicago Area Transportation Study recommending that the rule be revised to exclude from the rule's locomotive horn sounding requirements those situations in which the train stops immediately before or after a highway-rail grade crossing. After considering these comments, FRA did not revise the final rule because of the potential confusion that could be created for motorists. Motorists who may have come to expect the sounding of the locomotive horn may not stop before entering a crossing that is occupied by a train that is preparing to depart. Likewise, motorists who are unaware that an approaching train intends to stop immediately after the grade crossing may actually accelerate upon viewing an approaching train, in order to "beat" the train over the crossing. Both of these scenarios present a potentially unacceptable increase in risk.

FRA also received comments from Metra recommending that this section be revised to exempt train operations at speeds of 30 mph or less. Metra also recommended that the "flagger" requirement be removed under such a scenario. This section was included in the rule in order to exempt switching operations from the rule's locomotive horn sounding requirements. However, FRA is unwilling to expand the scope of this exemption to include low-speed passenger operations, given the increase in risk associated with passenger operations over public highway-rail grade crossings.

*Section 222.35 What are the Minimum Requirements for Quiet Zones?*

This section details the minimum requirements for quiet zones established in conformity with this part. It addresses the minimum length of a quiet zone, minimum level of active

warning to be provided, and minimum type of signage required.

Paragraph (a), which governs the minimum required length of quiet zones, has been revised in the final rule. The scope of paragraph (a)(1)(i) has been expanded to include New Partial Quiet Zones. FRA received comments on paragraph (a) of this section from the California PUC which re-asserted its position that the minimum length of quiet zones should not be codified. In the alternative, the California PUC recommended that the rule be revised to allow quiet zone length to be determined by the applicant and railroad and approved by the appropriate State agency. However, as stated in the interim final rule, FRA believes that establishment of a minimum length of one-half mile for most New Quiet Zones and New Partial Quiet Zones is appropriate. With the exception of New Quiet Zones or New Partial Quiet Zones that are added to existing quiet zones, the one-half mile minimum length requirement will ensure that the sounding of the locomotive horn at a public grade crossing located outside the quiet zone will not effectively negate the prohibition on routine locomotive horn sounding within the quiet zone. In addition, the one-half mile minimum requirement for New Quiet Zones and New Partial Quiet Zones should minimize workload demands on the locomotive engineer, who will be required to become familiar with all quiet zone locations along his/her designated routes.

In response to comments received from the Chicago Department of Transportation and the Chicago Area Transportation Study, an exception to the minimum-length requirement has been carved out for New Quiet Zones and New Partial Quiet Zones that are being added to existing quiet zones. In their comments, the Chicago Department of Transportation and the Chicago Area Transportation Study requested that the final rule waive the half-mile minimum length requirement for New Quiet Zones that are located between existing quiet zones or that will be added to the end of an existing quiet zone. After considering the fact that New Quiet Zone grade crossings would be required to comply with all New Quiet Zone standards, with the sole exception of the one-half mile minimum length requirement, FRA decided to add paragraph (a)(1)(ii) to the final rule. Paragraph (a)(1)(ii) states that the one-half mile minimum length requirement set forth under § 222.35(a)(1)(i) shall be waived for New Quiet Zones and New Partial Quiet Zones that are added onto

existing quiet zones, provided there is no public highway-rail grade crossing at which locomotive horns are routinely sounded within one-half mile of the New Quiet Zone or New Partial Quiet Zone.

New Quiet Zones and New Partial Quiet Zones in the Chicago Region may not, however, include any highway-rail grade crossing described in § 222.3(c), for purposes of meeting the one-half mile minimum length requirement. Given the uncertainty associated with the appropriate excess risk estimate that should be derived from silencing the locomotive horn at those highway-rail grade crossings, FRA is unable to determine a practicable means of including them in the risk calculations for proposed New Quiet Zones and New Partial Quiet Zones. Therefore, pending completion of the Chicago Region data re-analysis discussed in "Chicago Regional Issues" (**SUPPLEMENTARY INFORMATION**, section 7), public authorities who are unable to meet the minimum one-half mile minimum length requirement without including any of the highway-rail grade crossings described in § 222.3(c) in their proposed New Quiet Zones or New Partial Quiet Zones may apply for a waiver, in accordance with § 222.15. FRA will consider any waiver petition submitted on a case-by-case basis.

Paragraph (a)(2) specifically addresses the minimum length requirement for Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. Even though the length of a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may continue unchanged, FRA has revised the interim final rule to clarify that the addition of any *public* crossing to a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone will transform the quiet zone into a New Quiet Zone or New Partial Quiet Zone subject to all requirements applicable to New Quiet Zones and New Partial Quiet Zones. In addition, the deletion of any *public* crossing from a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone, with the exception of a grade separation or crossing closure, must result in a quiet zone of at least one-half mile in length in order to retain Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone status.

FRA received comments on paragraph (a)(2) from the DuPage Mayors and Managers Conference and the Chicago Area Transportation Study requesting that the interim final rule be revised to specifically authorize communities to combine adjacent Pre-Rule Quiet Zones. As FRA had always intended to give communities the ability to combine adjacent Pre-Rule Quiet Zones into a

single, contiguous Pre-Rule Quiet Zone, FRA has clarified the rule accordingly.

Paragraph (a)(3) has not, however, been revised in the final rule.

Paragraph (b), which addresses the need for active warning devices at crossings within quiet zones, has been revised to address partial quiet zones. Paragraph (b)(1) has not been revised in the final rule. However, paragraph (b)(2) has been added to the final rule to address active warning devices in New Partial Quiet Zones. This new paragraph states that, with the exception of public highway-rail grade crossings that are temporarily closed in accordance with appendix A of this part, each public highway-rail grade crossing in a New Partial Quiet Zone must be equipped, no later than the quiet zone implementation date, with flashing lights and gates that control motorist traffic over the crossing and that conform to the MUTCD. An exception to this requirement has been provided for public highway-rail grade crossings that are closed between the hours of 10 p.m. and 7 a.m., in accordance with appendix A of this part, when routine sounding of the locomotive horn will be prohibited. Paragraph (b)(3) provides that grade crossing safety warning devices that existed at public highway-rail grade crossings located within Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones as of December 18, 2003 must be retained. These warning devices may be upgraded, which can result in additional risk reduction credit when calculating the Quiet Zone Risk Index, but they may not be downgraded from that which was in existence as of December 18, 2003. Any upgrade involving the installation or renewal of an automatic warning device system shall include power-out indicators and constant warning time devices, unless existing conditions at the crossing would prevent the proper operation of the constant warning time devices.

Paragraph (c) specifically addresses the installation of advance warning signs at grade crossings within a quiet zone. Paragraphs (c)(1) and (2) require that each highway approach to every public and private highway-rail grade crossing within New Quiet Zones and New Partial Quiet Zones shall be equipped with an advance warning sign that advises the motorist that train horns are not sounded at the crossing. Such signs shall conform to the standards contained in the MUTCD. Paragraph (c)(2), which was added to the final rule, requires that each highway approach to public and private highway-rail grade crossings within New Partial Quiet Zones shall be equipped with an advance warning sign that advises the

motorist that train horns are not sounded at the crossing between the hours of 10 p.m. and 7 a.m.

Paragraphs (c)(3) and (4) provide a three-year grace period for the installation of advance warning signs at public and private crossings in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. This three-year grace period tracks the three-year grace period provided to Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones under § 222.41.

Paragraph (d) has been added to the final rule, in response to comments requesting that the rule be revised to address pedestrian safety issues within quiet zones. The Florida Department of Transportation submitted comments asserting that pedestrian safety at crossings is a significant safety factor that should be addressed in the final rule. The New York Department of Transportation recommended that the final rule address pedestrian traffic over highway-rail grade crossings by requiring the installation of bells at all grade crossings where pedestrian traffic is prevalent and by requiring public authorities to consider pedestrian traffic issues when establishing quiet zones. On the other hand, Caltrain and the Southern California Regional Rail Authority recommended that advance warning signs be installed at locations within quiet zones where pedestrians can legally access the railroad right-of-way. After considering these comments, FRA decided on an approach that incorporates all of their suggestions. Given the fact that the majority of gated crossings are already equipped with at least one automatic bell, paragraph (d)(1) of this section requires that each public highway-rail grade crossing in a New Quiet Zone or New Partial Quiet Zone that is subjected to pedestrian traffic and equipped with at least one or more automatic bells shall retain those bells in working condition. Similarly, paragraph (d)(2) requires that each public highway-rail grade crossing in a Pre-Rule Quiet Zone or Pre-Rule Quiet Zone that is subjected to pedestrian traffic and equipped with at least one or more automatic bells shall retain those bells in working condition.

Public highway-rail grade crossings that are located within a quiet zone, but are not equipped with an automatic bell, shall be equipped with advance warning signs that comply with the MUTCD, in accordance with § 222.35(c). However, FRA assumes that prudent communities will exercise the option to install an automatic bell, particularly at those public grade crossings where the locomotive horn has been silenced. Due to the scope of the Environmental

Impact Statement that has accompanied this rulemaking, FRA has refrained from requiring the installation of automatic bells at public highway-rail grade crossings that are located within quiet zones and subject to pedestrian traffic. However, FRA strongly encourages communities to take a prudent approach to quiet zone continuation and establishment.

Paragraph (e) retains the interim final rule requirement that all private crossings within the quiet zone must be treated in accordance with this section and § 222.25.

Paragraph (f), which has been added to the final rule, provides that all pedestrian grade crossings within a quiet zone must be treated in accordance with § 222.27.

Paragraph (g) retains the interim final rule requirement that all public crossings within the quiet zone must be in compliance with the requirements of the MUTCD.

#### *Section 222.37 Who May Establish a Quiet Zone?*

This section has not been revised in the final rule. However, it should be noted that the highway-rail grade crossings described in § 222.3(c) have been excluded from the scope of the final rule. Thus, any New Quiet Zones or New Partial Quiet Zones established under this part cannot contain any highway-rail grade crossing described in § 222.3(c).

The Chicago Area Transportation Study submitted comments requesting that the rule be revised to provide an acknowledgment that a public authority (such as a state or county) could grant a blanket delegation of authority to municipalities to pursue and create quiet zones. In its comments, the Chicago Area Transportation Study stated that the State of Illinois has indicated that it would prefer to issue a blanket delegation rather than giving individual, written delegations for each potential quiet zone under its jurisdiction. However, a revision of the rule is not necessary, given the language in paragraph (a) this section, which states that if a proposed quiet zone includes public grade crossings under the authority and control of more than one public authority, both public authorities must agree to the establishment of a quiet zone and may, by delegation provided to one of the authorities, take such actions as are required by this part. The rule already allows the State of Illinois to delegate its authority over public grade crossings within proposed quiet zones to local communities for purposes of quiet zone creation/continuation.

The Village of Hinsdale, Illinois submitted comments recommending that the rule be revised to limit the definition of "public authority" to State or regional authorities. In its comments, the Village of Hinsdale stated that local governments have the most constraints and the least experience in dealing with highway-rail grade crossings. In addition, local authorities within the State of Illinois cannot order grade crossing modifications. However, after considering these comments, FRA did not revise the definition of "public authority" to exclude local communities. As stated in the interim final rule, a review of section 21053 of title 49 of the United States Code indicates a clear Congressional preference that quiet zone decision-makers be the "traffic control authority or law enforcement authority responsible for safety at the highway-rail grade crossing." The statute also requires that FRA take into account the interest of "communities" and that FRA "work in partnership with affected communities to provide technical assistance and \* \* \* a reasonable amount of time for local communities to install SSMs." Given this statutory directive, FRA is unwilling to exclude local communities from the definition of "public authority."

FRA also received comments from Dr. Robert Johnson, a resident of Houston, Texas, who recommended that the rule be revised to empower citizens to designate quiet zones. However, FRA is unwilling to expand the definition of "public authority" to include individuals. This final rule requires public authorities to take certain steps during the quiet zone development process for which State and local governments are uniquely suited, given the need to coordinate State and local efforts to improve high-risk crossings. If FRA were to empower individuals to create quiet zones in their neighborhoods, it would become exceedingly difficult to keep track of the quiet zone development process and to ensure that the proper notifications of quiet zone continuation/establishment have been made.

#### *Section 222.38 Can a Quiet Zone Be Created in the Chicago Region?*

This section has been added to the final rule to provide clarification as to the effect of the final rule in the Chicago Region. As stated in § 222.3(c) of this part, the final rule will not apply to any highway-rail grade crossing in the Chicago Region where the railroad was excused from sounding the locomotive horn by the Illinois Commerce Commission, and where the railroad did

not sound the horn, as of December 18, 2003 (the publication date of the Interim Final Rule). Therefore, the horn sounding requirements set forth in § 222.21 will not apply to these crossings. On the other hand, pending the Chicago Region data re-analysis discussed in "Chicago Regional Issues" (SUPPLEMENTARY INFORMATION, section 7), public authorities who would otherwise have been authorized to include these crossings in a new duly created quiet zone may no longer do so.

Public authorities may establish New Quiet Zones and/or New Partial Quiet Zones in the Chicago Region. However, any New Quiet Zone or New Partial Quiet Zone established in the Chicago Region cannot include any highway-rail grade crossing described in § 222.3(c) of this part.

#### *Section 222.39 How Is a Quiet Zone Established?*

This section addresses the manner in which a quiet zone may be established. In the NPRM, FRA proposed two different methods of establishing quiet zones. In one method, every public grade crossing within the proposed quiet zone would have an SSM applied to the crossing and the governmental entity establishing the quiet zone would be required to designate the perimeters of the quiet zone, install the SSMs, and comply with various notice and information requirements set forth in the rule. The second proposed method (which was ultimately adopted) would provide a governmental entity greater flexibility in using SSMs and ASMs to address problem crossings. The second method allows FRA to consider quiet zones that do not have SSMs at every crossing, as long as implementation of the proposed SSMs and ASMs in the quiet zone as a whole would cause a reduction in risk to compensate for the absence of routine sounding of the locomotive horn.

FRA received a number of comments that were critical of the corridor approach to risk reduction, including comments from the Ohio Rail Development Commission, the Ohio Railroad Association, the Metropolitan Transit Authority, and the AAR. FRA also received comments from Ohio Congressman Dennis Kucinich, the New York Department of Transportation, the Missouri Department of Transportation, and the Florida Department of Transportation recommending that the rule be revised to establish a maximum risk threshold for individual grade crossings.

FRA is, however, committed to providing a flexible approach to quiet zone establishment. Even though the

final rule does not require public authorities to install SSMs at the highest-risk crossings with quiet zones, FRA expects that many public authorities will install SSMs at those crossings, regardless of any obvious safety-motivated reasons for doing so. By installing an SSM at the highest-risk crossing within a proposed quiet zone corridor, the public authority will gain a higher overall risk reduction than that which would result from the installation of a similar SSM at a low-risk crossing.

It should also be noted that FRA retains the right to review the status of any quiet zone under § 222.51(c). If risk dramatically increases within a quiet zone, FRA may require the installation of additional safety improvements or terminate the quiet zone after providing an opportunity for comment. Should immediate action be required, FRA also reserves the right to exercise its emergency authority under 49 U.S.C. 20104 and 49 CFR Part 211, by issuing an order to immediately resume routine locomotive horn sounding at specific grade crossings.

Paragraph (a) of this section addresses situations in which the public authority may designate a quiet zone without the need for formal application to, or approval by, FRA. Paragraphs (a)(1) and (a)(2) have not been revised in the final rule. However, paragraph (a)(3), which provides that a quiet zone can be established by implementing SSMs that are sufficient to reduce the Quiet Zone Risk Index to a level at, or below, the Risk Index With Horns, has been revised in the final rule to substitute the defined term "Risk Index With Horns" for language that had been used in the interim final rule to provide an explanation of this standard.

FRA has revised the rule to give railroads and State agencies the opportunity to play a greater role during the quiet zone development process. Therefore, paragraph (b)(1) of this section, which provides a list of required documentation for public authority applications for quiet zone approval, now requires that the application include a statement describing the public authority's efforts to work with all affected railroads and the State agency responsible for grade crossing safety, as well as a list of any objections that may have been raised to the proposed quiet zone by the railroad(s) and State agency.

Paragraph (b)(1)(i) requires public authorities to submit an accurate, complete, and current Grade Crossing Inventory Form for each public and private grade crossing. FRA would like to clarify that FRA is not requiring that Grade Crossing Inventory Forms be

submitted to, and processed by, FRA's designated contractor before submission. Given the fact that it can take up to three months to process a Grade Crossing Inventory Form, FRA will accept copies of Grade Crossing Inventory Forms that have been submitted for processing, provided all entries on the Grade Crossing Inventory Form have been completed.

Paragraph (b)(2) specifically addresses quiet zone application requirements for newly established public and private highway-rail grade crossings. This paragraph has been added to the final rule in response to comments received from the Chicago Area Transportation Study and the Chicago Department of Transportation, which noted that there are locations in the Chicago Region where extensions of rail lines are expected to result in new grade crossings. The Chicago Area Transportation Study and the Chicago Department of Transportation requested that FRA waive the half-mile minimum length requirement imposed by § 222.35(a)(1) for these crossings. After considering these comments, as well as the implications of creating a quiet zone with newly established grade crossings, FRA has added a paragraph to the final rule that sets forth additional data requirements for each newly established grade crossing that will be included in the proposed quiet zone. Thus, paragraph (b)(2) of this section requires public authorities to submit five-year projected vehicle and rail traffic counts for newly established public and private grade crossings, in addition to the documentation required by paragraph (b)(1) of this section, as part of the public authority's application package.

FRA has, however, decided not to waive the half-mile minimum length requirement, imposed by § 222.35(a)(1), regarding newly established grade crossings. In FRA's experience, rail line extensions often exceed one-half mile in length. Therefore, this half-mile minimum length requirement should not present a substantial obstacle to the creation of quiet zones that contain newly established grade crossings. Should a public authority wish to create a quiet zone that is less than one-half mile in length, the public authority may file a petition for a waiver in accordance with § 222.15.

Paragraph (b)(3) has been added to the final rule in response to comments requesting a greater role for State agencies in the quiet zone development process. As discussed earlier in the analysis of § 222.17, the Ohio Public Utilities Commission and the California Public Utilities Commission recommended that the interim final rule

be revised to require State agency review and approval of all proposed quiet zones. The North Carolina Department of Transportation recommended that the interim final rule be revised to allow State departments of transportation to serve as clearinghouses for quiet zone requests or, in the alternative, to require public authorities to seek formal state and railroad input on quiet zone proposals. The City of Saint Paul, Minnesota also submitted comments recommending that the interim final rule be revised to assign technical resource/review responsibility to the State rail authority to ensure accuracy and uniformity of quiet zone applications.

FRA also received a number of comments from the railroad industry requesting that the final rule be revised to allow railroads to provide input during the quiet zone development process. The Fort Worth & Western Railroad, New Orleans & Gulf Coast Railroad, and the Idaho Northern & Pacific Railroad submitted comments suggesting that the rule be revised to establish a proactive review process for railroad input on the potential impact of proposed quiet zones. The Florida East Coast Railway submitted comments recommending that the rule be revised to require railroad and state government involvement during the quiet zone development process. Asserting that the interim final rule fails to provide for any meaningful input by State authorities or railroads during the quiet zone development process, the Metropolitan Transit Authority also submitted comments recommending that the rule be revised to allow for participation by the State and railroads during the quiet zone evaluation and decision-making process, in order to facilitate consideration of relevant information. The Association of American Railroads submitted comments expressing its strong objection to failure of the interim final rule to provide railroads that own or operate over grade crossings within a proposed quiet zone the opportunity to provide input.

After considering these comments, FRA has revised the rule by providing an opportunity for State agencies and railroads to review and provide input on the public authority application for FRA approval, in accordance with the procedures set forth in paragraph (b)(3). Under the terms of this paragraph, copies of the public authority application shall be provided, by certified mail, return receipt requested, to: All railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement

authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator. Any party that receives a copy of the public authority application may then submit comments on the public authority application to the Associate Administrator during the 60-day period after the date on which the application was mailed. However, this 60-day comment period can be waived if the public authority application includes written statements from each affected railroad, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety stating that the railroad, vehicular traffic authority and State agencies have waived their rights to provide comments on the public authority application.

Paragraph (b)(4) addresses the Associate Administrator's decisions on quiet zone applications. After reviewing any comments submitted during the 60-day comment period established by paragraph (b)(3) of this section, the Associate Administrator will approve the quiet zone if the public authority has complied with the requirements established by this paragraph (b) and has satisfactorily demonstrated that the proposed SSMs and ASMs will result in a Quiet Zone Risk Index that is at, or below, the Risk Index With Horns or the Nationwide Significant Risk Threshold. However, the Associate Administrator may include conditions in the decision of approval that are necessary, in the Associate Administrator's judgment, to ensure that the proposed safety improvements are effective. If the Associate Administrator does not approve the quiet zone application, the reasoning behind the Associate Administrator's decision will be provided to the public authority. Copies of the Associate Administrator's decision shall be provided to all parties listed in paragraph (b)(3)(i) of this section.

This paragraph (b)(4) has been revised in the final rule to give railroads an opportunity to petition the Associate Administrator to reconsider his/her decision to approve a quiet zone application. Under the interim final rule, only the public authority could request reconsideration of the Associate Administrator's decisions on quiet zone

applications. Under this final rule, the public authority and the railroad may petition the Associate Administrator to reconsider his/her decision to approve or deny a quiet zone application, on the basis that the Associate Administrator improperly exercised his/her judgment in finding that the proposed SSMs and ASMs would, or would not, result in a Quiet Zone Risk Index that is at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold. Petitions for reconsideration may be filed with the Associate Administrator in accordance with §§ 222.57(b) and (d).

Paragraph (c) of this section has not been revised in the final rule.

#### *Section 222.41 How Does This Rule Affect Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones?*

This section addresses the effect of this rule on Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. A Pre-Rule Quiet Zone is a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads, and at which such statutes, ordinances or agreements were in place and enforced or observed as of October 9, 1996 and on December 18, 2003. A Pre-Rule Partial Quiet Zone means a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns for a specified period of time during the evening and/or nighttime hours, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads for a specified period of time during the evening and/or nighttime hours, and at which such statutes, ordinances or agreements were in place and enforced or observed as of October 9, 1996 and on December 18, 2003.

FRA received a number of comments seeking clarification of the rule's treatment of pre-existing partial whistle bans. Noting that it had adopted a partial whistle ban in 1993 that prohibits the routine sounding of the locomotive horn between the hours of 10 p.m. and 7 a.m., the City of Plymouth, Minnesota requested that FRA treat pre-existing partial whistle bans "just like other Pre-Rule bans." The City of Highland Park, Illinois also submitted comments asserting that



partial whistle ban communities should be granted Pre-Rule Quiet Zone status. On the other hand, the City of Sacramento, California, which has a partial ban on the routine sounding of locomotive horns between the hours of 6 p.m. and 7 a.m., requested that FRA establish a lower target risk index for partial Pre-Rule Quiet Zones. Noting that two communities in DuPage County have pre-existing partial whistle bans, the Chicago Area Transportation Study recommended that the same standards and procedures already in place be applied to part-time Quiet Zones. Additionally, the Chicago Area Transportation Study recommended that FRA allow existing partial whistle bans to remain in effect until they could meet the standards for 24-hour Quiet Zones.

On the other hand, the AAR urged FRA to prohibit the continuation of pre-existing partial whistle bans that are based on temporary crossing closures. AAR argued that, at the very least, these grade crossings should not be allowed to qualify for quiet zone status by comparison to the Nationwide Significant Risk Threshold because the Nationwide Significant Risk Threshold does not accurately reflect the average risk level for the time period within which temporary crossing closures are in effect. AAR asserted that an average risk level for partial whistle bans would necessarily be lower than the Nationwide Significant Risk Threshold.

After considering these comments, FRA decided to adopt an approach similar to that which was recommended by the City of Plymouth, Massachusetts and the Chicago Area Transportation Study, whereby Pre-Rule Partial Quiet Zones will be treated in a manner similar to 24-hour Pre-Rule Quiet Zones. Therefore, communities with Pre-Rule Partial Quiet Zones that do not qualify for automatic approval will be given additional time within which to meet the standards set for 24-hour Pre-Rule Quiet Zones, provided the public authority complies with the requirements set forth in § 222.41(b).

FRA has not established a lower risk threshold for Pre-Rule Partial Quiet Zones. FRA remains confident that Pre-Rule Quiet Zones that have Quiet Zone Risk Indices that are at, or below, either the Nationwide Significant Risk Threshold or two times the Nationwide Significant Risk Threshold with no relevant accidents over the past five years constitute a category of highway-rail grade crossings that do not present a significant risk with respect to loss of life or serious personal injury.

It should be noted that the Nationwide Significant Risk Threshold

does not reflect the average level of risk at crossings at which the locomotive horn is silenced. Rather, the Nationwide Significant Risk Threshold reflects the average level of risk at crossings at which the locomotive horn is *routinely sounded*. Therefore, the formula used to calculate the Nationwide Significant Risk Threshold would not produce a lower risk level for crossings at which the locomotive horn is silenced during the evening/nighttime hours.

Paragraph (a) of this section addresses the establishment of Pre-Rule Quiet Zones by automatic approval. This paragraph was revised in the final rule to extend the cut-off date for relevant collisions to April 27, 2005. This revision has been made to ensure that any relevant collisions that occur between the publication dates of the interim final rule and the final rule are included in any determinations on this issue. This paragraph has also been revised to allow Pre-Rule Quiet Zones to be established by automatic approval if the Quiet Zone Risk Index is at or below the Risk Index With Horns. This revision has been made to accommodate those Pre-Rule Quiet Zone communities that will be able to meet the Risk Index With Horns by obtaining risk reduction credit for pre-existing SSMS. Lastly, this paragraph has also been revised to require the public authority to provide Notice of Quiet Zone Establishment, in accordance with § 222.43, on or before December 24, 2005. After December 24, 2005, all Pre-Rule Quiet Zones must be established in accordance with paragraph (c) of this section.

Paragraph (b) has been added to the final rule to address the establishment of Pre-Rule Partial Quiet Zones by automatic approval. Pre-Rule Partial Quiet Zones are similar to Pre-Rule Quiet Zones because they have a collision history, unlike New Quiet Zones, that can be analyzed to determine the safety effect of silencing the horn at the crossings within the quiet zone. Therefore, FRA will allow Pre-Rule Partial Quiet Zones that are established by automatic approval under paragraph (b) of this section to remain in effect. Pre-Rule Partial Quiet Zones can be established by automatic approval if, in addition to §§ 222.35 and 222.43, the quiet zone is in compliance with one of the following conditions: (1) There are SSMS at every public highway-rail grade crossing within the quiet zone; (2) if the Quiet Zone Risk Index as last published by FRA is at, or below, the Nationwide Significant Risk Threshold; (3) if the Quiet Zone Risk Index as last published by FRA is above the Nationwide Significant Risk Threshold but less than twice the

Nationwide Significant Risk Threshold and there have been no relevant collisions at any public grade crossing within the quiet zone for the past five years; or (4) if the Quiet Zone Risk Index as last published by FRA is at, or below, the Risk Index With Horns. It should be noted that, for purposes of Pre-Rule Partial Quiet Zones, collisions that occurred during the time period within which the locomotive horn was routinely sounded are not considered "relevant collisions."

This paragraph also requires the public authority to provide Notice of Quiet Zone Establishment, in accordance with § 222.43, on or before December 24, 2005. After December 24, 2005, all Pre-Rule Partial Quiet Zones must be established in accordance with paragraph (c) of this section.

Paragraph (c) addresses those Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that will not be established by automatic approval. This paragraph has been revised in the final rule to include Pre-Rule Partial Quiet Zones, to adjust the three- and five-year grace periods to correspond to the final rule effective date, and to provide a reference to other relevant Pre-Rule Quiet Zone and Pre-Rule Partial Quiet Zone requirements. Paragraph (c)(1) provides that a public authority may decide to continue Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones on an interim basis under the provisions of this paragraph. Continuation of a quiet zone beyond the periods specified in this paragraph will require implementation of SSMS or ASMS as though the quiet zone is a New Quiet Zone (in accordance with § 222.39 ("How is a quiet zone established?")) and compliance with the requirements set forth in §§ 222.25(c), 222.27(d), and 222.35.

Paragraph (c)(2)(i) provides that a public authority may continue a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone for five years from the effective date of the final rule. This 5-year grace period should ensure that the public authority has adequate time for planning and implementation of SSMS or ASMS. This five-year extension is, however, dependent on the public authority filing a detailed plan for establishing a quiet zone under this part. If the proposed quiet zone will require approval under § 222.39(b), the plan must include all the required elements of filings under that paragraph together with a timetable for implementation of the safety improvements. The plan must be filed by June 24, 2008. FRA understands that, in some cases, plans filed in accordance with this paragraph will be contingent

on funding arrangements that may not be complete as of the date of filing (particularly where State-level participation has been requested). FRA is seeking a good faith filing, which normally would be tendered by the executive head of the relevant public authority or authorities involved.

Paragraph (c)(2)(ii) specifically addresses those situations in which, during the three-year period following the final rule effective date, the Quiet Zone Risk Index for its Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone has dropped to a level at or below the Nationwide Significant Risk Threshold. In these situations, the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may remain in effect without any additional safety improvements, provided the public authority provides notification of Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone establishment in accordance with § 222.43 and has complied with the requirements of §§ 222.25(c), 222.27(d) and 222.35(c) on or before June 24, 2008.

Thus, the practical implication of paragraph (c)(2) is that a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may continue for three years from the effective date of the final rule without the installation of any improvements by the public authority. In addition, should the Quiet Zone Risk Index for the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone fall to a level at or below the Nationwide Significant Risk Threshold during this three-year grace period, the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may remain in effect, provided the public authority provides notification of quiet zone establishment in accordance with § 222.43 and has complied with the requirements set forth in §§ 222.25(c), 222.27(d) and 222.35 on or before June 24, 2008. However, if the Quiet Zone Risk Index for the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone does not fall to a level at or below the Nationwide Significant Risk Threshold by the end of the three-year grace period, locomotive horns shall resume sounding at all public crossings within the former quiet zone, unless the public authority has filed a detailed plan for completing the necessary safety improvements.

If certain conditions are met, paragraph (c)(3) states that locomotive horn restrictions may continue for three years beyond the five-year period permitted under paragraph (c)(2). The appropriate State agency must provide to the Associate Administrator a comprehensive State-wide implementation plan and funding commitment, by June 24, 2008, for

implementing improvements at Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. (These improvements must, when implemented, enable the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone to qualify for quiet zone status under this rule.) In addition, physical improvements must have been initiated at one of the crossings within the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone, or the State agency must have participated in quiet zone improvements in one or more jurisdictions elsewhere in the State, by June 24, 2009. FRA wishes to emphasize that the requirement for a plan and some funding participation is not intended to restrict any State to a single approach for addressing this need. By June 24, 2008, for instance, a State agency might have in place a broad policy for providing technical assistance to communities interested in continuing Pre-Rule Quiet Zones, along with sufficient identified funding to participate in the initial improvement required by June 24, 2009. It is not intended that the State agency assume general financial responsibility for this program unless the State elects to do so. Rather, the additional three-year grace period provided by this provision is intended to encourage State assistance of whatever appropriate type and to create an incentive for the State to contribute to improvements in any jurisdiction where environmental justice issues are prevalent.

Paragraph (c)(4), which has not been revised in the final rule, states that if the safety improvements planned for the quiet zone will require FRA approval, the public authority should apply for such approval prior to December 24, 2007, to ensure that FRA will have ample time to review such application prior to the end of the three-year extension period.

Paragraph (d), which addresses Pre-Rule Partial Quiet Zones that will be converted to 24-hour quiet zones, has been added in response to comments received on the rule. The Minnesota Department of Transportation submitted comments asserting that communities should be entitled to convert their Pre-Rule Partial Quiet Zones into full quiet zones, if they so choose. The Township of Montclair, New Jersey also submitted comments requesting that the final rule address the Pre-Rule Quiet Zone status implications of converting a Pre-Rule Partial whistle ban into a 24-hour whistle ban. FRA has decided to allow communities to convert their Pre-Rule Partial Quiet Zones into 24-hour quiet zones, if the quiet zone complies with the New Quiet Zone requirements set forth in §§ 222.25, 222.27, 222.35 and

222.39, and the public authority provides notification of the establishment of a New 24-hour Quiet Zone in accordance with § 222.43. FRA is requiring public authorities to meet these requirements because Pre-Rule Partial Quiet Zones do not have collision histories that reflect the increased risk that will result from silencing the routine use of the locomotive horn for 24 hours.

#### *Section 222.42 How Does This Rule Affect Intermediate Quiet Zones and Intermediate Partial Quiet Zones?*

This section addresses the effect of this rule on Intermediate Quiet Zones and Intermediate Partial Quiet Zones. An Intermediate Quiet Zone is a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads, and at which such statutes, ordinances or agreements were in place and enforced or observed as of December 18, 2003, but not as of October 9, 1996. An Intermediate Partial Quiet Zone is a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns for a specified period of time during the evening or nighttime hours, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads for a specified period of time during the evening and/or nighttime hours, and at which such statutes, ordinances or agreements were in place and enforced or observed as of December 18, 2003, but not as of October 9, 1996.

This section has been added to the final rule in response to comments expressing concern that the interim final rule does not address the needs of communities that enacted whistle bans after October 9, 1996. Steven Klafka, resident of Madison, Wisconsin, submitted comments recommending that the final rule extend the cutoff date for Pre-Rule Quiet Zone status to include the Madison whistle ban that was adopted in 2001. The Town of Newbury, Massachusetts, which enacted a whistle ban after commuter rail service resumed in October 1998, also asserted that communities that had established whistle bans as of the date of the interim final rule should qualify

for Pre-Rule Quiet Zone status. Alternately, a new category of "pre-existing" quiet zones should be added to the rule, which would not be required to meet the stringent risk formulas required of New Quiet Zones. Congressman John Tierney submitted comments requesting special consideration for communities like Newbury that do not qualify for Pre-Rule Quiet Zone status. At the very least, Congressman Tierney asserted that communities like Newbury should be granted a waiver from the rule's effective date and given additional time to comply with the rule. In a similar vein, Massachusetts State Representative Harriett Stanley submitted comments requesting that the interim final rule be amended to either grant Pre-Rule Quiet Zone status to communities like Newbury or to create a new category of quiet zones for these communities.

The Town of Concord, Massachusetts also submitted comments on this issue. Asserting that the October 9, 1996 cutoff date for Pre-Rule Quiet Zones is inequitable, the Town of Concord recommended that the interim final rule be revised to allow all communities with pre-existing whistle bans to qualify for Pre-Rule Quiet Zone status. This position was reiterated in comments submitted by Massachusetts State Representative Doug Atkins and Concord resident Mark Garvey.

After considering these comments, FRA determined that a third quiet zone category should be added to the final rule, which will be referred to as "Intermediate Quiet Zones" and "Intermediate Partial Quiet Zones", to cover communities like Newbury and Concord that enacted whistle bans after October 9, 1996, which were in place when the interim final rule was issued on December 18, 2003. Intermediate Quiet Zone and Intermediate Partial Quiet Zone communities will be required to meet New Quiet Zone standards, but will be given additional time within which to come into compliance. FRA did not extend full Pre-Rule Quiet Zone treatment because these whistle bans were not in effect when Congress instructed FRA to address the needs of communities that had pre-existing whistle bans on October 9, 1996.

Paragraph (a) provides that a public authority may continue an Intermediate Quiet Zone or Intermediate Partial Quiet Zone on an interim basis, provided notification of quiet zone continuation is provided in accordance with § 222.43. It is, however, important to note that this paragraph only provides interim authority to continue a quiet zone.

Continuation of the Intermediate Quiet Zone or Intermediate Partial Quiet Zone beyond June 24, 2006 will require implementation of SSMs or ASMs in accordance with § 222.39 ("How is a quiet zone established?") and compliance with the New Quiet Zone standards set forth in §§ 222.25, 222.27 and 222.35.

Thus, the practical implications of this timetable is that Intermediate Quiet Zones and Intermediate Partial Quiet Zones may continue until June 24, 2006. Locomotive horns will, however, resume sounding at all public crossings within the former quiet zone, unless the public authority has created a New Quiet Zone or New Partial Quiet Zone by implementing sufficient SSMs and/or ASMs to bring the quiet zone into compliance with § 222.39 and taking the necessary steps to comply with the New Quiet Zone standards set forth in §§ 222.25, 222.27 and 222.35.

Paragraph (b) addresses Intermediate Partial Quiet Zones that will be converted to 24-hour quiet zones. An Intermediate Partial Quiet Zone can be converted into a 24-hour New Quiet Zone by complying with the New Quiet Zone standards set forth in §§ 222.25, 222.27, 222.35 and 222.39, provided notification of intent to create a New Quiet Zone and notification of New Quiet Zone establishment is provided in accordance with § 222.43.

#### *Section 222.43 What Notices and Other Information Are Required To Create or Continue a Quiet Zone?*

This section sets forth the requirements that pertain to the four different types of quiet zone notification. The intent of this section is to ensure that interested parties are made aware of quiet zone initiation, continuation, and establishment in a timely manner.

Under paragraph (a)(1) of this section, the public authority is required to provide notification of its intent to create a New Quiet Zone or New Partial Quiet Zone under § 222.39. This notification shall be provided by certified mail, return receipt requested, to: All railroads operating over the public highway-rail grade crossings within the quiet zone; the State agency responsible for highway and road safety; and the State agency responsible for grade crossing safety. This requirement has been added to the final rule to ensure that railroads and State agencies are given an opportunity to provide comment on proposed quiet zones.

Paragraph (a)(2) requires the public authority to provide notification of its intent to continue a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone under

§ 222.41 or to continue an Intermediate Quiet Zone or Intermediate Partial Quiet Zone under § 222.42. This notification shall be provided by certified mail, return receipt requested, to: All railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator. Although the interim final rule required public authorities to provide notification of Pre-Rule Quiet Zone continuation, this requirement has been expanded in the final rule to include Pre-Rule Partial Quiet Zones, Intermediate Quiet Zones, and Intermediate Partial Quiet Zones. In addition, the rule has been revised to require the public authority to submit copies of all supporting documentation to each party listed in this paragraph. (Under the interim final rule, some supporting documentation was submitted only to the Associate Administrator.)

Paragraph (a)(3) requires the public authority to provide notification of its intent to file a detailed plan for a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone in accordance with § 222.41. This notification shall be provided by certified mail, return receipt requested, to all railroads operating over the public highway-rail grade crossings within the quiet zone; the State agency responsible for highway and road safety; and the State agency responsible for grade crossing safety. This requirement has been added to the final rule to ensure that railroads and State agencies are given an opportunity to provide comment on proposed improvements to the quiet zone before the detailed plan for quiet zone improvements is filed under § 222.41(c)(2).

Paragraph (a)(4) requires the public authority to provide notification of quiet zone establishment under § 222.39, 222.41(a), or 222.41(b). This notification shall be provided by certified mail, return receipt requested, to: All railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State

agency responsible for grade crossing safety; and the Associate Administrator.

FRA notes that paragraph (a) has been revised in the final rule in response to comments submitted by Kristian Foondle, who discovered a discrepancy between the preamble and the interim final rule text, which failed to include the State agency responsible for grade crossing safety in the list of parties to be notified. As it has always been FRA's intention to include the State agency responsible for grade crossing safety in the list of parties that must receive notification, FRA has revised the final rule accordingly.

Paragraph (b) addresses the Notice of Intent that is required for New Quiet Zones and New Partial Quiet Zones. The Notice of Intent has been added to the final rule in response to comments from State agencies and railroads requesting a greater role in the quiet zone development process. (Please refer to the Section-by-Section analysis of § 222.39(b) for a discussion of these comments.) As the issuance of the Notice of Intent will give State agencies and railroads an opportunity to provide input to the public authority on the proposed quiet zone, FRA strongly encourages public authorities to provide written notification of their intent to create quiet zones as early in the quiet zone development process as possible.

Paragraph (b)(1) provides a list of documents that must be included in the Notice of Intent. Paragraph (b)(1)(i) states that the public authority must provide a list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing that would be included in the proposed quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name. This requirement, which was revised in the final rule to include pedestrian crossings, will help parties identify crossings that would be affected by the proposed quiet zone. Paragraph (b)(1)(ii) states that the Notice of Intent must contain a statement of the time period within which restrictions would be imposed on the routine sounding of the locomotive horn. (It should be noted that New Partial Quiet Zones may only restrict locomotive horn use between the hours of 10 p.m. and 7 a.m.) This requirement will help parties determine the type of quiet zone that is being proposed. Paragraph (b)(1)(iii) states that the Notice of Intent shall contain a brief explanation of the public authority's tentative plans for implementing improvements within the proposed quiet zone. This explanation should contain information on the types of SSMs and/or ASMs that may be

utilized. FRA also encourages the public authority to provide a specific reference to the regulatory provision that would provide the basis for quiet zone creation, if known. Paragraph (b)(1)(iv) states that the Notice of Intent shall provide the name and address of the person who will act as the point of contact during the quiet zone development process, as well as the manner in which that person can be contacted. This designated person shall accept comments, if any, on the proposed quiet zone from State agencies and/or railroads. Paragraph (b)(1)(v) requires that the Notice of Intent include a list of all of the parties that will receive notification in accordance with paragraph (a)(1) of this section.

Paragraph (b)(2), which has been added to the final rule, establishes a 60-day comment period on the Notice of Intent. This comment period was added in response to comments requesting that the rule be revised to provide opportunities for State agencies and railroads to provide input during the quiet zone development process. Under paragraph (b)(2)(i), any party that receives a copy of the Notice of Intent may submit information or comments about the proposed quiet zone to the public authority during the 60-day period after the date on which the Notice of Intent was mailed. Even though the public authority would be well advised to carefully consider any thoughtful and well-reasoned comments received, FRA will not require the public authority to take any action in response. This 60-day comment period may terminate, under paragraph (b)(2)(ii), when the public authority obtains either written comments or "no-comment" statements from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety.

Paragraph (c) addresses the Notice of Quiet Zone Continuation. The interim final rule required public authorities to provide notice of the continuation of Pre-Rule Quiet Zones, but the scope of this requirement has been expanded in the final rule to include Pre-Rule Partial Quiet Zones, Intermediate Quiet Zones and Intermediate Partial Quiet Zones. Paragraph (c)(1)(i) states that, in order to prevent the resumption of locomotive horn sounding on June 24, 2005, the Notice of Quiet Zone Continuation shall be served no later than June 3, 2005. However, if the Notice of Quiet Zone Continuation is mailed after June 3, 2005, paragraph (c)(1)(ii) states that the Notice of Quiet Zone Continuation shall

state the date on which locomotive horn use at highway-rail grade crossings within the quiet zone shall cease, but in no event shall that date be earlier than 21 days after the date of mailing. This requirement should ensure that railroads receive notification of quiet continuation at least 21 days before the horn sounding requirements of this rule take effect, so that railroads will have enough time to notify their locomotive engineers of quiet zone locations.

Paragraph (c)(2) provides a list of documents that must be provided in each Notice of Quiet Zone Continuation. The final rule has been revised to require the public authority to submit copies of all documentation to each party listed in paragraph (a)(2) of this section. This revision should facilitate the transfer of information about the quiet zone to the parties that will be most affected by it.

Paragraph (c)(2)(i) states that the public authority must provide a list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name. This paragraph was revised in the final rule to include pedestrian crossings. Paragraph (c)(2)(ii) states that Notice must contain a specific reference to the regulatory provision that provides the basis for quiet zone continuation, while paragraph (c)(2)(iii) requires that the Notice contain a statement of the time period within which restrictions will continue to be imposed on the routine sounding of the locomotive horn. This statement should indicate whether restrictions are imposed on a 24-hour basis or merely during the nighttime hours. If restrictions are imposed during the nighttime hours, the statement must provide the specific times at which the restrictions will begin and end.

Paragraph (c)(2)(iv) requires the public authority to submit, to each party listed in paragraph (a)(2), an accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing that reflects conditions currently existing at the crossing. The interim final rule required public authorities to submit an accurate and complete Grade Crossing Inventory Form for each public and private highway-rail grade crossing dated within six months of quiet zone designation or FRA approval. This paragraph has, however, been revised to include pedestrian crossings. In addition, the six-month limitation has been removed based on comments

received from SEH, Inc., which asserted that the six-month requirement was burdensome because some states and railroads perform mass updates only a few times a year. Therefore, under the final rule, FRA will accept copies of accurate and complete Grade Crossing Inventory Forms, even if the forms are more than six months old, provided they reflect conditions that currently exist at the crossing.

FRA would like to clarify that FRA is not requiring that Grade Crossing Inventory Forms be submitted to, and processed by, FRA's contractor before submission. Given the fact that it can take up to three months to process a Grade Crossing Inventory Form, FRA will accept copies of Grade Crossing Inventory Forms that have been submitted to FRA's contractor for processing, provided all entries on the Grade Crossing Inventory Form have been completed.

Paragraph (c)(2)(v) requires the public authority to provide the name and address of the person responsible for monitoring compliance with the requirements of this part, as well as the manner in which that person can be contacted. Paragraph (c)(2)(vi) requires the public authority to provide a list of parties that will receive notification in accordance with paragraph (a)(2) of this section. Please note that this requirement has been revised in the final rule to require the public authority to provide a list of the names, as well as the addresses, of each party that will be notified in accordance with paragraph (a)(2) of this section.

Paragraph (c)(2)(vii) requires each public authority to submit a statement from its chief executive officer. This requirement has been revised in the final rule to require that the chief executive officer's statement include a certification that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

Paragraph (d) addresses the Notice of Detailed Plan that is required for Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that did not qualify for automatic approval under § 222.41. The Notice of Detailed Plan was added to the final rule in response to comments from State agencies and railroads requesting a greater role in the quiet zone development process. (Please refer to the Section-by-Section analysis of § 222.39(b) for a discussion of these comments.)

Paragraph (d)(1) states that the Notice of Detailed Plan must be served no later than four months before the filing of the detailed plan under § 222.41(c)(2). This requirement should ensure that State

agencies and railroads are given an opportunity to provide input on proposed crossing improvements before the detailed plan is filed.

Paragraph (d)(2) provides a list of documents that must be included in the Notice of Detailed Plan. Paragraph (d)(2)(i) states that the public authority must provide a list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing that will be included in the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name. Paragraph (d)(2)(ii) states that the Notice of Detailed Plan shall contain a statement of the time period within which restrictions would be imposed on the routine sounding of the locomotive horn. This statement should indicate whether restrictions are imposed on a 24-hour basis or merely during the nighttime hours. If restrictions are imposed during the nighttime hours, the statement must provide the specific times at which the restrictions will begin and end.

Paragraph (d)(2)(iii) states that the Notice of Detailed Plan shall contain a brief explanation of the public authority's tentative plans for implementing improvements within the proposed quiet zone. This explanation should contain information on the types of SSMs and/or ASMs that may be utilized. FRA also encourages the public authority to provide a specific reference to the regulatory provision that would provide the basis for quiet zone creation, if known. Paragraph (d)(2)(iv) states that the Notice of Detailed Plan must provide the name and address of the person who will act as the point of contact during the quiet zone development process, as well as the manner in which that person can be contacted. This designated person shall accept comments, if any, on the proposed crossing improvements from State agencies and/or railroads. Paragraph (d)(2)(v) requires that the Notice of Detailed Plan include a list of all of the parties that will receive notification in accordance with paragraph (a)(3) of this section.

Paragraph (d)(3) establishes a 60-day comment period on the Notice of Detailed Plan. This comment period was added in response to comments requesting that the rule be revised to provide opportunities for State agencies and railroads to provide input during the quiet zone development process. Thus, any party that receives a copy of the Notice of Detailed Plan may submit information or comments about the proposed crossing improvements to the

public authority during the 60-day period after the date on which the Notice of Detailed Plan was mailed. Even though the public authority would be well advised to carefully consider any thoughtful and well-reasoned comments received, FRA will not require the public authority to take any action in response.

Paragraph (e) addresses the Notice of Quiet Zone Establishment. As stated in paragraph (a)(4), FRA is requiring public authorities to provide notice of quiet zone establishment for New Quiet Zones and New Partial Quiet Zones established under § 222.39, Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that qualify for automatic approval under § 222.41(a) or 222.41(b), and Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that did not qualify for automatic approval under § 222.41.

Paragraph (e)(1) governs the timing of the Notice of Quiet Zone Establishment. Paragraph (e)(1)(i) retains the interim final rule requirement that the Notice of Quiet Zone Establishment shall provide the date upon which routine locomotive horn use at highway-rail grade crossings shall cease, but in no event shall the date be earlier than 21 days after the date on which the Notice was mailed.

Paragraph (e)(1)(ii) states that if the public authority was required to provide a Notice of Intent, in accordance with paragraph (a)(1) of this section, the Notice of Quiet Zone Establishment shall not be mailed less than 60 days after the mailing of the Notice of Intent, unless the Notice of Quiet Zone Establishment contains a written statement affirming that written comments and/or "no-comment" statements have been received from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety in accordance with paragraph (b)(2)(ii) of this section. This requirement has been added to the rule to ensure that State agencies and railroads are given an opportunity to provide comment on the Notice of Intent before the Notice of Quiet Zone Establishment is issued.

Paragraph (e)(2) provides a list of documents that must be provided in each Notice of Quiet Zone Establishment. The final rule has been revised to require the public authority to submit copies of all documentation to each party listed in paragraph (a)(4) of this section. This revision should facilitate the transfer of information about the quiet zone to the parties that will be most affected by it.

Paragraph (e)(2)(i) states that the Notice of Quiet Zone Establishment shall include a list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name. This paragraph has been revised to include pedestrian crossings. Paragraph (e)(2)(ii) states that Notice shall contain a specific reference to the regulatory provision that provides the basis for quiet zone establishment. This paragraph has, however, been revised to require public authorities to provide greater specificity when citing § 222.41 as the regulatory basis for quiet zone establishment. Paragraph (e)(2)(ii) also contains additional documentation requirements that are linked to the specific regulatory provision cited in the Notice. If the Notice contains a specific reference to § 222.39(a)(2)(i), 222.39(a)(2)(ii), 222.39(a)(3), 222.41(a)(1)(ii), 222.41(a)(1)(iii), 222.41(a)(1)(iv), 222.41(b)(1)(ii), 222.41(b)(1)(iii), or 222.41(b)(1)(iv), the Notice shall contain a copy of the FRA web page that reflects the quiet zone data upon which the public authority is relying. On the other hand, if the Notice includes a specific reference to § 222.39(b), it shall contain a copy of FRA's notification of approval. If a diagnostic team review was required under § 222.25 or 222.27, paragraph (e)(2)(iii) states that the Notice shall contain a statement from the public authority affirming that the State agency responsible for grade crossing safety and all affected railroads were provided an opportunity to participate in the diagnostic team review. The Notice shall also contain a list of recommendations made by the diagnostic team.

Paragraph (e)(2)(iv) requires that the Notice contain a statement of the time period within which restrictions will be imposed on the routine sounding of the locomotive horn. This statement should indicate whether restrictions will be imposed on a 24-hour basis or merely during the nighttime hours. If restrictions will be imposed during the nighttime hours, the statement must provide the specific times at which the restrictions will begin and end. (It should be noted that New Partial Quiet Zones may only restrict locomotive horn use between the hours of 10 p.m. and 7 a.m.)

Paragraph (e)(2)(v) requires the public authority to submit, to each party listed in paragraph (a)(2), an accurate and complete Grade Crossing Inventory Form for each public highway-rail grade

crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects the conditions existing at the crossing before any new SSMs or ASMs were implemented. ("New" SSMs are those SSMs that do not meet the definition of "pre-existing SSMs.") The interim final rule required public authorities to submit an accurate and complete Grade Crossing Inventory Form for each public and private highway-rail grade crossing dated within six months of quiet zone designation or FRA approval. This paragraph has, however, been revised to include pedestrian crossings. In addition, the six-month limitation has been removed in response to comments from SEH, Inc, which asserted that the six-month requirement was burdensome because some states and railroads perform mass updates only a few times a year. Therefore, under the final rule, FRA will accept copies of accurate and complete Grade Crossing Inventory Forms, even if the forms are more than six months old.

Paragraph (e)(2)(vi) requires the public authority to submit, to each party listed in paragraph (a)(4), an accurate, complete and current Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects SSMs and ASMs in place upon establishment of the quiet zone. SSMs and ASMs that cannot be fully described on the Inventory Form shall be separately described. This paragraph has been revised to include pedestrian crossings.

FRA would like to clarify that FRA is not requiring that Grade Crossing Inventory Forms be submitted to, and processed by, FRA's contractor before submission. Given the fact that it can take up to three months to process a Grade Crossing Inventory Form, FRA will accept copies of Grade Crossing Inventory Forms that have been submitted to FRA's contractor for processing, provided all entries on the Grade Crossing Inventory Form have been completed.

Paragraph (e)(2)(vii) states that if the public authority was required to provide a Notice of Intent, in accordance with paragraph (a)(1) of this section, the Notice of Quiet Zone Establishment shall contain a statement affirming that the Notice of Intent was, in fact, provided in accordance with paragraph (a)(1) of this section. This statement shall also state the date on which the Notice of Intent was mailed.

If the Notice of Quiet Zone Establishment was, however, mailed less than 60 days after the date on

which the Notice of Intent was mailed, paragraph (e)(2)(viii) states that the Notice of Quiet Zone Establishment shall also contain a written statement, in accordance with paragraph (e)(1)(ii), affirming that written comments and/or "no comment" statements have been received from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety in accordance with paragraph (b)(2)(ii) of this section.

Paragraph (e)(2)(ix) states that if the public authority was required to provide a Notice of Detailed Plan in accordance with paragraph (a)(3) of this section, the Notice of Quiet Zone Establishment shall contain a statement affirming that the Notice of Detailed Plan was, in fact, provided in accordance with paragraph (a)(3) of this section. This statement shall also state the date on which the Notice of Detailed Plan was mailed.

Paragraph (e)(2)(x) requires the public authority to provide the name and address of the person responsible for monitoring compliance with the requirements of this part, as well as the manner in which that person can be contacted. Paragraph (e)(2)(xi) requires the public authority to provide a list of parties that will receive notification in accordance with paragraph (a)(4) of this section. Please note that this requirement has been revised in the final rule to require the public authority to provide a list of the names, as well as the addresses, of each party that will be notified in accordance with paragraph (a) of this section.

Paragraph (e)(2)(xii) requires each public authority to submit a statement from its chief executive officer. This requirement has been revised in the final rule to require that the chief executive officer's statement include a certification that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

#### *Section 222.45 When Is a Railroad Required To Cease Routine Use of Locomotive Horns at Crossings?*

This section was revised in the final rule to provide a more specific reference to the provisions contained within § 222.43 that pertain to the Notice of Quiet Zone Establishment.

#### *Section 222.47 What Periodic Updates Are Required?*

The Southern California Regional Rail Authority submitted comments on this section recommending that the rule be revised to require public authorities to submit confirmation of dedicated

funding for non-engineering ASMs in their periodic updates. While FRA encourages public authorities to ensure a dedicated funding source for their non-engineering ASMs, FRA is unwilling to require public authorities to do so. Should a lack of funding negatively impact a non-engineering ASM, the violation rates within the affected quiet zone should increase, which in turn, should motivate the public authority to devote additional resources to the ASM. In addition, FRA reserves the right to review quiet zone status under § 222.51(c), if the Associate Administrator perceives that the safety systems and measures implemented within the quiet zone do not fully compensate for the absence of the locomotive horn.

Paragraphs (a) and (b) of this section have been revised in the final rule to require public authorities to submit updated Grade Crossing Inventory Forms for pedestrian crossings, in addition to the updated Inventory Forms for public and private grade crossings that were required under the interim final rule.

#### *Section 222.49 Who May File Grade Crossing Inventory Forms?*

Paragraph (a) of this section was revised in the final rule to clarify that Grade Crossing Inventory Forms required to be filed with the Associate Administrator in accordance with § 222.39 may also be filed by the public authority if, for any reason, such forms are not timely submitted by the State and railroad. However, paragraph (b) of this section has not been revised in the final rule.

The Ohio Rail Development Commission submitted comments noting that the interim final rule did not require State agency review of the Grade Crossing Inventory Forms before submission. The Ohio Rail Development Commission asserted that such review would ensure that accurate data is provided on the Grade Crossing Inventory Form. The California PUC also submitted comments asserting that public authorities should not be allowed to update the Grade Crossing Inventory Form. However, FRA has not revised the rule to require State agency review of Grade Crossing Inventory Forms or to prohibit public authorities from submitting updated Grade Crossing Inventory Forms. Sections 222.43 and 222.47 of the rule, which requires public authorities to submit Grade Crossing Inventory Forms as part of their quiet zone notification packages or periodic updates, also require the public authority to provide copies of these notification packages and periodic

updates to the State agency responsible for grade crossing safety. Therefore, State agencies that receive copies of the Grade Crossing Inventory Forms as part of the public authority notification packages and periodic updates can review these Forms and then notify FRA if any inaccurate data is discovered. If substantial data errors are discovered, FRA reserves the right to review quiet zone status under § 222.51(c).

The North Carolina Department of Transportation submitted comments recommending that this section be revised to include penalties and/or sanctions for parties that misrepresent data on the Grade Crossing Inventory Form. FRA has not revised the rule to include specific penalties or sanctions for parties that misrepresent data. However, FRA reserves the right to refer any person for criminal prosecution, under 49 U.S.C. 21311, who knowingly and willfully provides false information during the quiet zone application and/or designation process.

#### *Section 222.51 Under What Conditions Will Quiet Zone Status Be Terminated?*

This provision is intended to ensure that quiet zones, while providing for quiet at grade crossings, also continue to provide the level of safety for motorists and rail employees and passengers that existed before the quiet zones were first established, or in the alternative, the level of safety provided by the average gated public crossing where locomotive horns are routinely sounded. In order to ensure this level of safety, FRA will review grade crossing safety data on at least an annual basis. Paragraphs (a) and (b) address annual FRA risk reviews of quiet zones established in comparison to the Nationwide Significant Risk Threshold, while paragraph (c) provides for a review of quiet zone status at FRA's initiative. Paragraph (d) has been added to give public authorities the ability to withdraw their quiet zone status at any time, while addressing the implications of withdrawing from a multi-jurisdictional quiet zone. Paragraphs (e) and (f) address the quiet zone termination process.

Paragraph (a) addresses annual reviews of risk levels at crossings within New Quiet Zones. Paragraph (a)(1) provides that FRA will annually calculate the Quiet Zone Risk Index for New Quiet Zones and New Partial Quiet Zones, if they were established in comparison to the Nationwide Significant Risk Threshold under § 222.39. FRA will also notify the public authority of the Quiet Zone Risk Index for the preceding calendar year. FRA will not, however, perform routine annual risk reviews for New Quiet

Zones, or New Partial Quiet Zones that were established by having an SSM at every public grade crossing or by reducing the Quiet Zone Risk Index to the Risk Index With Horns. There is no need to perform annual risk reviews for these types of quiet zones because the quiet zone risk level has been reduced to a level that fully compensates for the absence of the locomotive horn. Paragraph (a)(2) has not been revised in the final rule.

Paragraph (b) addresses annual reviews of risk levels at crossings within Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. This paragraph has been revised in the final rule to include Pre-Rule Partial Quiet Zones. Paragraph (b)(1) provides that FRA will annually calculate the Quiet Zone Risk Index for two types of Pre-Rule Quiet Zones: each Pre-Rule Quiet Zone that qualified for automatic approval pursuant to §§ 222.41(a)(1)(ii) and 222.41(a)(1)(iii) and each Pre-Rule Partial Quiet Zone that qualified for automatic approval pursuant to §§ 222.41(b)(1)(ii) and 222.41(b)(1)(iii). Paragraph (b)(1) also provides that FRA will notify each public authority of the Quiet Zone Risk Index for the preceding calendar year for each such quiet zone in its jurisdiction. In addition, FRA will notify each public authority if a relevant collision occurred at a grade crossing within the quiet zone during the preceding calendar year. (Again, it should be noted that collisions occurring outside the time period within which the locomotive horn is routinely sounded are not considered "relevant collisions" for purposes of Pre-Rule Partial Quiet Zones.)

Paragraph (b)(2) addresses Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that originally qualified for automatic approval pursuant to §§ 222.41(a)(1)(ii) and 222.41(b)(1)(ii). Under paragraph (b)(2)(i), a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone that qualified for automatic approval under § 222.41(a)(1)(ii) or 222.41(b)(1)(ii) may continue unchanged if the Quiet Zone Risk Index, as last calculated by FRA, remains at, or below, the Nationwide Significant Risk Threshold. In addition, under paragraph (b)(2)(ii) of this section, if the Quiet Zone Risk Index as last calculated by FRA is above the Nationwide Significant Risk Threshold, but is lower than twice the Nationwide Significant Risk Threshold and no relevant collisions have occurred at crossings within the quiet zone within the five years preceding the annual risk review, the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may continue as though it originally received automatic



approval pursuant to § 222.41(a)(1)(iii) or 222.41(b)(1)(iii) of this part. Paragraph (b)(2)(iii) has not been revised in the final rule.

Paragraph (b)(3) addresses Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that originally qualified for automatic approval pursuant to §§ 222.41(a)(1)(iii) and 222.41(b)(1)(iii). Under paragraph (b)(3)(i), a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone that qualified for automatic approval under §§ 222.41(a)(1)(iii) or 222.41(b)(1)(iii) may continue unchanged if the Quiet Zone Risk Index, as last calculated by FRA, remains below twice the Nationwide Significant Risk Threshold and there have been no relevant collisions at any public grade crossing within the quiet zone during the preceding calendar year. Paragraph (b)(3)(ii) of this section has not been revised in the final rule.

Paragraph (b)(4) of this section has been revised to substitute the term "Risk Index With Horns" for the phrase "a level that fully compensates for the absence of the train horn."

Asserting that one year of data may not be indicative of a trend, Metra submitted comments on this section, asserting that Pre-Rule Quiet Zone status should be maintained for at least three years regardless of changes to the Nationwide Significant Risk Threshold. However, FRA has not revised the rule to extend the time period between risk reviews for Pre-Rule Quiet Zones. If a public authority is concerned that fluctuations in the Nationwide Significant Risk Threshold may require additional improvements in the near future, then the public authority should consider implementing improvements within the Pre-Rule Quiet Zone that will reduce the QZRI to a level at or below the Risk Index With Horns. By reducing the QZRI to the Risk Index With Horns, the public authority can avoid annual risk reviews and any associated uncertainty.

Paragraph (c) provides that the Associate Administrator may, at any time, review the status of any quiet zone. This section is included in the rule to enable the Associate Administrator to deal with any unforeseen and dramatic increase in risk that may arise in the future. Under this paragraph, if the Associate Administrator makes a preliminary determination that (1) the safety systems and measures implemented within the quiet zone do not fully compensate for the absence of the locomotive horn due to a substantial increase in risk, (2) documentation relied upon to establish the quiet zone contains substantial errors that may have an adverse impact

on public safety, or (3) significant risk with respect to the loss of life or serious personal injury exists within the quiet zone, the Associate Administrator will provide written notice of that determination. This notice of determination shall be provided to the public authority, all railroads operating over public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety. The Associate Administrator will also publish a notice of determination in the **Federal Register**.

This paragraph has been revised in the final rule to include those situations in which FRA becomes aware of substantial errors in the documentation that was relied upon when the quiet zone was established. FRA made this revision in response to comments submitted by the AAR, which suggested that FRA explicitly reserve the right to immediately terminate any quiet zone that was improperly implemented. After considering this comment, FRA decided to reserve the right to terminate quiet zones that have been implemented on the basis of significantly misleading information that may adversely impact public safety. Although action by FRA under this section does not immediately terminate the quiet zone, as proposed by the AAR, FRA retains emergency order authority to do so. It should also be noted that FRA reserves the right to refer any person for criminal prosecution under 49 U.S.C. 21311 or 18 U.S.C. 1001, or both, who knowingly and willfully provides false information during the quiet zone application and/or designation process.

FRA would like to provide clarification of the standard that would be applied for any quiet zone risk review in accordance with paragraph (c)(2)(iii) of this section. The DuPage Mayors and Manager Conference and the Chicago Area Transportation Study submitted comments recommending that the rule be revised to draw a distinction between the standard of "significant risk with respect to loss of life or serious personal injury" that may be applied during FRA review of a quiet zone and the Nationwide Significant Risk Threshold. After considering these comments, FRA would like to take this opportunity to note that FRA review of quiet zone status under paragraph (c) of this section will not be triggered every

time the QZRI rises above the Nationwide Significant Risk Threshold. However, if the Associate Administrator perceives that an existing quiet zone contains an extraordinary level of risk, due to a recent collision, a marked increase in train or vehicular traffic, or a marked increase in train or vehicular speeds, FRA reserves the right to review quiet zone status at its initiative.

Paragraph (c)(3) provides an opportunity to provide comments on the preliminary determination to the Associate Administrator. After considering the comments provided, the Associate Administrator may require that additional safety measures be taken or that the quiet zone be terminated. The final rule has been revised to specifically state that the Associate Administrator will provide a copy of his/her decision to the public authority and all parties listed in paragraph (c)(2) of this section. The public authority may appeal the Associate Administrator's decision by submitting a petition for reconsideration in accordance with § 222.57(c).

Although very unlikely, conditions at any particular crossing or quiet zone could pose such an imminent hazard that the quiet zone termination procedures established by this section become contrary to public safety. Thus, paragraph (c)(3) specifically states that this section is not intended to limit the Administrator's emergency order authority under 49 CFR part 211 or 49 U.S.C. 20104, which provides statutory authority to the Administrator to immediately issue emergency orders "when an unsafe condition or practice, or a combination of unsafe conditions and practices, causes an emergency situation involving a hazard of death or personal injury."

Paragraph (d) was added to the final rule in response to comments received from the New Jersey Department of Transportation which noted that the interim final rule did not provide a process by which quiet zone status could be withdrawn. Under this paragraph, any public authority that participated in the establishment a quiet zone may, at any time, withdraw its quiet zone status, even if the public authority is part of a multi-jurisdictional quiet zone.

Paragraph (d)(2) establishes the process by which quiet zone status may be terminated by the public authority. Under this paragraph, a public authority may terminate its quiet zone status by providing written notice of quiet zone termination, by certified mail, return receipt requested, to all railroads operating the public highway-rail grade crossings within the quiet zone, the

highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator.

Paragraph (d)(3) specifically addresses situations in which a public authority may wish to withdraw from a multi-jurisdictional quiet zone. Paragraph (d)(3)(i) states that the public authorities responsible for the remaining quiet zones shall provide statements to the Associate Administrator that certify that the Quiet Zone Risk Index for each remaining quiet zone is at, or below, the Nationwide Significant Risk Threshold or the Risk Index With Horns. These statements shall be provided, no later than six months after the notice of quiet zone termination was mailed, to all parties listed in paragraph (d)(2) of this section.

If any remaining quiet zone has a Quiet Zone Risk Index in excess of the Nationwide Significant Risk Threshold and the Risk Index With Horns, the public authority responsible for that quiet zone shall submit a written commitment, to all parties listed in paragraph (d)(2) of this section, to reduce the Quiet Zone Risk Index to the Nationwide Significant Risk Threshold or the Risk Index With Horns. Included in this commitment statement shall be a discussion of the specific steps to be taken by the public authority to reduce the Quiet Zone Risk Index. This commitment statement shall be provided to all parties listed under paragraph (d)(2) of this section no later than six months after the date on which the notice of quiet zone termination was mailed.

Paragraph (d)(3)(iii) states that failure to comply with paragraph (d)(3)(i) or (d)(3)(ii) of this section (*i.e.*, failure to submit a certification or commitment statement) shall result in termination of the remaining quiet zone(s) six months after the date on which the notice of quiet zone termination was mailed by the withdrawing public authority. Paragraph (d)(3)(iv) states that failure to complete implementation of SSMs and/or ASMs to reduce the Quiet Zone Risk Index to a level at, or below, the Nationwide Significant Risk Threshold or the Risk Index With Horns in accordance with the written commitment provided under paragraph (d)(3)(ii) of this section shall result in termination of the remaining quiet zone three years after the date on which the

written commitment was received by FRA.

Paragraph (e) establishes the notification process that must be followed when a quiet zone is terminated. This process has been revised in the final rule to require the public authority to provide immediate notification of quiet zone termination by certified mail, return receipt requested, to all railroads operating over public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator. The final rule has also been revised to require FRA to provide written notification to all parties listed in paragraph (e)(1) of this section. This provision was, however, added as a safeguard, as the public authority retains primary responsibility for notifying all parties listed in paragraph (e)(1) of the termination of a quiet zone.

Paragraph (f) retains the requirement that railroads begin sounding the locomotive horn at all public highway-rail grade crossings within the former quiet zone within seven days after receiving notice of quiet zone termination.

#### *Section 222.53 What Are the Requirements for Supplementary and Alternative Safety Measures?*

This section, through reference to Appendices A and B, lists acceptable SSMs and ASMs. Paragraph (a) states that approved SSMs are listed in appendix A. This paragraph has also been revised in the final rule to state that, with the exception of permanent crossing closures, pre-existing SSMs can qualify for quiet zone risk reduction credit in the manner specified by appendix A. This revision has been made in response to comments requesting that the final rule assign quiet zone risk reduction credit for pre-existing SSMs. For example, Vydas Juskelis, resident of Villa Park, Illinois, submitted comments requesting credit for the medians that the village had installed at two grade crossings in 1998 and 2003. Under this final rule, if the medians installed by the Village of Villa Park comply with the requirements set forth in appendix A, the medians will qualify for quiet zone risk reduction credit.

The Village of Hinsdale, Illinois submitted comments suggesting that the

rule be revised to provide credit for communities that have installed SSMs since October 9, 1996. However, the Chicago Department of Transportation, the Chicago Area Transportation Study and the DuPage Mayors and Managers Conference submitted comments asserting that any SSM, regardless of when it was installed, should result in quiet zone risk reduction. If a qualification "cut-off" date was necessary, though, in order to provide credit for some, but not all, SSMs that have already been installed, the date of November 2, 1994 would be appropriate. After considering these comments, FRA decided to provide risk reduction credit for pre-existing SSMs regardless of the date on which the SSM was installed, so that all communities that installed have SSMs can obtain risk reduction credit for having done so.

The final rule does not, however, provide credit for pre-existing permanent grade crossing closures or pre-existing grade separations because the risk level that existed at the original public grade crossing before it was permanently closed or grade-separated cannot be determined. Public authorities should not be adversely affected by this exception, though, because the risk indices for public grade crossings that have been permanently closed or grade separated are not included in the calculation of the Quiet Zone Risk Index.

Paragraph (b) has also been revised in the final rule to provide credit for pre-existing modified SSMs, in the manner specified by appendix B. The Chicago Department of Transportation submitted comments asserting that any ASM, regardless of when it was installed, should result in quiet zone risk reduction credit. However, if a "cutoff" date must be chosen, the date on which Public Law 103-440 was adopted (November 2, 1994) would be appropriate. After considering these comments, FRA revised the rule to provide risk reduction credit for pre-existing modified SSMs, regardless of the date on which the modified SSM was installed. FRA has not, however, extended risk reduction credit for pre-existing non-engineering ASMs or engineering ASMs because the initial risk level that existed at public grade crossings when the non-engineering ASM or engineering ASM was implemented cannot be determined.

Paragraph (c) has not been revised in the final rule.

*Section 222.55 How Are New Supplementary or Alternative Safety Measures Approved?*

This section has not been revised in the final rule.

*Section 222.57 Can Parties Seek Review of the Associate Administrator's Actions?*

This section details the right of parties to seek review of the Associate Administrator's actions.

Paragraph (a) of this section has been revised to provide a list of the parties that shall receive a copy of the petition for review of the Associate Administrator's decision to grant or deny an application of approval of a new SSM or ASM.

Paragraph (b) provides a process by which a public authority may request reconsideration of a decision of the Associate Administrator to deny an application for approval of a quiet zone or to require additional safety measures as a condition of approval. Under the terms of this paragraph, the public authority may file a petition for reconsideration within 60 days of the date of the Associate Administrator's decision. The petition, which must be served upon all parties listed in § 222.39(b)(3), must specify the grounds for asserting that the proposed SSMs and ASMs would not result in a Quiet Zone Risk Index that would be at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold. Upon receipt of a timely and proper petition, the Associate Administrator will give the public authority an opportunity to submit additional documents and to request an informal hearing. After reviewing the additional materials and completing any hearing requested, the Associate Administrator shall issue a decision on the petition that will be administratively final.

Paragraph (c) provides a process by which a public authority may request reconsideration of a decision of the Associate Administrator to terminate quiet zone status. This process has, however, been revised in the final rule, as filing a petition under this paragraph will no longer stay the termination of quiet zone status, unless the Associate Administrator publishes a notice in the **Federal Register** that specifically stays the effectiveness of his/her decision to terminate quiet zone status. Under the terms of this paragraph, a public authority may file a petition for reconsideration within 60 days of the date of the Associate Administrator's decision. The petition must specify the grounds for the requested relief and be served upon all parties listed in

§ 222.51(c)(2). Upon receipt of a timely and proper petition, the Associate Administrator will give the public authority an opportunity to submit additional documents and to request an informal hearing. After reviewing the additional materials and completing any hearing requested, the Associate Administrator shall issue a decision on the petition that will be administratively final. A copy of this decision will be served on each party listed in § 222.51(c)(2).

Paragraph (d) has been added to the final rule in response to comments submitted by the Association of American Railroads requesting a formal right to appeal FRA approvals of proposed quiet zones when a railroad believes that public safety will be adversely affected by the quiet zone. After considering these comments, FRA revised the final rule to provide a process by which a railroad may request reconsideration of a decision of the Associate Administrator to approve a quiet zone application under § 222.39(b). Under the terms of this paragraph, a railroad may file a petition for reconsideration within 60 days of the Associate Administrator's decision to approve a quiet zone application. The petition, which must be served upon all parties listed in § 222.39(b)(3), must specify the grounds for asserting that the proposed SSMs and ASMs would result in a Quiet Zone Risk Index that would be at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold. Upon receipt of a timely and proper petition, the Associate Administrator will give the railroad an opportunity to submit additional materials and to request an informal hearing. After reviewing any additional materials and completing any hearing requested, the Associate Administrator shall issue a decision which shall be administratively final.

*Section 222.59 When May a Wayside Horn Be Used?*

This section addresses the requirements pertaining to wayside horn installations at grade crossings.

Paragraph (a) of this section has not been revised in the final rule. The Chicago Area Transportation Study submitted comments recommending that the rule be revised to provide risk reduction credit for wayside horn installations within quiet zones. Since wayside horns have an effect that is similar to the locomotive horn, the Chicago Area Transportation Study recommended that an effectiveness rate of 66.8 percent be assigned to wayside horns. FRA has not, however, revised the rule by assigning an effectiveness

rate to the wayside horn. A study performed by the Texas Transportation Institute in May 2000, which compared driver violation rates at a grade crossing equipped with a wayside horn, found that the wayside horn was as effective as the locomotive horn. However, after almost five years, use of the wayside horn did not result in a significant reduction in driver violation rates, when compared to the pre-test, baseline driver violation rate. FRA notes that the safety measures that have been approved for use as SSMs and have been assigned effectiveness rates, when implemented, have a demonstrated effect on reducing crossing collision risk. Since the wayside horn has not demonstrated a significant effect on driver violation rates, the final rule will continue to treat wayside horns as a one-to-one substitute for the locomotive horn.

Paragraph (b) of this section has been revised in the final rule to provide a specific list of parties who shall receive a copy of the notice of wayside horn installation. This paragraph has also been revised to require that the notice of wayside horn installation state the date on which the wayside horn will become operational, which shall be at least 21 days after the notice of wayside horn installation is mailed.

Paragraph (c) has been modified in the final rule to allow a railroad or public authority to provide written notification of wayside horn installations at grade crossings that are located outside a quiet zone. Under the interim final rule, the public authority was the only party authorized to provide this notification. FRA decided to extend this authorization in the final rule to include railroads, in order to provide greater flexibility.

This paragraph has also been revised in the final rule to require the railroad or public authority to provide written notification of wayside horn installation to all railroads operating over the public highway-rail grade crossing, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossing, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator. Under the interim final rule, the public authority was required to provide written notification to the Associate Administrator and each railroad operating over the grade crossing. FRA has expanded this list of notified parties to ensure that all affected parties are notified of wayside horn installations outside quiet zones.

Paragraph (d) retains the interim final rule requirement that a railroad

operating over a grade crossing equipped with an operational wayside horn installed within a quiet zone pursuant to this section shall cease routine locomotive horn use at the grade crossing. This paragraph has, however, been revised in the final rule, with respect to its treatment of grade crossings that are equipped with wayside horns, but located outside of a quiet zone. Under the interim final rule, railroads could cease routine locomotive horn use at these grade crossings through agreement with the public authority. This paragraph has, however, been revised in the final rule to require railroads to cease routine locomotive horn use on the operational date specified in the notice of wayside horn installation, which shall be provided pursuant to paragraph (c) of this section.

#### *Appendix A—Supplementary Safety Measures*

Appendix A provides a list of SSMs that have been determined by FRA to effectively compensate for the lack of the locomotive horn. This list of approved SSMs has been expanded to include permanent closures of public highway-rail grade crossings, as discussed herein. However, barrier gates have not been added to the list of approved SSMs. FRA received comments from Universal Safety Response, Inc. recommending that the rule be revised to allow “smart” barriers, such as the GRAB-sp (Ground Retractable Automobile Barrier), to qualify as approved SSMs. FRA notes that barrier gates are currently treated as Gates with Medians for purposes of quiet zone risk reduction credit. However, public authorities who are interested in obtaining a higher effectiveness rate for a proposed barrier gate system may submit supporting documentation to the Associate Administrator for consideration.

FRA also received a number of comments from individuals and organizations, who submitted comments recommending that the rule be revised to include extended gate arms which completely block the intersection in the list of approved SSMs as a cost-effective substitute for 4-quadrant gate systems. Terence Daugherty, Village Council President in Russia, Ohio, submitted comments expressing disappointment that gates which completely block the intersection on the ingress side have not been included in the final rule. The Rice Lake Homeowners Association in Chesterton, Indiana, submitted comments asserting that extended gate arms should be considered by FRA as a cost-effective option for quiet zone risk reduction credit. The Village of Silver

Lake, Wisconsin submitted comments recommending that extended gate arms be tested and approved by FRA as SSMs because they effectively prevent motorists from driving around lowered gates and they cost considerably less than 4-quadrant gates. Laurie and Greg Teran, residents of Acton, Massachusetts, submitted comments urging FRA to accommodate local solutions for high grade crossing risk by allowing safety gates with  $\frac{3}{4}$ -length arms to be used as Alternative Safety Measures. On the other hand, the North Carolina Department of Transportation submitted comments asserting that the use of articulated and longer gate arms should not be permitted as an SSM, in light of studies that have demonstrated decreased effectiveness from the use of these devices.

After considering these comments, FRA did not revise the rule by adding elongated gate arms to the list of approved SSMs because of the lack of demonstrated effectiveness of these devices. However, public authorities who wish to add elongated gate arms to the list of approved SSMs are encouraged to follow the procedures set forth in § 222.55 for obtaining FRA approval to demonstrate the effectiveness of these traffic control measures.

Appendix A has also been revised in the final rule to set forth the procedures by which public authorities can receive credit for certain pre-existing SSMs. (For a discussion of the comments received on this issue, please refer to the preamble discussion of § 222.53.) An explanatory note has also been added at the beginning of this appendix, which states that the SSM effectiveness rates are subject to adjustment as research and demonstration projects are completed and data is gathered and refined. This explanatory note, which was derived from language in the preamble to the interim final rule, has been added to the final rule text to make it clear that the effectiveness rates of the SSMs listed in appendix A are subject to change. FRA received comments on this issue from the Metropolitan Transit Authority and the New York Department of Transportation suggesting that the interim final rule be revised to include a periodic review of SSM effectiveness rates. FRA intends to revise the SSM effectiveness rates in the future, as more data on SSM effectiveness rates becomes available through research and demonstration projects, as well as real-world experience with SSM implementation inside quiet zones. However, formal periodic reviews of SSM effectiveness

rates have not been added to the final rule.

#### *Temporary Closure of a Public Highway-Rail Grade Crossing*

The requirements pertaining to this SSM have been modified in the final rule. Requirement “a” has been modified to state that the closure system must completely block highway traffic on all approach lanes to the crossing. This modification was made in response to comments received from the Ohio Rail Development Commission suggesting that the rule be revised to make it clear that closure devices should be provided for each approach to the crossing, including one-way streets. Requirement “b”, which has been added to the final rule, pertains to adjacent pedestrian crossings. FRA received comments from the AAR and the Ohio Rail Development Commission recommending that the final rule be revised to require closure of pedestrian crossings and adjacent sidewalks whenever the highway-rail grade crossing is temporarily closed. After considering these comments, FRA added requirement “b” to the final rule, which requires that the closure system completely block adjacent pedestrian crossings. Requirement “c” has also been revised in the final rule by requiring a specified crossing closure period (10 p.m. until 7 a.m.) within New Partial Quiet Zones. This revision has been made in response to comments submitted by the AAR, which urged FRA to establish uniform closure periods for temporary crossing closures in order to minimize locomotive engineer confusion.

Requirements “d” through “f” have not been revised in the final rule. However, requirement “g”, which requires that the closure system be equipped with a monitoring device that contains an indicator that is visible to the train crew prior to entering the crossing, has been added to the final rule. The Ohio Rail Development Commission and the North Carolina Department of Transportation submitted comments recommending that the rule be revised to require that temporary closure systems be equipped with monitoring/indicator devices that illuminate and are visible to the train crew whenever the quiet zone is in effect and the closure system has been deployed. After considering these comments and the positive effect that the monitoring/indicator device would have on crossing safety, FRA revised the final rule accordingly.

#### Four-Quadrant Gate System

This section has not been revised in the final rule.

FRA received comments on the effectiveness rates assigned to four-quadrant gate systems in the interim final rule. The Ohio Rail Development Commission submitted comments asserting that the lower effectiveness rate assigned to 4-quadrant gate systems with vehicle presence detection acts as a disincentive against their use, even though vehicle presence detection can be critical to the safe operation of the 4-quadrant gate system. Railroad Controls Limited submitted similar comments requesting that FRA reconsider its position on this issue and acknowledge that 4-quadrant gate systems that incorporate vehicle presence detection provide a greater degree of safety to roadway users. After considering these comments, FRA did not revise the effectiveness rates assigned to four-quadrant systems equipped with vehicle presence detection because the vehicle presence detection system provides a potential opportunity for motorists to circumvent the grade crossing warning system. However, FRA notes that the rule assigns a higher effectiveness rate (.92) to four-quadrant gate systems equipped with vehicle presence detection, if traffic channelization devices at least 60 feet in length are also installed at the crossing. FRA also notes that more extensive use of 4-quadrant gates, which has begun to take place only over the past several years, will provide additional data that may permit an adjustment in the effectiveness rate within a reasonably short period.

#### Gates With Medians or Channelization Devices

The definition of channelization devices has been revised in the final rule to exclude surface-mounted tubular delineators, in response to comments expressing concern with the effectiveness of these devices. In particular, FRA notes that the North Carolina Department of Transportation submitted comments recommending that the rule prohibit the use of tube-type delineators that adhere directly to the roadway surface as approved channelization devices. These comments were especially troubling because FRA relied upon the positive results of a traffic study conducted in Charlotte, North Carolina when it allowed surface-mounted traffic delineators to be used as approved SSMs under the interim final rule.

FRA also received negative comments on the use of surface-mounted tubular delineators from Richard Calvin,

Maintenance Manager for the City of Malibu, California, which had installed these devices on the Pacific Coast Highway to discourage drivers from making left turns at inappropriate locations. Mr. Calvin asserted that motorists drove over the surface-mounted tubular delineators at such a high rate that the majority of the devices had to be replaced annually. Once the surface-mounted tubular delineators were removed and replaced with medians equipped with wide vertical markers, there was a dramatic reduction in associated maintenance costs.

The increased maintenance responsibility associated with surface-mounted tubular delineators was also discussed in comments from the Ohio Rail Development Commission, which asserted that traffic lane delineators should not be allowed as channelization devices because they are easy to drive through and can be easily broken. Richard Doll, Sr., Signal Systems Engineer for the Town of Greenwich, Connecticut, submitted comments suggesting that FRA revert back to the language within the NPRM, which only allowed the use of mountable curbs as approved channelization devices.

After considering these comments, FRA decided to revise the definition of channelization devices to exclude surface-mounted tubular delineators, given the maintenance responsibility associated with these devices and the impact that inadequate maintenance would have on the effectiveness of these devices. FRA decided to adopt an approach similar to that recommended by the North Carolina Department of Transportation of requiring permanent raised longitudinal channelizers as a component of approved median SSMs. FRA notes that it would be highly advisable to use raised longitudinal channelizers that are at least four inches high. Thus, under the final rule, vertical panels and tubular delineators can only be used as approved SSMs, if they are affixed to raised longitudinal channelizers or non-traversable curbs.

The requirements pertaining to this SSM have not been substantially revised in the final rule. However, edits have been made to requirement "e" in order to correct a typographical error and provide further clarification on when constant warning time devices must be installed. The final rule states that constant warning time devices are required when existing warning systems are renewed or when new automatic warning systems are installed, unless conditions at the crossing would prevent the proper operation of these devices.

FRA received comments on requirements "b" and "c". The Florida Department of Transportation submitted comments reiterating its position that 100-foot medians may not provide a sufficient deterrent effect. In support of this position, the Florida Department of Transportation asserted that 200-foot medians are more effective on heavily traveled, multi-lane urban roadways. Therefore, the Florida Department of Transportation recommended that traffic volume and the number of roadway lanes be evaluated when determining desirable median length. As stated in the Interim Final Rule, FRA agrees that use of 200-foot medians will often be recommended when practicable. However, FRA is merely prescribing a minimum 100-foot median length requirement. Public authorities may choose to install longer medians at their discretion.

With respect to requirement "c", FRA received comments from the City of Orange, California recommending that the rule be revised to allow commercial driveways within 60 feet of the crossing gate arm, provided they are equipped with directional signs and positive barricades (*i.e.*, "Pork Chop" medians). The City of Orange, California also asserted that low-volume commercial driveways should not be considered to be intersections for purposes of this rule. However, given the unique characteristics of each highway-rail grade crossing, FRA would prefer to review public authority applications for the use of these modified SSMs on a crossing-by-crossing basis. Therefore, requirement c has not been revised in the final rule.

#### One Way Street With Gate(s)

Only minor revisions have been made to the list of requirements for this SSM. Requirements "a" through "c" have not been revised in the final rule. However, requirement "d" has been revised to include Pre-Rule Partial Quiet Zones. Requirement "d" has also been revised to provide clarification of the circumstances under which the installation of constant warning time devices and power-out indicators would be required.

#### Permanent Closure of a Public Highway-Rail Grade Crossing

FRA has added permanent grade crossing closures to the list of approved SSMs in appendix A. Under the interim final rule, public authorities could receive credit for permanently closing a public grade crossing by including the crossing to be closed in the calculation of the Risk Index With Horns. However, the public authority could not include

the crossing in the calculation of the Quiet Zone Risk Index. As a result, the public authority could benefit from an increased Risk Index With Horns, but could not directly reduce the Quiet Zone Risk Index by permanently closing a public crossing.

FRA received comments on this issue from the DuPage Mayors and Managers Conference, the Chicago Department of Transportation, and the Chicago Area Transportation Study requesting that FRA reconsider this issue and allow public authorities to include a crossing to be closed in the calculation of the Quiet Zone Risk Index. After considering these comments and taking note of the fact that the interim final rule assigned an effectiveness rate of one to temporary crossing closures, FRA decided to include permanent grade crossing closures in the list of approved SSMs and to assign an effectiveness rate of one to this new SSM. However, the public authority must remember to adjust upward the traffic counts of adjacent crossings, in order to reflect the diversion of traffic from the newly closed crossing.

#### Credit for Pre-Existing SSMs

Sections B and C of this appendix have been added to the final rule to address quiet zone risk reduction credit for pre-existing SSMs. The procedures set forth in these sections provide quiet zone risk reduction credit by inflating the Risk Index With Horns. This reflects an assumption that the Risk Index With Horns would have been higher if the pre-existing SSMs were never implemented. As discussed in the preamble discussion of § 222.53, FRA decided to provide credit for pre-existing SSMs after receiving comments on this issue from individuals and organizations in the Chicago Region.

Section B sets forth the procedure by which a community seeking to create a New Quiet Zone or New Partial Quiet Zone can receive quiet zone risk reduction credit for pre-existing SSMs located within the proposed quiet zone. (It should, however, be noted that a public authority cannot receive credit for pre-existing permanent crossing closures or pre-existing grade separations.) Under this section, a public authority is instructed to calculate the current risk index for the grade crossing that is equipped with a pre-existing SSM. This current risk index will then be increased by dividing the index by one minus the SSM effectiveness rate, in order to calculate what the risk index for the grade crossing would have been if the SSM had never been implemented. This new risk index is then averaged with the

current risk indices for the other grade crossings within the proposed quiet zone, in order to calculate the new Risk Index With Horns for the proposed quiet zone. A public authority can then choose to establish a New Quiet Zone or New Partial Quiet Zone in comparison to either the new Risk Index With Horns or the Nationwide Significant Risk Threshold.

Section C sets forth the procedure by which a community seeking to continue a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone can receive quiet zone risk reduction credit for pre-existing SSMs located within the quiet zone. (Again, it should be noted that a public authority cannot receive credit for pre-existing permanent crossing closures or grade separations.) The public authority should first calculate the current risk index for the grade crossing that is equipped with a pre-existing SSM. This current risk index should then be reduced to reflect the risk reduction that could have been achieved if locomotive horns had been routinely sounded at the crossing. Based on FRA analysis of the effect of the locomotive horn on various crossing types, the following risk reduction percentages shall be applied: (a) Risk indices for passive crossings shall be reduced by 43%; (b) Risk indices for grade crossings equipped with automatic flashing lights shall be reduced by 27%; and (c) Risk indices for gated crossings shall be reduced by 40%.

This reduced risk index should then be increased by dividing it by one minus the SSM effectiveness rate, in order to calculate what the risk index would have been if locomotive horns routinely sounded, but no SSM had ever been implemented, at the grade crossing.

Since locomotive horns have been silenced at the other grade crossings within the quiet zone, the public authority will also have to reduce the current risk indices for the other grade crossings to reflect the risk reduction that could have been achieved if locomotive horns had been routinely sounded at those grade crossings. Please refer to step two for the list of approved risk reduction percentages by crossing type.

These new reduced risk indices should then be averaged with the new risk index for the grade crossing equipped with a pre-existing SSM, in order to calculate the new Risk Index With Horns for the quiet zone. A public authority can then choose to establish the quiet zone in comparison to the new Risk Index With Horns or the Nationwide Significant Risk Threshold.

#### *Appendix B—Alternative Safety Measures*

Appendix B addresses three types of ASMs: modified SSMs, non-engineering ASMs, and engineering ASMs. Modified SSMs are SSMs that do not fully comply with the provisions listed in appendix A. As provided in section I.B. of this appendix, public authorities can obtain risk reduction credit for pre-existing modified SSMs under the final rule. Non-engineering ASMs are programmed enforcement, public education and awareness, and photo enforcement that may be used to reduce risk in the creation of a quiet zone. Engineering ASMs are engineering improvements, other than modified SSMs, that reduce risk at highway-rail grade crossings. Examples of engineering ASMs include engineering improvements to geometric conditions and sight lines at the crossing.

#### Modified SSMs

Section I.A. of this appendix, which contains a discussion of modified SSMs and the process by which modified SSM effectiveness rates can be determined, has not been revised in the final rule. However, sections I.B. and I.C. of this appendix have been added to the final rule to address quiet zone risk reduction credit for pre-existing modified SSMs. The procedures set forth in these sections provide quiet zone risk reduction credit by inflating the Risk Index With Horns. This reflects an assumption that the Risk Index With Horns would have been higher if the pre-existing modified SSMs were never implemented. As discussed in the preamble discussion of § 222.53, FRA decided to provide credit for pre-existing modified SSMs after receiving comments on this issue from the Chicago Department of Transportation.

Section I.B. sets forth the procedure by which a community seeking to create a New Quiet Zone or New Partial Quiet Zone can receive quiet zone risk reduction credit for pre-existing modified SSMs located within the proposed quiet zone. Under this section, a public authority is instructed to calculate the current risk index for the grade crossing that is equipped with a pre-existing modified SSM. Once the public authority obtains FRA approval of the estimated effectiveness rate for the pre-existing modified SSM, the current risk index for the crossing should be increased by dividing the index by one minus the FRA-approved estimated effectiveness rate for the pre-existing modified SSM, in order to calculate what the risk index for the grade crossing would have been if the

pre-existing modified SSM had never been implemented. This new risk index is then averaged with the current risk indices for the other grade crossings within the proposed quiet zone, in order to calculate the new Risk Index With Horns for the proposed quiet zone. A public authority can then choose to establish a New Quiet Zone or New Partial Quiet Zone in comparison to either the new Risk Index With Horns or the Nationwide Significant Risk Threshold.

Section I.C. sets forth the procedure by which a community seeking to continue a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone can receive quiet zone risk reduction credit for pre-existing modified SSMs located within the quiet zone. The public authority should first calculate the current risk index for the grade crossing that is equipped with a pre-existing SSM. This current risk index should then be reduced to reflect the risk reduction that could have been achieved if locomotive horns had been routinely sounded at the crossing. Based on FRA analysis of the effect of the locomotive horn on various crossing types, the following risk reduction percentages shall be applied: (a) Risk indices for passive crossings shall be reduced by 43%; (b) Risk indices for grade crossings equipped with automatic flashing lights shall be reduced by 27%; and (c) Risk indices for gated crossings shall be reduced by 40%.

Once the public authority obtains FRA approval of the estimated effectiveness rate for the pre-existing modified SSM, the reduced risk index for the crossing should be increased by dividing it by one minus the FRA-approved estimated modified SSM effectiveness rate. This will calculate what the risk index would have been if locomotive horns routinely sounded, but no modified SSM had ever been implemented, at the grade crossing.

Since locomotive horns have been silenced at the other grade crossings within the quiet zone, the public authority will also have to reduce the current risk indices for the other grade crossings to reflect the risk reduction that could have been achieved if locomotive horns had been routinely sounded at those grade crossings. Please refer to step two for the list of approved risk reduction percentages by crossing type.

These new reduced risk indices should then be averaged with the new risk index for the grade crossing equipped with a pre-existing modified SSM, in order to calculate the new Risk Index With Horns for the quiet zone. A public authority can then choose to

establish the quiet zone in comparison to the new Risk Index With Horns or the Nationwide Significant Risk Threshold.

#### Non-Engineering ASMs

The final rule adds a new recordkeeping requirement for all non-engineering ASMs. FRA received comments on the interim final rule which expressed concern that non-engineering ASMs are not effective substitutes for the routine use of the locomotive horn. The North Carolina Department of Transportation submitted comments asserting that enforcement programs require constant application and significant resource allocation to generate significant safety benefits. The Metropolitan Transit Authority submitted similar comments and expressed concern that, over time, resources may be allocated to other issues, resulting in inconsistent enforcement at crossings. In response to these comments, FRA revised the final rule to require the public authority to retain all records pertaining to monitoring or sampling efforts at grade crossings within quiet zones, which are subject to non-engineering ASMs, for a period of not less than five years. These records shall also be made available, upon request, to FRA as provided by 49 U.S.C. 20107.

FRA received comments from the City of Elmhurst, Illinois recommending that the rule be revised to provide credit for past education and enforcement initiatives. Noting that it has worked on education and enforcement initiatives for over a decade, the City of Elmhurst, Illinois asserted it would be penalized under the approach taken in the interim final rule because it would be very difficult to further reduce the violation rate. FRA has not, however, revised the rule to provide credit for prior non-engineering initiatives because it would be nearly impossible to determine the baseline violation rate that existed before the non-engineering measures were undertaken.

The discussion of Public Education and Awareness programs has also been revised to correct a typographical error in requirement "b".

#### Engineering ASMs

The final rule adds a new category of ASMs to appendix B. This category consists of engineering improvements that fall outside the scope of modified SSMs. Examples of engineering ASMs include improvements to the geometric conditions and/or sight lines at the grade crossing.

This new category of ASMs has been added to the final rule in response to comments requesting greater flexibility

in the range of improvements that could qualify for SSM or ASM status. Noting that the interim final rule contained a limited range of safety measures that could be applied to a grade crossing for quiet zone risk reduction credit, the Northwest Municipal Conference submitted comments suggesting that the rule be revised to provide credit for improvements that address underlying geometric conditions that are a source of risk at grade crossings. The Village of Andover, Massachusetts submitted comments that strongly encouraged FRA to allow communities to qualify for quiet zone status on the basis of cost effective safety measures that are tailored to the risks and circumstances of each individual grade crossing. The City of Cumberland, Maryland submitted comments noting that there are a myriad of improvements that could "substitute for the sounding of a train horn", such as sight distance and geometric improvements, Intelligent Transportation Systems, and operational improvements. Noting that the interim final rule did not provide credit for relatively obvious safety improvements such as geometric changes and improvements to sight lines, the Chicago Area Transportation Study submitted comments recommending that the final rule provide credit for the on-site review of safety problems and the professional use of engineering judgment to address actual safety problems. In response to these comments, FRA added a new category to appendix B to make it clear that engineering improvements such as those which address underlying geometric conditions can qualify for quiet zone risk reduction credit as ASMs. However, if the Engineering ASM consists of vegetation clearance to improve sight lines, the quiet zone application should include a plan for periodic vegetation clearing that will ensure the continuation of unobstructed sight lines at the crossing.

Public authorities can determine the effectiveness of an Engineering ASM as follows:

1. The first step in assessing the effectiveness of an Engineering ASM is to establish the quarterly (3 months) baseline violation rate for the crossing at which the Engineering ASM will be applied. A violation in this context refers to a motorist not complying with the automatic warning devices at the crossing (not stopping for the flashing lights and driving over the crossing after the gate arms have started to descend, or driving around the lowered gate arms). A violation does not have to result in a traffic citation for the violation to be considered.



Violation data may be obtained by any method that can be shown to provide a statistically valid sample. This may include the use of video cameras, other technologies (e.g. inductive loops), or manual observations that capture driver behavior when the automatic warning devices are operating. In the event that data is not collected continuously during the quarter, sufficient detail must be provided in the application in order to validate that the methodology used results in a statistically valid sample. FRA recommends that at least a minimum of 600 samples (one sample equals one gate activation) be collected during the baseline and subsequent quarterly sample periods. The sampling methodology must take measures to avoid biases in their sampling technique. Potential sampling biases could include: sampling on certain days of the week but not others, sampling during certain times of the day but not others, sampling immediately after implementation of an ASM while the public is still going through an adjustment period, or applying one sample method for the baseline rate and another for the new rate. One possible approach to avoid sampling bias would be to break a three-month observation period into many time slots and then randomly selecting these slots for sampling. The baseline violation rate should be expressed as the number of violations per gate activations in order to normalize for unequal gate activations during subsequent data collection periods. The application should include enough detail on the method used to collect and assess the data to ensure that the results will provide a statistically valid result. While it is not mandatory, public authorities are encouraged to provide FRA with its sampling methodology for comment prior to actually collecting the data. This will enable FRA to provide comments to ensure that the sampling methodology is adequate.

2. The Engineering ASM should be initiated at the crossing. During this time period, the sounding of train horns will continue. Train horns will not be silenced until the quiet zone application has been formally approved by FRA.

3. In the calendar quarter following initiation, a new violation rate should be determined (using the same methodology as in paragraph a) and compared to the baseline violation rate for the crossing. The violation rate reduction for the crossing should then be determined by the following formula:

$$\text{Violation rate reduction} = (\text{new rate} - \text{baseline rate}) / \text{baseline rate}$$

*Example.* The baseline rate for a crossing was 60 violations per 100 gate activations. After implementation of the Engineering ASM, the new violation rate for the next quarter was 20 violations per 100 gate activations. The violation rate reduction would be 66% (.66).

4. Using the Engineering ASM effectiveness rate, determine the Quiet Zone Risk Index. If and when the Quiet Zone Risk Index for the proposed quiet zone has been reduced to a risk level at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold, the public authority may apply to FRA for approval of the quiet zone. Upon receiving written approval of the quiet zone application, the public authority may then proceed with notification and implementation of the quiet zone.

5. Violation rates must be monitored for the next two calendar quarters. Unless otherwise provided in FRA's notification of quiet zone approval, if the violation rate for these two calendar quarters does not exceed the violation rate used to determine the effectiveness rate that was approved by FRA, the public authority may cease violation rate monitoring.

*Example.* Continuing with the above example, the monitoring during the two calendar quarters following implementation of the quiet zone showed that the violation rate never exceeded 20 violations per 100 gate activations. Since the notification of quiet zone approval did not include any conditions requiring additional violation rate monitoring, the public authority may cease violation report monitoring.

6. In the event that the violation rate over either of the next two calendar quarters is greater than the violation rate used to determine the effectiveness rate that was approved by FRA, the public authority may continue the quiet zone for a third calendar quarter. However, if the third calendar quarter violation rate is also greater than the rate used to determine the effectiveness rate that was approved by FRA, a new effectiveness rate must be calculated and the Quiet Zone Risk Index re-calculated using the new effectiveness rate. If the new Quiet Zone Risk Index exceeds the Risk Index With Horns or the Nationwide Significant Risk Threshold, the procedures for dealing with unacceptable effectiveness after establishment of a quiet zone should be followed.

#### *Appendix C—Guide To Establishing Quiet Zones*

This appendix has been revised to incorporate changes made to the rule text and to reflect the current

Nationwide Significant Risk Threshold value.

#### *Appendix D—Determining Risk Levels*

This appendix has been revised to reflect the revised data set used to calculate the current Nationwide Significant Risk Threshold.

#### *Appendix E—Requirements for Wayside Horns*

Appendix E sets forth the minimum requirements for wayside horn use at highway-rail grade crossings. One such requirement, the minimum required sound level, has been revised in the final rule.

The interim final rule established a minimum required sound level of 96 dB(A), when measured 100 feet from the wayside horn in the direction in which it has been installed. However, the Village of Mundelein, Illinois submitted comments asserting that a wayside horn sound level of 92 dB(A) matches the sound level produced by a locomotive horn that has been set to 111 dB(A). Since the interim final rule established a maximum sound level of 110 dB(A) for locomotive horns, the Village of Mundelein argued that the minimum sound level for wayside horns should be reduced from 96 dB(A) to 92 dB(A), as measured 100 feet from the track. The City of Roseville, California, which has a wayside horn that has been set to 92 dB(A), submitted similar comments asserting that an increase of 4 dB(A) (to meet the minimum sound level required by the interim final rule) would negate much of the noise reduction benefits that are currently enjoyed by its residents. Noting that all existing wayside horn installations in Illinois, Iowa, Nebraska, and Kansas, are set at 92 dB(A), as measured 100 feet from the crossing, Hanson Wilson Incorporated submitted comments asserting that the interim final rule required wayside horns to provide a louder alarm on roadway approaches than the locomotive horn.

Railroad Controls Limited submitted comments asserting that the sound level of wayside horns should be measured from a location 100 feet from the crossing, as opposed to a location 100 feet from the wayside horn. Noting that all studies completed to date have established wayside horn sound levels in reference to the track, as opposed to the horn location, Railroad Controls Limited asserted that grade crossings at severely skewed crossing angles could create situations in which the wayside horn must be installed 50 feet or greater from the centerline of the track. This could result in wayside horn sound level measurements being taken from a

location 150 feet or greater from the track. In the alternative, sound level measurements taken 100 feet from the track would provide a more accurate measurement of the audible warning provided to motorists approaching the crossing.

After reviewing its previous analysis of the alerting power of a wayside horn, FRA determined that a wayside horn set to 92 dB(A) would provide a comparable audible warning. Therefore, FRA revised the final rule by reducing the minimum required sound level for wayside horns to 92 dB(A). In addition, FRA revised the final rule to require that wayside horn sound level measurements be taken from a location 100 feet from the centerline of the nearest track.

#### *Appendix F—Diagnostic Team Considerations*

Appendix F contains lists of issues that should be considered during diagnostic team reviews of grade crossings that have been proposed for inclusion within a quiet zone. In the interim final rule, this appendix contained a list of issues that should be considered when reviewing any highway-rail grade crossing that is proposed for inclusion within a quiet zone, as well as a list of issues that should be considered during diagnostic team reviews of private crossings in accordance with § 222.25. A third list of issues has been added in the final rule, which addresses diagnostic team reviews of pedestrian crossings required by § 222.27.

A minor revision has also been made to this appendix, in order to clarify that engineering personnel from the State agency responsible for grade crossing safety should also be invited to participate in diagnostic team reviews of grade crossings proposed for inclusion within a quiet zone.

#### *Appendix G—Schedule of Civil Penalties*

Appendix G contains the list of civil penalties that can be assessed for specific violations of Part 222. The list of civil penalties has been modified to state that routine sounding of the locomotive horn more than ¼-mile in advance of public highway-rail grade crossings and at highway-rail grade crossings located within quiet zones could subject the operating railroad to standard civil penalties of \$5,000 and willful civil penalties of \$7,500. A minor modification has also been made to this list in the final rule to correct a typographical error. Routine sounding of the locomotive horn at a grade crossing equipped with a wayside horn,

which could subject a railroad to standard penalties of \$5,000 and willful penalties of \$7,500, is now listed as a violation of § 222.59(d). Lastly, the footnote to this appendix has been revised to reflect the increased maximum civil penalty (\$27,000) which can be assessed by FRA when a grossly negligent violation or pattern of repeated violations has created an imminent hazard of death or injury or has actually caused death or injury.

#### *Section 229.129 Audible Warning Device*

Paragraph (a) of this section requires that each lead locomotive be equipped with an audible warning device that produces a minimum sound level of 96 dB(A) and a maximum sound level of 110 dB(A) at 100 feet forward of the locomotive in its direction of travel. The device shall be conveniently operated from the engineer's usual position during operation of the locomotive.

FRA received a number of comments asserting that the maximum sound level of 110 dB(A) was too high. City Councilman James Moore, representing Northwood, Ohio, submitted comments noting that OSHA has deemed noise levels above 80 dB(A) to be hazardous to your hearing. Margaret Petitjean, a commenter from Menlo Park, California, noted that the Environmental Protection Agency has compiled scientific information about the effects of noise exposure and defined 60 dB(A) as an acceptable sound level for residential noise exposure. The City of Rocky River, Ohio suggested that the maximum sound level be reduced to 65 dB(A), which would be consistent with the noise exposure experienced by communities around airports. At a February 2004 meeting in Western Springs, Illinois, Alderman Ginger Rugai, who represents Chicago's 19th Ward, suggested that 85 dB(A) be adopted as the maximum sound level for locomotive horns.

On the other hand, FRA received comments from the railroad industry stating that the maximum sound level of 110 dB(A) was too low. The Florida East Coast Railway asserted that a maximum sound level of 111 dB(A), which was originally proposed in the NPRM, should be reinstated. The Association of American Railroads submitted similar comments urging FRA to adopt a maximum sound level of 111 dB(A). Asserting that no explanation was provided in the interim final rule for the selection of the 110 dB(A) maximum sound level, the Association of American Railroads asserted that FRA appears to have acted in a somewhat arbitrary manner when making this

selection. If the maximum sound level was increased to 111 dB(A), the Association of American Railroads asserted that five-chime locomotive horns located in the mid-body section of the locomotive could be expected to meet this requirement without modification, which could have a significant impact on the regulatory burdens associated with this rule.

After considering these comments and reviewing its rationale for the 110 dB(A) maximum sound level requirement, FRA decided to retain the 110 dB(A) maximum sound level requirement. FRA's analysis indicates that there is a 95% likelihood that a locomotive horn set to 108 dB(A) will be detected by motorists approaching a grade crossing. Therefore, FRA considers 108 dB(A) to be the optimal sound level for the locomotive horn. FRA added a 2 dB(A) tolerance to the 108 dB(A) standard, in order to account for measurement uncertainty and fluctuations in horn sound level output. Given the strong concerns about potential noise exposure expressed by local communities, FRA remains unconvinced that the additional noise exposure that would result from a 111 dB(A) maximum sound level, plus or minus an additional 2 dB(A) tolerance for measurement uncertainty, is justifiable.

FRA also decided to retain the minimum horn sound level of 96 dB(A), which is already 12 dB(A) lower than the optimal locomotive horn sound level of 108 dB(A). A locomotive horn set to the optimal sound level of 108 dB(A) would have a sound level of approximately 95 dB(A) at the motorist decisionmaking point (50 feet in advance of the grade crossing). If FRA reduced the minimum sound level for locomotive horns by 4 dB, for example, the locomotive horn sound level would be drastically reduced to approximately 79 dB(A) at the motorist decision-making point. Despite the benefits in decreased noise exposure that might result from such a reduction, FRA is unwilling to reduce the minimum required sound level, given the corresponding reduction in horn effectiveness.

Paragraph (b) provides a schedule for locomotive horn testing. This schedule has been adjusted in the final rule to correspond to the final rule effective date. Locomotives built on or after June 24, 2005 must be tested and brought into compliance with this section. However, paragraph (b) of this section has been revised in response to comments which recommended that the rule be revised to allow for locomotive horn certification. The AAR submitted comments which noted that, if a

certification process were used, only a limited number of tests would be necessary under the rule. GM Electro Motive Division submitted comments recommending that the rule allow the locomotive horn manufacturer to certify the horn sound level output, while the locomotive manufacturer would certify that proper air supply is being provided to the horn mounting interface. On the other hand, General Electric submitted comments recommending a combination of type testing of the horn on the locomotive and laboratory testing for each horn produced. A type locomotive for the purpose of this rule would be defined as all locomotives utilizing the same horn model, configuration, and location, the same air pressure and delivery system, and the same locomotive roof configuration including the location of other roof mounted apparatus and devices. Once a specific type of locomotive has been successfully tested to show compliance, on-going validation would be limited to quantified testing of the horn sound level in a laboratory, preferably at the horn supplier's factory, and a non-quantified functional test of the horn on the locomotive prior to shipment.

After considering these comments, FRA has revised paragraph (b)(1) to allow type testing of new locomotives through a method similar to that which was proposed by General Electric. Under paragraph (b)(1), railroads and locomotive manufacturers will be allowed to use acceptance sampling to determine whether new locomotives meet the standards prescribed on this section. However, all sampling shall be performed on locomotive horns that have already been installed on the locomotive. Thus, acceptance sampling of locomotive horns prior to installation is not permitted under this section.

Paragraph (b)(1) requires that the acceptance sampling scheme used by the railroad must have a probability of .05 or less of rejecting a lot with a proportion of defectives equal to an AQL of 1% or less, as set forth in 7 CFR part 43.

Locomotives built before June 24, 2005 cannot be type tested to ensure compliance, but an additional year has been provided for the testing of these locomotives under the final rule. Even though the City of Fresno, California submitted comments urging FRA to advance the compliance date for existing locomotives to December 31, 2006, FRA decided to provide an additional year for the testing of existing locomotives to alleviate concerns expressed by the Association of American Railroads that the testing requirements set forth in the interim

final rule for existing locomotives were burdensome. Therefore, locomotives built before June 24, 2005 must be tested and brought into compliance with this section by June 24, 2010. However, the final rule retains the requirement that horns must be tested and brought into compliance with this section whenever a locomotive is rebuilt (as determined in accordance with 49 CFR 232.5).

Paragraph (c) specifies the testing and recordkeeping requirements and measurement procedures. This paragraph has been revised in the final rule in order to reduce any adverse impact that may have been associated with the testing requirements and measurement procedures contained within the interim final rule. However, paragraphs (c)(1) through (c)(4) have not been revised.

Paragraph (c)(5) has been revised in response to comments that the clearance restrictions contained within the interim final rule were impracticable. Asserting that many, if not most, railroads would be unable to meet the interim final rule minimum clearance requirements of 400 feet to the front of the locomotive and 200 feet to the side of the locomotive and horn, the Association of American Railroads recommended that the minimum clearance requirements be revised to allow 200 foot clearances to the front of the locomotive and 100 foot clearances to the side of the locomotive and horn. After considering these comments, FRA revised the minimum clearance requirements in the final rule to allow 200 foot clearances to the front and sides of the locomotive, even though FRA strongly recommends that 400 foot clearances to the front of the locomotive, where practicable.

FRA did not fully adopt AAR's recommendation out of concern with the increased error that may result from the introduction of large, reflective structures in close proximity to the testing microphone. Therefore, FRA adopted an approach comparable to ISO 3095 ("Measurement of noise emitted by railbound vehicles"), which calls for at least 57.7 meters (or 189 feet) clear of large reflecting objects around a stationary locomotive. Yard test facilities that are already in compliance with ISO 3095 should also be in compliance with the final rule, so this modification to the minimum clearance requirements should reduce any financial or operational burdens associated with the original clearance requirements contained within the interim final rule.

Paragraph (c)(6) has been revised to provide more flexibility in the parameters for acceptable horn testing

conditions. FRA received comments from the GM Electro Motive Division, General Electric, and the AAR which asserted that the required parameters for optimal horn testing conditions would have a significant adverse impact on locomotive manufacturers. In particular, the GM Electro Motive Division asserted that the temperature and humidity requirements contained within the interim final rule would prohibit horn testing at its Ontario facility for an average of 62 days out of the year. General Electric also submitted comments asserting that it would be forced to reduce its production of new locomotives, due to the parameters imposed by interim final rule for acceptable horn testing conditions. MotivePower, a manufacturer of commuter and switcher locomotives, submitted comments asserting that the minimum temperature requirements for locomotive horn testing could be problematic, as daytime temperatures at their location may not reach 32 degrees Fahrenheit during the wintertime. Therefore, MotivePower proposed that a standard set of data be taken and kept on record for each type of locomotive and locomotive horn. This data set could then be used to calibrate horn sound level measurements taken at temperature and humidity levels outside of those levels required by paragraph (c)(6) of the rule.

FRA has attempted to alleviate the potential impact of the rule's horn testing requirements by allowing type testing for new locomotives. However, FRA made additional modifications in the final rule by expanding the parameters for acceptable horn testing conditions. The acceptable ambient temperature range has been expanded in the final rule to include temperatures between 32 and 104 degrees Fahrenheit (0 to 40 degrees Celsius) inclusively.

Paragraph (c)(7) has been revised in response to comments requesting modifications in the horn testing protocol for cab-mounted and low-mounted horns. Noting that the locomotive horn has been placed at the bottom of its locomotive fleet, the Southern California Regional Rail Authority suggested that the rule be revised by requiring the testing of higher-mounted horns at 15 feet above the rail and lower-mounted horns at four feet above the rail. In a similar vein, Caltrain submitted comments noting that its locomotive horns have been relocated to a position that is four feet above the rail. Therefore, Caltrain suggested that the rule be revised to accept horn measurements taken at points between four and fifteen feet above the rail. The Association of

American Railroads also submitted comments recommended that the rule be revised to allow testing between four and fifteen feet above the ground and within eight and fifteen feet from the center line of the track to accommodate cab-mounted horns. After reviewing these comments, FRA revised the rule to allow testing of cab-mounted and low-mounted horns from a position four feet above the rail.

Paragraph (c)(7) has also been revised in response to comments from the Association of American Railroads requesting that the rule permit testing with the microphone positioned off from the track center to facilitate the use of permanent testing equipment. If testing of locomotive horns must take place directly in front of the locomotive, the Association of American Railroads argued that railroads would be unable to use permanent testing equipment as the equipment would obstruct train movements down the track. By allowing microphone positions offset from the center of the track, however, the use of permanent testing equipment to measure sound levels would become feasible and a more realistic measurement of motorist perception could be obtained. Therefore, the Association of American Railroads recommended that the rule be revised to allow microphone placement at an angle up to 45 degrees from the center line of the track.

After considering these comments and reviewing its analysis on this issue, FRA concluded that there is a three to six dB drop in sound level when the microphone is positioned at an angle of 45 degrees from the center of the track. However, there is less than a 1.5 dB drop in sound level when the microphone is positioned at an angle of less than 30 degrees from the center of the track. Therefore, FRA revised the final rule to allow locomotive horn testing, using a microphone positioned at an angle up to 20 degrees from the center of the track, in order to facilitate the use of permanent testing equipment.

Paragraph (c)(8) has not been revised. However, paragraph (c)(9) has been revised in the final rule to allow shorter horn sounding events. Under the interim final rule, railroads were required to take at least six 20-second sound level readings after the locomotive horn reached a stable sound level in order to determine the average locomotive horn sound level. However, the Association of American Railroads submitted comments recommending that the rule be revised to reduce the duration of the sound level readings to six to ten seconds, in order to reduce unnecessary noise exposure. After

considering these comments, FRA agreed that 10-second sound level measurements should be sufficient, once the locomotive horn reaches a stable sound level. Therefore, the final rule was revised to allow six 10-second sound level measurements after output from the locomotive horn system reaches a stable level.

Paragraph (c)(10) has been revised in the final rule to provide more specific recordkeeping requirements. The final rule requires railroads to record horn type, the location of horn testing, air flow and sound level measurements, in addition to the date and manner of testing. In addition, the person who performs horn testing is now required to sign the record, which shall be retained by the railroad, at a location of its choice, until a subsequent locomotive horn test is completed. The locomotive horn test record shall be made available to FRA upon request.

Paragraph (d) has not been revised. FRA received comments from NJ Transit recommending that this paragraph be revised to exclude light rail systems operating on the general railroad system pursuant to an FRA-approved Temporal Separation Plan. In the alternative, NJ Transit asserted that safety standards for audible warning sound levels on light rail operations could be adopted through the State safety oversight process. FRA has not, however, revised this paragraph to exclude all light rail operations on the general railroad system. Therefore, railroads that conduct light rail operations on the general railroad system pursuant to an FRA-approved Temporal Separation Plan must file a waiver under § 222.15 to obtain relief from the application of this provision. After reviewing the underlying circumstances, FRA may then grant relief on a case-by-case basis.

**17. Regulatory Impact**

*A. Executive Order 12866 and DOT Regulatory Policies and Procedures*

This Final Rule has been evaluated in accordance with existing policies and procedures and is considered to be significant under both Executive Order 12866 and DOT policies and procedures. FRA has prepared and placed in the docket a regulatory evaluation of the rule. Following is a summary of the findings.

FRA identified 1,598 existing whistle ban or no-horn crossings that would qualify for inclusion in Pre-Rule Quiet Zones. FRA also identified 372 potential New Quiet Zone crossings and 71 potential Intermediate Quiet Zone crossings. Using information available about the crossing characteristics and

the number of persons that would be or currently are severely affected by the sounding of train horns, FRA estimated the costs and benefits of the actions that communities would take in response to this rule. FRA believes that many communities will take advantage of the many options available to establish quiet zones. Some existing whistle ban crossings may not be included in quiet zones. FRA also estimated the costs associated with the maximum horn sound level requirements.

The table below presents estimated twenty-year monetary costs associated with complying with the requirements contained in the Final Rule using a 7 percent discount rate.

**TOTAL TWENTY-YEAR COSTS (PV, 7%)<sup>3</sup>**

Maximum Horn Sound Level Relocations Due to Resumption of Horn Sounding .....	\$3,136,020
Pre-Rule Quiet Zones—Nationwide, Excluding Chicago Area .....	1,676,663
Intermediate Quiet Zones .....	14,827,438
New Quiet Zones .....	4,790,469
Annual Update of NSRT/QZRIs and Notification .....	16,261,900
	25,426

Total Twenty-Year Costs associated with implementation of this rule are estimated to total \$40,717,916 (PV, 20 Years, 7%).

In general there has been a downward trend in collisions at grade crossings nationwide due to the implementation of various private and public safety initiatives such as Operation Lifesaver and other public education and awareness campaigns. Costs presented in this analysis may be overstated to the extent that such initiatives would lead to the eventual implementation of some of the same or equivalent safety measures that this rule requires for the establishment of quiet zones. In such cases, this rule may be merely accelerating implementation and the rate of expenditures.

The direct safety benefit of this Final Rule is the reduction in casualties that result from collisions between trains and highway users at public at-grade highway-rail crossings. Implementation of this rule will ensure that (1) locomotive horns are sounded to warn highway users of approaching trains; or (2) rail corridors where train horns do not sound will have a level of risk that

<sup>3</sup> Present Value (PV) provides a way of converting future benefits and costs into equivalent dollars today so that benefit and cost streams that involve different time paths may be compared. The formula used to calculate these flows is:  $1/(1+I)^t$  where "I" is the discount rate, and "t" is the year. Per guidance from the Office of Management and Budget, a discount rate of .07 is used in this analysis.

is no higher than the average risk level at gated crossings nationwide where locomotive horns are sounded regularly; or (3) the effectiveness of horns is compensated for in rail corridors where train horns do not sound.

FRA has reviewed trends in collision rates for whistle ban crossings going back to 1980 and believes that collision rates over the twenty-years that this analysis covers will be no higher than 4 percent. The following table presents anticipated twenty-year safety benefits expressed in monetary terms assuming that collisions decline at an average rate of 4 percent annually and using a 7 percent discount rate.

**TOTAL TWENTY-YEAR SAFETY  
BENEFITS MONETIZED (PV, 7%)**

Maximum Sound Level .....	Not Quantifiable
Casualties Prevented (Cancellation of W-Bans) .....	\$5,810,789
Pre-Rule QZs Nationwide (Excluding Chicago Area) .....	26,422,526
Intermediate Quiet Zones .....	6,302,667
New Quiet Zones .....	18,602,675
<b>Total .....</b>	<b>57,138,657</b>

In terms of collisions and casualties, over the next twenty years, FRA anticipates implementation of this rule will result in the prevention of 95 collisions, 8 fatalities, and 46 injuries.

In addition to the prevention of casualties, FRA estimates that, over the next twenty years, this collision prevention will result in a reduction of approximately \$300,000 in highway vehicle, railroad equipment, and track damage.

This analysis covers the first twenty years of the rule and includes some compliance costs that will be incurred towards the end of the period. Unlike the benefits associated with costs incurred in the early years of the rule, much of the twenty-year stream of benefits associated with these costs is not captured in this analysis. Safety benefits are understated to the extent that many years of safety benefits resulting from safety measures implemented in out-years are not included.

Some of the unquantified benefits of this Final Rule include reductions in freight and passenger train delays, both of which can be very significant when grade crossing collisions occur, and collision investigation efforts. Although these benefits are not quantified in this analysis, their monetary value is significant.

Because such events are rare, FRA has not attempted to estimate the value of avoiding events in which a highway-rail collision results in a derailment, with harm to persons on the train or release of hazardous materials into the community.

Maximum horn sound level requirements will limit community disruption by not allowing horns to be sounded any louder than necessary to provide motorists with adequate warning of a train's approach. The benefit in noise reduction due to this change in maximum horn loudness is not readily quantifiable.

Another unquantified benefit of this rule is elimination of some locomotive horn noise disruption to some railroad employees and those who may reside near industrial areas served by railroads. Locomotive horns will no longer have to be sounded at individual highway-rail grade crossings at which the maximum authorized operating speed for that segment of track is 15 miles per hour or less and properly equipped flaggers (as defined in by 49 CFR 234.5, but who for purposes of this rule can also be crew members) provide warning to motorists. This rule will allow engineers, who were probably already exercising some level of discretion as to the duration and sound level of locomotive horn sounding, to stop sounding the horn under these circumstances at no additional cost.

This analysis does not quantify the benefit of eliminating community disruption caused by the sounding of train horns, nor does it quantify costs from increased noise at crossings where horns will sound where they were previously silent.

In an effort to determine the costs to a community associated with the locomotive horn, FRA examined the effects of sounding of locomotive horns on property values. This effort was based on the assumption that property values reflect concerns of property owners that are often subjective and otherwise difficult to quantify. For a full discussion of the effects of sounding locomotive horns on property values, see appendix A to the Regulatory Evaluation.

Research shows that residential property markets are influenced by a variety of factors including structural features of the property, local fiscal conditions, and neighborhood characteristics. Hedonic housing price models treat a property as a bundle of characteristics, with each individual characteristic generating an influence on the price of the property. For example, additional structural characteristics such as bathrooms, bedrooms, interior

or exterior square footage increase the value of residential properties. Likewise, neighborhood characteristics are expected to influence property prices. For example, homes that are in relatively close proximity to noxious activities such as hazardous waste sites, incinerators, etc. have been shown to have lower values, other things equal. Thus, a carefully designed hedonic model can be used to implicitly value locational attributes that have no explicit market price.

The effects of the sounding of locomotive horns on property values have been studied recently in response to the NPRM. While initial results are available, unfortunately they are not conclusive. David E. Clark performed one study for the FRA, and Schwieterman and Baden of the Chaddick Institute performed the other. According to Clark, the study performed for FRA was "just a first step in understanding how train whistles influence local property values." Schwieterman and Baden of the Chaddick Institute emphasize that their "report is a preliminary assessment of a complex issue. Some of our findings are speculative in nature." Those who have studied the issue agree that further study is needed to reach a better understanding of the true effects of locomotive horn sounding on property values. Clark concluded that there is little indication that the decision of a railroad to ignore whistle bans (and thus sound the locomotive horn) had any permanent and appreciable influence on the housing values in the three communities analyzed. Clark offers two explanations for the lack of effect on property values. First, those buying property within the audible range of a highway-rail grade crossing likely consider the possibility that train whistles may be sounded at the crossing in the future. Second, the railroad's action generated dynamic changes in the composition of residents that served to mitigate the initial impact of the action. Residents most sensitive to the sounding of locomotive horns moved away and were replaced with those less sensitive to such sounding.

The Chaddick Institute study evaluated the probable costs of the noise generated by locomotive horns at grade crossings in the Chicago area. The study concluded that the region would experience significant losses in property value from sounding of horns at crossings currently subject to whistle bans. The study also concluded that even if property values do not fall, homeowners that are forced to move away may incur other real economic costs. For the reasons discussed in

appendix A to the Regulatory Evaluation, FRA has concluded that it is not likely that the overall costs associated with sounding the horns where they are not currently sounded will be as high as the Chaddick Institute study concludes.

Although there are airport and highway hedonic property value studies, FRA has not applied them to grade crossings for a number of reasons. The types of noise experienced by residents near highways and airports can be different from that experienced by residents near highway-rail grade crossings. Highways and airports where noise is an issue have higher daily volumes of motor vehicle and aircraft traffic than grade crossings with whistle bans. The noise produced by locomotive horns at crossings is also generally more intermittent than that produced at airports and highways.

The effect of highways and airports on nearby property values can also be very different than that of highway-rail at-grade crossings on nearby property values. For instance, airports are a source of employment for residents in the community. Although airport employees may not desire to reside in properties immediately adjacent to airports, they probably want to reside relatively close by. Few highway users desire to reside in properties immediately adjacent to highways, however many probably want to reside close enough to have easy access to highways. Such situations may greatly influence the magnitude of difference between property values of residences immediately adjacent to highways and airports compared to property values of residences that are still very close to highways and airports yet not adjacent. Since there generally is no incentive to residing near highway-rail at-grade crossings (unless there happens to be a commuter rail station nearby) the difference in property values between residences immediately adjacent to grade crossings and those a little further away is probably not as great.

Studies of airport and highway noise compare property values of residences adjacent to the source of noise to property values of residences that are near but not adjacent to the source of noise. To isolate the effect of the noise itself and thereby make these studies more relevant to the highway-rail grade crossing context, the effect of the incentive for residing nearby, versus adjacent to, would have to be removed from the studies of airport and highway noise. Given the differences in (1) types of noise produced by highway vehicles and aircraft versus locomotive horns and (2) effects of highways and airports

on nearby property values versus effects of grade crossings on property values, FRA believes that results from hedonic studies of airport and highway noises on property values are not directly transferable to locomotive horn noise effects on property values.

It is important to note that since this rule is permissive as to the establishment of quiet zones, communities will establish quiet zones to the extent that the perceived benefit of elimination of the train horn disruption coupled with the safety benefit of any safety enhancements exceeds the costs of compliance associated with the requirements for establishing New Quiet Zones.

FRA is confident that the benefits in terms of lives saved and injuries prevented will exceed the costs imposed on society by this rule.

#### *B. Regulatory Flexibility Act*

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 *et seq.*) requires a review of final rules to assess their impact on small entities unless the Secretary certifies that a final rule will not have a significant economic impact on a substantial number of small entities. Data available to FRA indicates that this rule may have minimal economic impact on a substantial number of small entities (railroads) and possibly a significant economic impact on a few small entities (government jurisdictions and small businesses). However, there is no indication that this rule will have a significant economic impact on a substantial number of small entities. The Small Business Administration (SBA) did not submit comments to the docket for this rulemaking in response to the Initial Regulatory Flexibility Assessment that accompanied the NPRM or the Regulatory Flexibility Assessment that accompanied the Interim Final Rule. FRA certifies that this rule will not have a significant economic impact on a substantial number of small entities.

FRA has performed a Final Regulatory Flexibility Assessment (FRFA) on small entities that potentially can be affected by this Final Rule. The FRFA is summarized in this preamble as required by the Regulatory Flexibility Act. The full FRFA is included in the Regulatory Evaluation, which is available in the public docket of this proceeding.

This is essentially a safety rule that implements as well as minimizes the potential negative impacts of a Congressional mandate to blow train whistles and horns at all public crossings. Some communities believe that the sounding of train whistles at

every crossing is excessive and an infringement on community quality of life, and therefore have enacted "whistle bans" that prevent the trains from sounding their whistles entirely, or during particular times (usually at night). Some communities would like to establish "quiet zones" where train horns would not be routinely sounded, but are awaiting issuance of this rule to do so. FRA is concerned that with the increased risk at grade crossings where train whistles are not sounded, or another means of warning utilized, collisions and casualties may increase significantly. The rule contains low risk based provisions for communities to establish quiet zones. Some crossing corridors may already be at risk levels that are permissible under this rule and would not need to reduce risk levels any further to establish quiet zones. Otherwise, communities establishing Pre-Rule Quiet Zones may implement sufficient safety measures along whistle-ban corridors to reduce risk to permissible levels. In addition to having permissible risk levels, all crossings in New and Intermediate Quiet Zones will have to be equipped with gates and flashing lights. If a community elects to simply follow the mandate, horn sounding will resume and there will be a noise impact on small businesses that exist along crossings where horns are not currently routinely sounded. If a community elects to implement sufficient safety measures to comply with the requirements for establishing a quiet zone, then the governmental jurisdiction will be impacted by the cost of such program or system. To the extent that potential quiet zone crossing corridors already have average risk levels permissible under this rule, and, in the case of New and Intermediate Quiet Zones, every crossing is equipped with gates and flashing lights, communities will only incur administrative costs associated with establishing and maintaining quiet zones.

The costs of implementing this Final Rule will predominately be on the governmental jurisdictions of communities some of which are "small governmental jurisdictions." As defined by the SBA this term means governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than fifty thousand. The most significant impacts from this rule will be on about 260 governmental jurisdictions whose communities currently have either formal or informal whistle bans in place. FRA estimates that approximately 70 percent (*i.e.* 193

communities) of these governmental jurisdictions are considered to be small entities.

FRA has recently published final a policy which establishes “small entity” as being railroads which meet the line haulage revenue requirements of a Class III railroad. As defined by 49 CFR 1201.1-1, Class III railroads are those railroads who have annual operating revenues of \$20 million per year or less. Hazardous material shippers or contractors that meet this income level will also be considered as small entities. FRA is using this definition of small entity for this rulemaking. The FRA believes that approximately 640 small railroads would be minimally impacted by train horn sound level testing requirements contained in this rule. In addition, some small businesses that operate along or nearby rail lines that currently have whistle bans in place that potentially may not after the implementation of this rule, could be moderately impacted.

Alternative options for complying with this rule include allowing the train whistle to be blown. This alternative has no direct costs associated with it for the

governmental jurisdiction. Other alternatives include “gates with median barriers” which are estimated to cost between \$13,000 and \$15,000 for simple installations; upgrade two-quadrant gate systems to four-quadrant gate systems at an estimated cost of \$100,000–\$300,000 plus annual maintenance costs of \$2,500–\$3,000; and “Photo enforcement” which is estimated to cost \$28,000–\$65,500 per crossing, and have annual maintenance costs of \$6,600–\$24,000 per crossing. Finally, FRA has not limited compliance to the lists provided in appendix A or appendix B of the rule. The rule provides for supplementary safety measures that might be unique or different. For such an alternative, an analysis would have to accompany the option that would demonstrate that the number of motorists that violate the crossing is equivalent of less than that of blowing the whistle. FRA intends to rely on the creativity of communities to formulate solutions which will work for that community.

FRA does not know how many small businesses are located within a distance of the affected highway-rail crossings

where the noise from the whistle blowing could be considered to be nuisance and bad for business. Concerns have been advanced by owners and operators of hotels, motels and some other establishments as a result of numerous town meetings and other outreach sessions in which FRA has participated during development of this rule. If supplementary safety measures are implemented to create a quiet zone then such small entities should not be impacted. FRA held 12 public hearings nationwide following issuance of the NPRM and requested comments to the docket from small businesses that feel they will be adversely impacted by the requirements contained in the NPRM. FRA received no comments in response.

C. Paperwork Reduction Act

The information collection requirements in this final rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.* The sections that contain the new information collection requirements and the estimated time to fulfill each requirement are as follows:

CFR Section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours	Tot. annual burden cost
222.11—Penalties .....	340 Public Authorities.	5 false reports/rcd	2 hours .....	10 hours .....	\$370
222.15—Petitions for Waivers .....	340 Public Authorities.	5 petitions .....	4 hours .....	20 hours .....	740
222.17—Applications To Be Recognized as a State Agency.	68 State Agencies	13 applications .....	8 hours .....	104 hours .....	6,344
222.39—Establishment of Quiet Zones:					
—Public Authority Application to FRA.	340 Public Authorities.	105 Applications ...	80 hours .....	8,400 hours .....	512,400
—Diagnostic Team Reviews	340 Public Authorities.	53 reviews .....	32 hours .....	1,696 hours .....	0 (Cost incl. RIA)
—Updated Crossing Inventory Form.	340 Public Authorities.	302 forms .....	1 hour .....	302 hours .....	0 (Cost incl. RIA)
—60-Day Comment Period: Copies of Quiet Zone Application.	340 Public Authorities.	630 copies .....	10 minutes .....	105 hours .....	6,405
—Comments on Applications .....	340 Public Authorities.	2 comments .....	2.5 hours .....	5 hours .....	185
222.41—Pre-Rule Quiet Zones Which Qualify For Automatic Approval—Notices/Notice Copies.	262 communities/ Pub. Auth..	262 notices + 1572 notifications.	40 hours + 10 min.	10,742 hours .....	0 (Cost incl. RIA)
—Certifications .....	262 communities/ Pub. Auth..	262 certifications ..	5 minutes .....	22 hours .....	0 (Cost incl. RIA)
—Updated Grade Crossing Inventory Forms.	200 communities/ Pub. Auth..	1,182 Forms .....	1 hour .....	1,182 hours .....	0 (Cost incl. RIA)
—Pre-Rule Quiet Zones That Will Not Be Established By Automatic Approval.	103 Communities	103 notices + 618 notifications.	40 hours + 10 min.	4,223 hours .....	0 (Cost incl. RIA)
—Certifications .....	103 Communities	103 certifications ..	5 minutes .....	9 hours .....	0 (Cost incl. RIA)
—Updated Crossing Inventory Forms.	103 Communities	416 Forms .....	1 hour .....	416 hours .....	0 (Cost incl. RIA)
222.42—Intermediate Quiet Zones and Intermediate Partial Quiet Zones—Notices/Notifications.	3 Communities .....	3 notices + 18 notifications.	40 hours + 10 min.	123 hours .....	7,503



CFR Section	Respondent universe	Total annual responses	Average time per response	Total annual burden hours	Tot. annual burden cost
—Updated Grade Crossing Inventory Forms.	3 Communities .....	71 Forms .....	1 hour .....	71 hours .....	0 (Cost incl. RIA)
222.43—Notice and Other Information Required to Establish a Quiet Zone.	99 Communities ...	99 notices + 594 notifications.	40 hours + 10 min.	4,059 hours .....	247,599
—Updated Grade Crossing Inventory Forms.	302 Communities	376 Forms .....	1 hour .....	376 hours .....	0 (Cost incl. RIA)
—60-Day Comment Period on Notices of Intent.	715 Railroads/ State Agencies.	70 comments .....	4 hours .....	280 hours .....	10,360
—Notice of Intent to Continue Pre-Rule Quiet Zone or Partial Quiet Zone.	177 Communities	177 notices + 1,062 notification.	1 hour + 10 min. ..	354 hours .....	21,594
—Updated Grade Crossing Inventory Forms.	177 Communities	1,100 Forms .....	1 hour .....	1,100 hours .....	67,100
—Certifications Continuing Quiet Zones.	177 Communities	177 certifications ..	5 minutes .....	15 hours .....	0 (Cost incl. RIA)
—Certifications Establishing Quiet Zones.	97 Communities ...	97 certifications ....	5 minutes .....	8 hours .....	0 (Cost incl. RIA)
222.47—Periodic Updates:					
—Quiet Zones Which Do Not Have Supplementary Safety Measures at Each Public Crossing.	200 Public Authorities.	9 Affirmations + 54 Copies.	30 minutes + 2 min.	6 hours .....	0 (Cost incl. RIA)
—Updated Crossing Inventory Forms.	200 Public Authorities.	45 Forms .....	1 hour .....	45 hours .....	0 (Cost incl. RIA)
222.51—Review of Quiet Zone Status—Public Authority Written Statements/Commitments.	9 Public Authorities.	2 statements .....	5 hours .....	10 hours .....	610
—Review at FRA’s Initiative—Comments.	3 Public Authorities.	60 comments .....	30 minutes .....	30 hours .....	1,830
222.55—Approval of New SSMs or ASMs—Letters.	265 Interested Parties.	1 letter .....	30 minutes .....	1 hour .....	61
—Comments .....	265 Interested Parties.	5 comments .....	30 minutes .....	3 hours .....	183
—Demo of New SSM/ASM & Approval Application.	265 Interested Parties.	1 letter .....	30 minutes .....	1 hour .....	61
222.57—Review of Assoc. Administrator’s Actions.	265 Public Authorities/Int. Parties.	1 petition + 6 petition copies.	1 hour + 2 min. ....	1 hour .....	61
—Petition For Reconsideration by Pub. Authority.	200 Public Authorities.	1 petition + 6 petition copies.	5 hours + 2 min. ..	5 hours .....	305
—Additional Documents/Materials	200 Public Authorities.	1 document .....	2 hours .....	2 hours .....	122
—Request For Informal Hearing	200 Public Authorities.	1 letter .....	30 minutes .....	1 hour .....	61
222.59—Use of Wayside Horns—Notices/Copies.	200 Public Authorities.	10 notices + 60 notice copies.	5 hours + 10 min.	60 hours .....	3,660
Appendix B: Non-Engineering ASMs:					
—Records For Programmed Enforcement/Public Educ..	200 Public Authorities.	20 records .....	500 hours .....	10,000 hours .....	610,000
—Records For Photo Enforcement.	200 Public Authorities.	20 records .....	9 hours .....	180 hours .....	10,980
229.129—Audible Warning Devices—Testing Reports or Records.	684 Railroads .....	23,230 records .....	1 hour .....	23,230 hours .....	859,510
—Retests of Locomotive Horns—Records.	684 Railroads .....	650 records .....	1 hour .....	650 hours .....	24,050

All estimates include the time for reviewing instructions; searching existing data sources; gathering or maintaining the needed data; and reviewing the information. For information or a copy of the paperwork

package submitted to OMB, contact Robert Brogan at 202-493-6292.

OMB is required to make a decision concerning the collection of information requirements contained in this final rule between 30 and 60 days after

publication of this document in the **Federal Register**.

FRA cannot impose a penalty on persons for violating information collection requirements which do not display a current OMB control number, if required. FRA intends to obtain

current OMB control numbers for any new information collection requirements resulting from this rulemaking action prior to the effective date of a final rule. The OMB control number, when assigned, will be announced by separate notice in the **Federal Register**.

#### *D. Environmental Impact*

A Record of Decision has been prepared and is available in the public docket.

#### *E. Federalism Implications*

Executive Order 13132, entitled, "Federalism," issued on August 4, 1999, requires that each agency "in a separately identified portion of the preamble to the regulation as it is to be issued in the **Federal Register**, provides to the Director of the Office of Management and Budget a Federalism summary impact statement, which consists of a description of the extent of the agency's prior consultation with State and local officials, a summary of the nature of their concerns and the agency's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met.  
\* \* \*

FRA has complied with E.O. 13132 in issuing this rule. FRA consulted extensively with State and local officials prior to issuance of the NPRM, and we have taken very seriously the concerns and views expressed by State and local officials as expressed in written comments and testimony at the various public hearings throughout the country. FRA staff provided briefings to many State and local officials and organizations during the comment period to encourage full public participation in this rulemaking. As discussed earlier in this preamble, because of the great interest in this subject throughout various areas of the country, FRA was involved in an extensive outreach program to inform communities which presently have whistle bans of the effect of the Act and the regulatory process. Since the passage of the Act, FRA headquarters and regional staff have met with a large number of local officials. FRA also held a number of public meetings to discuss the issues and to receive information from the public. In addition to local citizens, both local and State officials attended and participated in the public meetings. Additionally, FRA took the unusual step of establishing a public docket before formal initiation of rulemaking proceedings in order to enable citizens and local officials to comment on how FRA might implement

the Act and to provide insight to FRA. FRA received comments from representatives of Portland, Maine; Maine Department of Transportation; Acton, Massachusetts; Wisconsin's Office of the Commissioner of Railroads; a Wisconsin State representative; a Massachusetts State senator; the Town of Ashland, Massachusetts; Bellevue, Iowa; and the mayor of Batavia, Illinois.

Since passage of the Act in 1994, FRA has consulted and briefed representatives of the American Association of State Highway and Transportation Officials (AASHTO), the National League of Cities, National Association of Regulatory Utility Commissioners, National Conference of State Legislatures, and others. Additionally we have provided extensive written information to all United States Senators and a large number of Representatives with the expectation that the information would be shared with interested local officials and constituents.

Prior to issuance of the NPRM, FRA had been in close contact with, and has received many comments from Chicago area municipal groups representing suburban areas in which, for the most part, locomotive horns are not routinely sounded. The Chicago area Council of Mayors, which represents over 200 cities and villages with over four million residents outside of Chicago, provided valuable information to FRA as did the West Central Municipal Conference and the West Suburban Mass Transit District, both of suburban Chicago.

Another association of suburban Chicago local governments, the DuPage [County] Mayors and Managers Conference, provided comments and information. Additionally, FRA officials met with many Members of Congress, who have invited FRA to their districts and have provided citizens and local officials with the opportunity to express their views on this rulemaking process. These exchanges, and others conducted directly through FRA's regional crossing managers, have been very valuable in identifying the need for flexibility in preparing the proposed rule.

Under 49 U.S.C. 20106, issuance of this regulation preempts any State law, rule, regulation, order, or standard covering the same subject matter, except a provision necessary to eliminate or reduce an essentially local safety hazard, that is not incompatible with Federal law or regulation and does not unreasonably burden interstate commerce. For further discussion of the effect of this rule on State and local laws and ordinances, see § 222.7 and its accompanying discussion.

As noted, this rulemaking is required by 49 U.S.C. 20153. The statute both requires that the Department issue this rule and sets out clear guidance as to the structure of such rule. The statute clearly and unambiguously requires the Department to issue rules requiring locomotive horns to be sounded at every public grade crossing. The Department has no discretion as to this aspect of the rule. The statute also makes clear that the Federal government must have a leading role in establishing the framework for providing exceptions to the requirement that horns sound at every public crossing. While some States and communities expressed opposition to Federal involvement in this area which historically has been subject to State regulation, the majority of State and local community commenters recognized and accepted the statutorily required Federal involvement. Of concern to many of these commenters, however, was the issue as to whether States or local communities should have primary responsibility for creation of quiet zones. As further discussed in the section-by-section analysis regarding "Who may establish a quiet zone?", States generally felt that they should have a primary role in establishing quiet zones and in administering a quiet zone. Comments from local governments tended to support the contrary view that local political subdivisions should establish quiet zones. A review of § 20153 indicates a clear Congressional preference that decision-makers be local authorities. This final rule provides non-Federal parties extensive involvement in decision-making pertaining to the creation of quiet zones. This final rule has increased the role of States in creation of quiet zones and has provided more opportunities for non-Federal parties, including States to have input in decisions made regarding creation and termination of quiet zones. However, given the nature of the competing interests of State and local governments in this area, FRA could not fully meet the concerns of both groups. For the reasons detailed in the section-by-section analysis, of the final rule and the interim final rule, the concerns of local communities have been substantially met.

#### *F. Compliance With the Unfunded Mandates Reform Act of 1995*

Pursuant to the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) each Federal agency "shall, unless otherwise prohibited by law, assess the effects of Federal Regulatory actions on State, local, and tribal governments, and the private sector (other than to the extent

that such regulations incorporate requirements specifically set forth in law.” Sec. 201. Section 202 of the Act further requires that “before promulgating any general notice of proposed rulemaking that is likely to result in promulgation of any rule that includes any Federal mandate that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100,000,000 or more (adjusted annually for inflation)[currently \$120,700,000] in any one year, and before promulgating any final rule for which a general notice of proposed rulemaking was published, the agency shall prepare a written statement \* \* \* detailing the effect on State, local and tribal governments and the private sector. The rule issued today will not result in the expenditure, in the aggregate, of \$120,700,000 or more in any one year, and thus preparation of a statement is not required.

#### G. Energy Impact

Executive Order 13211 requires Federal agencies to prepare a Statement of Energy Effects for any “significant energy action.” 66 FR 28355 (May 22, 2001). Under the Executive Order, a “significant energy action” is defined as any action by an agency (normally published in the **Federal Register**) that promulgates or is expected to lead to the promulgation of a final rule or regulation, including notices of inquiry, advance notices of proposed rulemaking, and notices of proposed rulemaking: (1)(i) That is a significant regulatory action under Executive Order 12866 or any successor order, and (ii) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. FRA has evaluated this Final rule in accordance with Executive Order 13211 and has determined that this Final Rule is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Consequently, FRA has determined that this regulatory action is not a “significant energy action” within the meaning of Executive Order 13211.

#### 18. Privacy Act Statement

Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment), if submitted on behalf of an association, business, labor union, etc.). You may review DOT’s complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (volume 65,

Number 70; Pages 19477–78) or you may visit <http://dms.dot.gov>.

#### List of Subjects

##### 49 CFR Part 222

Administrative practice and procedure, Penalties, Railroad safety, Reporting and recordkeeping requirements.

##### 49 CFR Part 229

Locomotives, Penalties, Railroad safety.

■ In consideration of the foregoing, FRA is amending chapter II, subtitle B of title 49, Code of Federal Regulations as follows:

■ 1. Part 222 is added to read as follows:

#### PART 222—USE OF LOCOMOTIVE HORNS AT PUBLIC HIGHWAY-RAIL GRADE CROSSINGS

##### Subpart A—General

Sec.

222.1 What is the purpose of this regulation?

222.3 What areas does this regulation cover?

222.5 What railroads does this regulation apply to?

222.7 What is this regulation’s effect on State and local laws and ordinances?

222.9 Definitions.

222.11 What are the penalties for failure to comply with this regulation?

222.13 Who is responsible for compliance?

222.15 How does one obtain a waiver of a provision of this regulation?

222.17 How can a State agency become a recognized State agency?

##### Subpart B—Use of Locomotive Horns

222.21 When must a locomotive horn be used?

222.23 How does this regulation affect sounding of a horn during an emergency or other situations?

222.25 How does this rule affect private highway-rail grade crossings?

222.27 How does this rule affect pedestrian crossings?

##### Subpart C—Exceptions to the Use of the Locomotive Horn

222.31 [Reserved]

##### Silenced Horns at Individual Crossings

222.33 Can locomotive horns be silenced at an individual public highway-rail grade crossing which is not within a quiet zone?

##### Silenced Horns at Groups of Crossings—Quiet Zones

222.35 What are minimum requirements for quiet zones?

222.37 Who may establish a quiet zone?

222.38 Can a quiet zone be created in the Chicago Region?

222.39 How is a quiet zone established?

222.41 How does this rule affect Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones?

222.42 How does this rule affect Intermediate Quiet Zones and Intermediate Partial Quiet Zones?

222.43 What notices and other information are required to create or continue a quiet zone?

222.45 When is a railroad required to cease routine use of locomotive horns at crossings?

222.47 What periodic updates are required?

222.49 Who may file Grade Crossing Inventory Forms?

222.51 Under what conditions will quiet zone status be terminated?

222.53 What are the requirements for supplementary and alternative safety measures?

222.55 How are new supplementary or alternative safety measures approved?

222.57 Can parties seek review of the Associate Administrator’s actions?

222.59 When may a wayside horn be used?

Appendix A to Part 222—Approved Supplementary Safety Measures

Appendix B to Part 222—Alternative Safety Measures

Appendix C to Part 222—Guide to Establishing Quiet Zones

Appendix D to Part 222—Determining Risk Levels

Appendix E to Part 222—Requirements for Wayside Horns

Appendix F to Part 222—Diagnostic Team Considerations

Appendix G to Part 222—Schedule of Civil Penalties

**Authority:** 28 U.S.C. 2461, note; 49 U.S.C. 20103, 20107, 20153, 21301, 21304; 49 CFR 1.49.

##### Subpart A—General

#### § 222.1 What is the purpose of this regulation?

The purpose of this part is to provide for safety at public highway-rail grade crossings by requiring locomotive horn use at public highway-rail grade crossings except in quiet zones established and maintained in accordance with this part.

#### § 222.3 What areas does this regulation cover?

(a) This part prescribes standards for sounding locomotive horns when locomotives approach and pass through public highway-rail grade crossings. This part also provides standards for the creation and maintenance of quiet zones within which locomotive horns need not be sounded.

(b) The provisions of this part are separate and severable from one another. If any provision is stayed or determined to be invalid, it is the intent of FRA that the remaining provisions shall continue in effect.

(c) This part does not apply to any Chicago Region highway-rail grade crossing where the railroad was excused from sounding the locomotive horn by the Illinois Commerce Commission, and

where the railroad did not sound the horn, as of December 18, 2003.

**§ 222.5 What railroads does this regulation apply to?**

This part applies to all railroads except:

(a) A railroad that exclusively operates freight trains only on track which is not part of the general railroad system of transportation;

(b) Passenger railroads that operate only on track which is not part of the general railroad system of transportation and that operate at a maximum speed of 15 miles per hour over public highway-rail grade crossings; and

(c) Rapid transit operations within an urban area that are not connected to the general railroad system of transportation. See 49 CFR part 209, appendix A for the definitive statement of the meaning of the preceding sentence.

**§ 222.7 What is this regulation's effect on State and local laws and ordinances?**

(a) Except as provided in paragraph (b) of this section, issuance of this part preempts any State law, rule, regulation, or order governing the sounding of the locomotive horn at public highway-rail grade crossings, in accordance with 49 U.S.C. 20106.

(b) This part does not preempt any State law, rule, regulation, or order governing the sounding of the locomotive horn at any highway-rail grade crossing described in § 222.3(c) of this part.

(c) Except as provided in §§ 222.25 and 222.27, this part does not preempt any State law, rule, regulation, or order governing the sounding of locomotive horns at private highway-rail grade crossings or pedestrian crossings.

(d) Inclusion of SSMs and ASMs in this part or approved subsequent to issuance of this part does not constitute federal preemption of State law regarding whether those measures may be used for traffic control. Individual states may continue to determine whether specific SSMs or ASMs are appropriate traffic control measures for that State, consistent with Federal Highway Administration regulations and the MUTCD. However, except for the SSMs and ASMs implemented at highway-rail grade crossings described in § 222.3(c) of this part, inclusion of SSMs and ASMs in this part does constitute federal preemption of State law concerning the sounding of the locomotive horn in relation to the use of those measures.

(e) Issuance of this part does not constitute federal preemption of administrative procedures required

under State law regarding the modification or installation of engineering improvements at highway-rail grade crossings.

**§ 222.9 Definitions.**

As used in this part—

*Administrator* means the Administrator of the Federal Railroad Administration or the Administrator's delegate.

*Alternative safety measures (ASM)* means 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. Appendix B to this part lists such measures.

*Associate Administrator* means the Associate Administrator for Safety of the Federal Railroad Administration or the Associate Administrator's delegate.

*Channelization device* means 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.

"Tubular markers" and "vertical panels" as described in sections 6F.57 and 6F.58, respectively, of the MUTCD, are acceptable channelization devices for purposes of this part. Additional design specifications are determined by the standard traffic design specifications used by the governmental entity constructing the channelization device.

*Chicago Region* means the following six counties in the State of Illinois: Cook, DuPage, Lake, Kane, McHenry and Will.

*Crossing Corridor Risk Index* means a 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 this part, 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 within the corridor.

*Diagnostic team* as used in this part, means a group of knowledgeable representatives of parties of interest in

a highway-rail grade crossing, organized by the public authority responsible for that crossing, who, using crossing safety management principles, evaluate conditions at a grade crossing to make determinations or recommendations for the public authority concerning safety needs at that crossing.

*Effectiveness rate* means a number between zero and one which represents the reduction of the likelihood of a collision at a public highway-rail grade crossing as a result of the installation of an SSM or ASM when compared to the same crossing equipped with conventional active warning systems of flashing lights and gates. Zero effectiveness means that the SSM or ASM provides no reduction in the probability of a collision, while an effectiveness rating of one means that the SSM or ASM is totally effective in eliminating collision risk. Measurements between zero and one reflect the percentage by which the SSM or ASM reduces the probability of a collision.

*FRA* means the Federal Railroad Administration.

*Grade Crossing Inventory Form* means the U.S. DOT National Highway-Rail Grade Crossing Inventory Form, FRA Form F6180.71. This form is available through the FRA's Office of Safety, or on FRA's Web site at <http://www.fra.dot.gov>.

*Intermediate Partial Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns for a specified period of time during the evening or nighttime hours, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads for a specified period of time during the evening and/or nighttime hours, and at which such statutes, ordinances or agreements were in place and enforced or observed as of December 18, 2003, but not as of October 9, 1996.

*Intermediate Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads, and at which such statutes, ordinances or agreements were in place and enforced or observed as of

December 18, 2003, but not as of October 9, 1996.

*Locomotive* means a piece of on-track equipment other than hi-rail, specialized maintenance, or other similar equipment—

(1) With one or more propelling motors designed for moving other equipment;

(2) With one or more propelling motors designed to carry freight or passenger traffic or both; or

(3) Without propelling motors but with one or more control stands.

*Locomotive horn* means a locomotive air horn, steam whistle, or similar audible warning device (see 49 CFR 229.129) mounted on a locomotive or control cab car. The terms “locomotive horn”, “train whistle”, “locomotive whistle”, and “train horn” are used interchangeably in the railroad industry.

*Median* means the portion of a divided highway separating the travel ways for traffic in opposite directions.

*MUTCD* means the Manual on Traffic Control Devices published by the Federal Highway Administration.

*Nationwide Significant Risk Threshold* means a 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. For purposes of this rule, a risk level above the Nationwide Significant Risk Threshold represents a significant risk with respect to loss of life or serious personal injury. The Nationwide Significant Risk Threshold is calculated in accordance with the procedures in appendix D of this part. Unless otherwise indicated, references in this part to the Nationwide Significant Risk Threshold reflect its level as last published by FRA in the **Federal Register**.

*New Partial Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which locomotive horns are not routinely sounded between the hours of 10 p.m. and 7 a.m., but are routinely sounded during the remaining portion of the day, and which does not qualify as a Pre-Rule Partial Quiet Zone.

*New Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which routine sounding of locomotive horns is restricted pursuant to this part and which does not qualify as either a Pre-Rule Quiet Zone or Intermediate Quiet Zone.

*Non-traversable curb* means 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 and are at least six inches high. Additional design specifications are determined by the standard traffic design specifications used by the governmental entity constructing the curb.

*Partial Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded for a specified period of time during the evening and/or nighttime hours.

*Pedestrian crossing* means, for purposes of this part, a separate designated sidewalk or pathway where pedestrians, but not vehicles, cross railroad tracks. Sidewalk crossings contiguous with, or separate but adjacent to, public highway-rail grade crossings, are presumed to be part of the public highway-rail grade crossing and are *not* considered pedestrian crossings.

*Power-out indicator* means a device which is capable of indicating to trains approaching a grade crossing equipped with an active warning system whether commercial electric power is activating the warning system at that crossing. This term includes remote health monitoring of grade crossing warning systems if such monitoring system is equipped to indicate power status.

*Pre-existing Modified Supplementary Safety Measure (Pre-existing Modified SSM)* means a safety system or procedure that is listed in appendix A to this Part, but is not fully compliant with the standards set forth therein, which was installed before December 18, 2003 by the appropriate traffic control or law enforcement authority responsible for safety at the highway-rail grade crossing. The calculation of risk reduction credit for pre-existing modified SSMs is addressed in appendix B of this part.

*Pre-existing Supplementary Safety Measure (Pre-existing SSM)* means a safety system or procedure established in accordance with this part before December 18, 2003 which was provided by the appropriate traffic control or law enforcement authority responsible for safety at the highway-rail grade crossing. These safety measures must fully comply with the SSM requirements set forth in appendix A of this part. The calculation of risk reduction credit for qualifying pre-existing SSMs is addressed in appendix A.

*Pre-Rule Partial Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns for a specified period of time during the evening and/or nighttime hours, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads for a specified period of time during the evening and/or nighttime hours, and at which such statutes, ordinances or agreements were in place and enforced or observed as of October 9, 1996 and on December 18, 2003.

*Pre-Rule Quiet Zone* means a segment of a rail line within which is situated one or a number of consecutive public highway-rail crossings at which State statutes or local ordinances restricted the routine sounding of locomotive horns, or at which locomotive horns did not sound due to formal or informal agreements between the community and the railroad or railroads, and at which such statutes, ordinances or agreements were in place and enforced or observed as of October 9, 1996 and on December 18, 2003.

*Private highway-rail crossing* means, for purposes of this part, a highway-rail at grade crossing which is not a public highway-rail grade crossing.

*Public authority* means the public entity responsible for traffic control or law enforcement at the public highway-rail grade or pedestrian crossing.

*Public highway-rail grade crossing* means, for purposes of this part, a location where a public highway, road, or street, including associated sidewalks or pathways, crosses one or more railroad tracks at grade. If a public authority maintains the roadway on both sides of the crossing, the crossing is considered a public crossing for purposes of this part.

*Quiet zone* means a segment of a rail line, within which is situated one or a number of consecutive public highway-rail crossings at which locomotive horns are not routinely sounded.

*Quiet Zone Risk Index* means a measure of risk to the motoring public which reflects the Crossing Corridor Risk Index for a quiet zone, after adjustment to account for increased risk due to lack of locomotive horn use at the crossings within the quiet zone (if horns are presently sounded at the crossings) and reduced risk due to implementation, if any, of SSMs and ASMs with the quiet zone. The calculation of the Quiet Zone Risk Index, which is explained in appendix

D of this part, does not differ for partial quiet zones.

*Railroad* means any form of non-highway ground transportation that runs on rails or electromagnetic guideways and any entity providing such transportation, including:

(1) Commuter or other short-haul railroad passenger service in a metropolitan or suburban area and commuter railroad service that was operated by the Consolidated Rail Corporation on January 1, 1979; and

(2) High speed ground transportation systems that connect metropolitan areas, without regard to whether those systems use new technologies not associated with traditional railroads; but does not include rapid transit operations in an urban area that are not connected to the general railroad system of transportation.

*Recognized State agency* means, for purposes of this part, a State agency, responsible for highway-rail grade crossing safety or highway and road safety, that has applied for and been approved by FRA as a participant in the quiet zone development process.

*Relevant collision* means a collision at a highway-rail grade crossing between a train and a motor vehicle, excluding the following: a collision resulting from an activation failure of an active grade crossing warning system; a collision in which there is no driver in the motor vehicle; or a collision in which the highway vehicle struck the side of the train beyond the fourth locomotive unit or rail car. With respect to Pre-Rule Partial Quiet Zones, a relevant collision shall not include collisions that occur during the time period within which the locomotive horn is routinely sounded.

*Risk Index With Horns* means a measure of risk to the motoring public when locomotive horns are routinely sounded at every public highway-rail grade crossing within a quiet zone. In Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones, the Risk Index With Horns is determined by adjusting the Crossing Corridor Risk Index to account for the decreased risk that would result if locomotive horns were routinely sounded at each public highway-rail grade crossing.

*Supplementary safety measure (SSM)* means 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.

*Waiver* means a temporary or permanent modification of some or all of the requirements of this part as they apply to a specific party under a specific set of facts. Waiver does not refer to the process of establishing quiet zones or approval of quiet zones in accordance with the provisions of this part.

*Wayside horn* means 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.

**§ 222.11 What are the penalties for failure to comply with this regulation?**

Any person who violates any requirement of this part or causes the violation of any such requirement is subject to a civil penalty of least \$550 and not more than \$11,000 per violation, except that: penalties may be assessed against individuals only for willful violations, and, where a grossly negligent violation or a pattern of repeated violations has created an imminent hazard of death or injury to persons, or has caused death or injury, a penalty not to exceed \$27,000 per violation may be assessed. Each day a violation continues shall constitute a separate offense. Any person who knowingly and willfully falsifies a record or report required by this part may be subject to criminal penalties under 49 U.S.C. 21311. Appendix G of this part contains a schedule of civil penalty amounts used in connection with this part.

**§ 222.13 Who is responsible for compliance?**

Any person, including but not limited to a railroad, contractor for a railroad, or a local or State governmental entity that performs any function covered by this part, must perform that function in accordance with this part.

**§ 222.15 How does one obtain a waiver of a provision of this regulation?**

(a) Except as provided in paragraph (b) of this section, two parties must jointly file a petition (request) for a waiver. They are the railroad owning or controlling operations over the railroad tracks crossing the public highway-rail grade crossing and the public authority which has jurisdiction over the roadway crossing the railroad tracks.

(b) If the railroad and the public authority cannot reach agreement to file a joint petition, either party may file a request for a waiver; however, the filing party must specify in its petition the steps it has taken in an attempt to reach agreement with the other party, and

explain why applying the requirement that a joint submission be made in that instance would not be likely to contribute significantly to public safety. If the Associate Administrator determines that applying the requirement for a jointly filed submission to that particular petition would not be likely to significantly contribute to public safety, the Associate Administrator shall waive the requirement for joint submission and accept the petition for consideration. The filing party must also provide the other party with a copy of the petition filed with FRA.

(c) Each petition for waiver must be filed in accordance with 49 CFR part 211.

(d) If the Administrator finds that a waiver of compliance with a provision of this part is in the public interest and consistent with the safety of highway and railroad users, the Administrator may grant the waiver subject to any conditions the Administrator deems necessary.

**§ 222.17 How can a State agency become a recognized State agency?**

(a) Any State agency responsible for highway-rail grade crossing safety and/or highway and road safety may become a recognized State agency by submitting an application to the Associate Administrator that contains:

(1) A detailed description of the proposed scope of involvement in the quiet zone development process;

(2) The name, address, and telephone number of the person(s) who may be contacted to discuss the State agency application; and

(3) A statement from State agency counsel which affirms that the State agency is authorized to undertake the responsibilities proposed in its application.

(b) The Associate Administrator will approve the application if, in the Associate Administrator's judgment, the proposed scope of State agency involvement will facilitate safe and effective quiet zone development. The Associate Administrator may include in any decision of approval such conditions as he/she deems necessary and appropriate.

**Subpart B—Use of Locomotive Horns**

**§ 222.21 When must a locomotive horn be used?**

(a) Except as provided in this part, the locomotive horn on the lead locomotive of a train, lite locomotive consist, individual locomotive, or lead cab car shall be sounded when such locomotive or lead cab car is approaching a public

highway-rail grade crossing. Sounding of the locomotive horn with two long, one short, and one long blast shall be initiated at a location so as to be in accordance with paragraph (b) of this section and shall be repeated or prolonged until the locomotive or train occupies the crossing. This pattern may be varied as necessary where crossings are spaced closely together.

(b)(1) Except as provided in paragraph (b)(2) of this section, the locomotive horn shall begin to be sounded at least 15 seconds, but no more than 20 seconds, before the locomotive enters the crossing.

(2) Trains, locomotive consists, and individual locomotives traveling at speeds in excess of 45 mph shall not begin sounding the horn more than one-quarter mile (1,320 feet) in advance of the nearest public highway-rail grade crossing, even if the advance warning provided by the locomotive horn will be less than 15 seconds in duration.

(c) As stated in § 222.3(c) of this part, this section does not apply to any Chicago Region highway-rail grade crossing at which railroads were excused from sounding the locomotive horn by the Illinois Commerce Commission, and where railroads did not sound the horn, as of December 18, 2003.

**§ 222.23 How does this regulation affect sounding of a horn during an emergency or other situations?**

(a)(1) Notwithstanding any other provision of this part, a locomotive engineer may sound the locomotive horn to provide a warning to animals, vehicle operators, pedestrians, trespassers or crews on other trains in an emergency situation if, in the locomotive engineer's sole judgment, such action is appropriate in order to prevent imminent injury, death, or property damage.

(2) Notwithstanding any other provision of this part, including provisions addressing the establishment of a quiet zone, limits on the length of time in which a horn may be sounded, or installation of wayside horns within quiet zones, this part does not preclude the sounding of locomotive horns in emergency situations, nor does it impose a legal duty to sound the locomotive horn in such situations.

(b) Nothing in this part restricts the use of the locomotive horn in the following situations:

(1) When a wayside horn is malfunctioning;

(2) When active grade crossing warning devices have malfunctioned

and use of the horn is required by one of the following sections of this chapter: §§ 234.105, 234.106, or 234.107; or

(3) When grade crossing warning systems are temporarily out of service during inspection, maintenance, or testing of the system.

(c) Nothing in this part restricts the use of the locomotive horn for purposes other than highway-rail crossing safety (e.g., to announce the approach of a train to roadway workers in accordance with a program adopted under part 214 of this chapter, or where required for other purposes under railroad operating rules).

**§ 222.25 How does this rule affect private highway-rail grade crossings?**

This rule does not require the routine sounding of locomotive horns at private highway-rail grade crossings. Except as specified in this section, this part is not meant to address the subject of private grade crossings and is not intended to affect present State or local laws or orders, or private contractual or other arrangements regarding the routine sounding of locomotive horns at private highway-rail grade crossings.

(a) Private highway-rail grade crossings may be included in a quiet zone.

(b)(1) Private highway-rail grade crossings that are located in New Quiet Zones or New Partial Quiet Zones and allow access to the public, or which provide access to active industrial or commercial sites, may be included in a quiet zone only if a diagnostic team evaluates the crossing and the crossing is equipped or treated in accordance with the recommendations of such diagnostic team.

(2) The public authority shall provide the State agency responsible for grade crossing safety and all affected railroads an opportunity to participate in the diagnostic team review of private highway-rail grade crossings.

(c)(1) At a minimum, every private highway-rail grade crossing within a New Quiet Zone or New Partial Quiet Zone shall be marked by a crossbuck and a "STOP" sign, which are compliant with MUTCD standards unless otherwise prescribed by State law, and shall be equipped with advance warning signs in compliance with § 222.35(c) of this part.

(2) At a minimum, every private highway-rail grade crossing within a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone shall, by June 24, 2008, be marked by a crossbuck and a "STOP" sign, which are compliant with MUTCD standards unless otherwise prescribed

by State law, and shall be equipped with advance warning signs in compliance with § 222.35(c) of this part.

**§ 222.27 How does this rule affect pedestrian crossings?**

This rule does not require the routine sounding of locomotive horns at pedestrian crossings. Except as specified in this section, this part is not meant to address the subject of pedestrian crossings and is not intended to affect State or local laws or orders, or private contractual or other arrangements, regarding the routine sounding of locomotive horns at pedestrian crossings.

(a) Pedestrian crossings may be included in a quiet zone.

(b) Pedestrian crossings that are located in New Quiet Zones or New Partial Quiet Zones may be included in a quiet zone only if a diagnostic team evaluates the crossings and the crossings are equipped or treated in accordance with the recommendations of such diagnostic team.

(c) The public authority shall provide the State agency responsible for grade crossing safety and all affected railroads an opportunity to participate in diagnostic team reviews of pedestrian crossings.

(d) *Advance warning signs.* (1) Each pedestrian crossing within a New Quiet Zone shall be equipped with a sign that advises the pedestrian that train horns are not sounded at the crossing. Such sign shall conform to the standards contained in the MUTCD.

(2) Each pedestrian crossing within a New Partial Quiet Zone shall be equipped with a sign that advises the pedestrian that train horns are not sounded at the crossing between the hours of 10 p.m. and 7 a.m. Such sign shall conform to the standards contained in the MUTCD.

(3) Each pedestrian crossing within a Pre-Rule Quiet Zone shall be equipped by June 24, 2008 with a sign that advises the pedestrian that train horns are not sounded at the crossing. Such sign shall conform to the standards contained in the MUTCD.

(4) Each pedestrian crossing within a Pre-Rule Partial Quiet Zone shall be equipped by June 24, 2008 with a sign that advises the pedestrian that train horns are not sounded at the crossing for a specified period of time. Such sign shall conform to the standards contained in the MUTCD.



**Subpart C—Exceptions to the Use of the Locomotive Horn****§ 222.31 [Reserved]****Silenced Horns at Individual Crossings****§ 222.33 Can locomotive horns be silenced at an individual public highway-rail grade crossing which is not within a quiet zone?**

(a) A railroad operating over an individual public highway-rail crossing may, at its discretion, cease the sounding of the locomotive horn if the locomotive speed is 15 miles per hour or less and train crew members, or appropriately equipped flaggers, as defined in 49 CFR 234.5, flag the crossing to provide warning of approaching trains to motorists.

(b) This section does not apply where active grade crossing warning devices have malfunctioned and use of the horn is required by 49 CFR 234.105, 234.106, or 234.107.

**Silenced Horns at Groups of Crossings—Quiet Zones****§ 222.35 What are the minimum requirements for quiet zones?**

The following requirements apply to quiet zones established in conformity with this part.

(a) *Minimum length.* (1)(i) Except as provided in paragraphs (a)(1)(ii) of this section, the minimum length of a New Quiet Zone or New Partial Quiet Zone established under this part shall be one-half mile along the length of railroad right-of-way.

(ii) The one-half mile minimum length requirement shall be waived for any New Quiet Zone or New Partial Quiet Zone that is added onto an existing quiet zone, provided there is no public highway-rail grade crossing at which locomotive horns are routinely sounded within one-half mile of the New Quiet Zone or New Partial Quiet Zone.

(2)(i) The length of a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may continue unchanged from that which existed as of October 9, 1996.

(ii) With the exception of combining two adjacent Pre-Rule Quiet Zones or Pre-Rule Partial Quiet Zones, the addition of any public crossing to a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone shall end the grandfathered status of that quiet zone and transform it into a New Quiet Zone or New Partial Quiet Zone that must comply with all requirements applicable to New Quiet Zones and New Partial Quiet Zones.

(iii) The deletion of any public crossing from a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone, with the exception of a grade separation or crossing closure, must result in a quiet

zone of at least one-half mile in length in order to retain Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone status.

(3) A quiet zone may include highway-rail grade crossings on a segment of rail line crossing more than one political jurisdiction.

(b) *Active grade crossing warning devices.* (1) Each public highway-rail grade crossing in a New Quiet Zone established under this part must be equipped, no later than the quiet zone implementation date, with active grade crossing warning devices comprising both flashing lights and gates which control traffic over the crossing and that conform to the standards contained in the MUTCD. Such warning devices shall be equipped with constant warning time devices, if reasonably practical, and power-out indicators.

(2) With the exception of public highway-rail grade crossings that will be temporarily closed in accordance with appendix A of this part, each public highway-rail grade crossing in a New Partial Quiet Zone established under this part must be equipped, no later than the quiet zone implementation date, with active grade crossing warning devices comprising both flashing lights and gates which control traffic over the crossing and that conform to the standards contained in the MUTCD. Such warning devices shall be equipped with constant warning time devices, if reasonably practical, and power-out indicators.

(3) Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones must retain, and may upgrade, the grade crossing safety warning system which existed as of December 18, 2003. Any upgrade involving the installation or renewal of an automatic warning device system shall include constant warning time devices, where reasonably practical, and power-out indicators. In no event may the grade crossing safety warning system, which existed as of December 18, 2003, be downgraded. Risk reduction resulting from upgrading to flashing lights or gates may be credited in calculating the Quiet Zone Risk Index.

(c) *Advance warning signs.* (1) Each highway approach to every public and private highway-rail grade crossing within a New Quiet Zone shall be equipped with an advance warning sign that advises the motorist that train horns are not sounded at the crossing. Such sign shall conform to the standards contained in the MUTCD.

(2) Each highway approach to every public and private highway-rail grade crossing in a New Partial Quiet Zone shall be equipped with an advance warning sign that advises the motorist

that train horns are not sounded at the crossing between the hours of 10 p.m. and 7 a.m. Such sign shall conform to the standards contained in the MUTCD.

(3) Each highway approach to every public and private highway-rail grade crossing within a Pre-Rule Quiet Zone shall be equipped by June 24, 2008 with an advance warning sign that advises the motorist that train horns are not sounded at the crossing. Such sign shall conform to the standards contained in the MUTCD.

(4) Each highway approach to every public and private highway-rail grade crossing within a Pre-Rule Partial Quiet Zone shall be equipped by June 24, 2008 with an advance warning sign that advises the motorist that train horns are not sounded at the crossing for a specified period of time. Such sign shall conform to the standards contained in the MUTCD.

(d) *Bells.* (1) Each public highway-rail grade crossing in a New Quiet Zone or New Partial Quiet Zone that is subjected to pedestrian traffic and equipped with one or more automatic bells shall retain those bells in working condition.

(2) Each public highway-rail grade crossing in a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone that is subjected to pedestrian traffic and equipped with one or more automatic bells shall retain those bells in working condition.

(e) All private crossings within the quiet zone must be treated in accordance with this section and § 222.25 of this part.

(f) All pedestrian crossings within a quiet zone must be treated in accordance with § 222.27 of this part.

(g) All public crossings within the quiet zone must be in compliance with the requirements of the MUTCD.

**§ 222.37 Who may establish a quiet zone?**

(a) A public authority may establish quiet zones that are consistent with the provisions of this part. If a proposed quiet zone includes public grade crossings under the authority and control of more than one public authority (such as a county road and a State highway crossing the railroad tracks at different crossings), both public authorities must agree to establishment of the quiet zone, and must jointly, or by delegation provided to one of the authorities, take such actions as are required by this part.

(b) A public authority may establish quiet zones irrespective of State laws covering the subject matter of sounding or silencing locomotive horns at public highway-rail grade crossings. Nothing in this part, however, is meant to affect any other applicable role of State agencies or

the Federal Highway Administration in decisions regarding funding or construction priorities for grade crossing safety projects, selection of traffic control devices, or engineering standards for roadways or traffic control devices.

(c) A State agency may provide administrative and technical services to public authorities by advising them, acting on their behalf, or acting as a central contact point in dealing with FRA; however, any public authority eligible to establish a quiet zone under this part may do so.

**§ 222.38 Can a quiet zone be created in the Chicago Region?**

Public authorities that are eligible to establish quiet zones under this part may create New Quiet Zones or New Partial Quiet Zones in the Chicago Region, provided the New Quiet Zone or New Partial Quiet Zone does not include any highway-rail grade crossing described in § 222.3(c) of this part.

**§ 222.39 How is a quiet zone established?**

(a) *Public authority designation.* This paragraph (a) describes how a quiet zone may be designated by a public authority without the need for formal application to, and approval by, FRA. If a public authority complies with either paragraph (a)(1), (a)(2), or (a)(3) of this section, and complies with the information and notification provisions of § 222.43 of this part, a public authority may designate a quiet zone without the necessity for FRA review and approval.

(1) A quiet zone may be established by implementing, at every public highway-rail grade crossing within the quiet zone, one or more SSMs identified in appendix A of this part.

(2) A quiet zone may be established if the Quiet Zone Risk Index is at, or below, the Nationwide Significant Risk Threshold, as follows:

(i) If the Quiet Zone Risk Index is already at, or below, the Nationwide Significant Risk Threshold without being reduced by implementation of SSMs; or

(ii) If SSMs are implemented which are sufficient to reduce the Quiet Zone Risk Index to a level at, or below, the Nationwide Significant Risk Threshold.

(3) A quiet zone may be established if SSMs are implemented which are sufficient to reduce the Quiet Zone Risk Index to a level at or below the Risk Index With Horns.

(b) *Public authority application to FRA.* (1) A public authority may apply to the Associate Administrator for approval of a quiet zone that does not meet the standards for public authority

designation under paragraph (a) of this section, but in which it is proposed that one or more safety measures be implemented. Such proposed quiet zone may include only ASMs, or a combination of ASMs and SSMs at various crossings within the quiet zone. Note that an engineering improvement which does not fully comply with the requirements for an SSM under appendix A of this part, is considered to be an ASM. The public authority's application must:

(i) Contain an accurate, complete and current Grade Crossing Inventory Form for each public and private highway-rail grade crossing within the proposed quiet zone;

(ii) Contain sufficient detail concerning the present safety measures at each public highway-rail grade crossing proposed to be included in the quiet zone to enable the Associate Administrator to evaluate their effectiveness;

(iii) Contain detailed information about diagnostic team reviews of any crossing within the proposed quiet zone, including a membership list and a list of recommendations made by the diagnostic team;

(iv) Contain a statement describing efforts taken by the public authority to work with each railroad operating over the public highway-rail grade crossings within the quiet zone and the State agency responsible for grade crossing safety. This statement shall also list any objections to the proposed quiet zone that were raised by the railroad(s) and State agency;

(v) Contain detailed information as to which SSMs and ASMs are proposed to be implemented at each public or private highway-rail grade crossing within the proposed quiet zone;

(vi) Contain a commitment to implement the proposed safety measures within the proposed quiet zone; and

(vii) Demonstrate through data and analysis that the proposed implementation of these measures will cause a reduction in the Quiet Zone Risk Index to, or below, either the Risk Index With Horns or the Nationwide Significant Risk Threshold.

(2) If the proposed quiet zone contains newly established public or private highway-rail grade crossings, the public authority's application for approval must also include five-year projected vehicle and rail traffic counts for each newly established grade crossing;

(3) *60-day comment period.* (i) The public authority application for FRA approval of the proposed quiet zone shall be provided, by certified mail, return receipt requested, to: all railroads

operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator.

(ii) Except as provided in paragraph (b)(3)(iii) of this section, any party that receives a copy of the public authority application may submit comments on the public authority application to the Associate Administrator during the 60-day period after the date on which the public authority application was mailed.

(iii) If the public authority application for FRA approval contains written statements from each railroad operating over the public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety stating that the railroad, vehicular traffic authority and State agencies have waived their rights to provide comments on the public authority application, the 60-day comment period under paragraph (b)(3)(ii) of this section shall be waived.

(4)(i) After reviewing any comments submitted under paragraph (b)(3)(ii) of this section, the Associate Administrator will approve the quiet zone if, in the Associate Administrator's judgment, the public authority is in compliance with paragraphs (b)(1) and (b)(2) of this section and has satisfactorily demonstrated that the SSMs and ASMs proposed by the public authority result in a Quiet Zone Risk Index that is either:

(A) At or below the Risk Index With Horns or

(B) At or below the Nationwide Significant Risk Threshold.

(ii) The Associate Administrator may include in any decision of approval such conditions as may be necessary to ensure that the proposed safety improvements are effective. If the Associate Administrator does not approve the quiet zone, the Associate Administrator will describe, in the decision, the basis upon which the decision was made. Decisions issued by the Associate Administrator on quiet zone applications shall be provided to all parties listed in paragraph (b)(3)(i) of

this section and may be reviewed as provided in §§ 222.57(b) and (d) of this part.

(c) Appendix C of this part contains guidance on how to create a quiet zone.

**§ 222.41 How does this rule affect Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones?**

(a) *Pre-Rule Quiet Zones that will be established by automatic approval.* (1) A Pre-Rule Quiet Zone may be established by automatic approval and remain in effect, subject to § 222.51, if the Pre-Rule Quiet Zone is in compliance with §§ 222.35 (minimum requirements for quiet zones) and 222.43 of this part (notice and information requirements) and the Pre-Rule Quiet Zone:

(i) Has at every public highway-rail grade crossing within the quiet zone one or more SSMS identified in appendix A of this part;

(ii) The Quiet Zone Risk Index as last published by FRA in the **Federal Register** is at, or below, the Nationwide Significant Risk Threshold; or

(iii) The Quiet Zone Risk Index as last published by FRA in the **Federal Register** is above the Nationwide Significant Risk Threshold but less than twice the Nationwide Significant Risk Threshold and there have been no relevant collisions at any public grade crossing within the quiet zone for the five years preceding April 27, 2005 or

(iv) The Quiet Zone Risk Index as last published by FRA in the **Federal Register** is at, or below, the Risk Index With Horns.

(2) The public authority shall provide Notice of Quiet Zone Establishment, in accordance with § 222.43 of this part, no later than December 24, 2005.

(b) *Pre-Rule Partial Quiet Zones that will be established by automatic approval.*

(1) A Pre-Rule Partial Quiet Zone may be established by automatic approval and remain in effect, subject to § 222.51 of this part, if the Pre-Rule Partial Quiet Zone is in compliance with §§ 222.35 (minimum requirements for quiet zones) and 222.43 (notice and information requirements) of this part and the Pre-Rule Partial Quiet Zone:

(i) Has at every public highway-rail grade crossing within the quiet zone one or more SSMS identified in appendix A of this part;

(ii) The Quiet Zone Risk Index as last published by FRA in the **Federal Register** is at, or below, the Nationwide Significant Risk Threshold; or

(iii) The Quiet Zone Risk Index as last published by FRA in the **Federal Register** is above the Nationwide Significant Risk Threshold but less than twice the Nationwide Significant Risk

Threshold and there have been no relevant collisions at any public grade crossing within the quiet zone for the five years preceding April 27, 2005. With respect to Pre-Rule Partial Quiet Zones, collisions that occurred during the time period within which the locomotive horn was routinely sounded shall not be considered "relevant collisions"; or

(iv) The Quiet Zone Risk Index as last published by FRA in the **Federal Register** is at, or below, the Risk Index With Horns.

(2) The public authority shall provide Notice of Quiet Zone Establishment, in accordance with § 222.43 of this part, no later than December 24, 2005.

(c) *Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones that will not be established by automatic approval.* (1) If a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone will not be established by automatic approval under paragraph (a) or (b) of this section, existing restrictions may, at the public authority's discretion, remain in place on an interim basis under the provisions of this paragraph (c) and upon compliance with § 222.43 (notice and information requirements) of this part. Continuation of a quiet zone beyond the interim periods specified in this paragraph will require implementation of SSMS or ASMS in accordance with § 222.39 of this part and compliance with the requirements set forth in §§ 222.25(c), 222.27(d), and 222.35 of this part.

(2)(i) In order to provide time for the public authority to plan for and implement quiet zones that are in compliance with the requirements of this part, a public authority may continue locomotive horn restrictions at Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones for a period of five years from June 24, 2005, provided the public authority has, within three years of June 24, 2005, filed with the Associate Administrator a detailed plan for establishing a quiet zone under this part, including, in the case of a plan requiring approval under § 222.39(b) of this part, all of the required elements of filings under that paragraph together with a timetable for implementation of safety improvements.

(ii) If, during the three-year period after June 24, 2005, the Quiet Zone Risk Index for the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone has fallen to a level at or below the Nationwide Significant Risk Threshold, the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone may remain in effect, subject to § 222.51 of this part, provided the public authority provides notification of Pre-Rule Quiet Zone or Pre-Rule Partial

Quiet Zone establishment in accordance with § 222.43 and has complied with the requirements of §§ 222.25(c), 222.27(d), and 222.35 by June 24, 2008.

(3) Locomotive horn restrictions may continue for an additional three years beyond the five-year period permitted by paragraph (b)(2)(i) of this section, if:

(i) Prior to June 24, 2008, the appropriate State agency provides to the Associate Administrator: a comprehensive State-wide implementation plan and funding commitment for implementing improvements at Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones which, when implemented, would enable them to qualify for a quiet zone under this part; and

(ii) Prior to June 24, 2009, either physical improvements are initiated at a portion of the crossings within the quiet zone, or the appropriate State agency has participated in quiet zone improvements in one or more jurisdictions elsewhere within the State.

(4) In the event that the safety improvements planned for the quiet zone require approval of FRA under § 222.39(b) of this part, the public authority should apply for such approval prior to December 24, 2007, to ensure that FRA has ample time in which to review such application prior to the end of the extension period.

(d) *Pre-Rule Partial Quiet Zones that will be converted to 24-hour Quiet Zones.* A Pre-Rule Partial Quiet Zone may be converted to a 24-hour quiet zone if the quiet zone is brought into compliance with the New Quiet Zone requirements set forth in §§ 222.25, 222.27, 222.35 and 222.39 of this part and notification of the establishment of a New 24-hour Quiet Zone is provided in accordance with § 222.43 of this part.

**§ 222.42 How does this rule affect Intermediate Quiet Zones and Intermediate Partial Quiet Zones?**

(a) Existing restrictions may, at the public authority's discretion, remain in place within the Intermediate Quiet Zone or Intermediate Partial Quiet Zone until June 24, 2006, provided the public authority complies with § 222.43 (notice and information requirements) of this part. Continuation of the quiet zone beyond June 24, 2006 will require implementation of SSMS or ASMS in accordance with § 222.39 of this part and compliance with the New Quiet Zone standards set forth in §§ 222.25, 222.27 and 222.35 of this part.

(b) *Conversion of Intermediate Partial Quiet Zones into 24-hour New Quiet Zones.* An Intermediate Partial Quiet Zone may be converted into a 24-hour New Quiet Zone when the quiet zone is

brought into compliance with the New Quiet Zone requirements set forth in §§ 222.25, 222.27, 222.35 and 222.39 (requirements for quiet zone establishment) of this part, provided notification of New Quiet Zone establishment is provided in accordance with § 222.43 (notice and information requirements) of this part.

**§ 222.43 What notices and other information are required to create or continue a quiet zone?**

(a)(1) The public authority shall provide written notice, by certified mail, return receipt requested, of its intent to create a New Quiet Zone or New Partial Quiet Zone under § 222.39 of this part. Such notification shall be provided to: all railroads operating over the public highway-rail grade crossings within the quiet zone; the State agency responsible for highway and road safety; and the State agency responsible for grade crossing safety.

(2) The public authority shall provide written notification, by certified mail, return receipt requested, to continue a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone under § 222.41 of this part or to continue an Intermediate Quiet Zone or Intermediate Partial Quiet Zone under § 222.42 of this part. Such notification shall be provided to: all railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator.

(3) The public authority shall provide written notice, by certified mail, return receipt requested, of its intent to file a detailed plan for a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone in accordance with § 222.41(c)(2) of this part. Such notification shall be provided to: all railroads operating over the public highway-rail grade crossings within the quiet zone; the State agency responsible for highway and road safety; and the State agency responsible for grade crossing safety.

(4) The public authority shall provide written notice, by certified mail, return receipt requested, of the establishment of a quiet zone under § 222.39 or 222.41 of this part. Such notification shall be provided to: all railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over

vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator.

(b) *Notice of Intent.* (1) *Required Contents.* The Notice of Intent shall include the following:

(i) A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing that would be included within the proposed quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.

(ii) A statement of the time period within which restrictions would be imposed on the routine sounding of the locomotive horn imposed (*i.e.*, 24 hours or from 10 p.m. until 7 a.m.)

(iii) A brief explanation of the public authority's tentative plans for implementing improvements within the proposed quiet zone.

(iv) The name and title of the person who will act as point of contact during the quiet zone development process and the manner in which that person can be contacted.

(v) A list of the names and addresses of each party that will receive notification in accordance with paragraph (a)(1) of this section.

(2) *60-day comment period.* (i) A party that receives a copy of the public authority's Notice of Intent may submit information or comments about the proposed quiet zone to the public authority during the 60-day period after the date on which the Notice of Intent was mailed.

(ii) The 60-day comment period established under paragraph (b)(2)(i) of this section may terminate when the public authority obtains from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety:

(A) Written comments; or

(B) Written statements that the railroad and State agency do not have any comments on the Notice of Intent ("no-comment statements".)

(c) *Notice of Quiet Zone Continuation.*

(1) *Timing.* (i) In order to prevent the resumption of locomotive horn sounding on June 24, 2005, the Notice of Quiet Zone Continuation under § 222.41 or 222.42 of this part shall be served no later than June 3, 2005.

(ii) If the Notice of Quiet Zone Continuation under § 222.41 or 222.42

of this part is mailed after June 3, 2005, the Notice of Quiet Zone Continuation shall state the date on which locomotive horn use at highway-rail grade crossings within the quiet zone shall cease, but in no event shall that date be earlier than 21 days after the date of mailing.

(2) *Required contents.* The Notice of Quiet Zone Continuation shall include the following:

(i) A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.

(ii) A specific reference to the regulatory provision that provides the basis for quiet zone continuation, citing as appropriate, § 222.41 or 222.42 of this part.

(iii) A statement of the time period within which restrictions on the routine sounding of the locomotive horn will be imposed (*i.e.*, 24 hours or nighttime hours only.)

(iv) An accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects conditions currently existing at the crossing.

(v) The name and title of the person responsible for monitoring compliance with the requirements of this part and the manner in which that person can be contacted.

(vi) A list of the names and addresses of each party that will receive notification in accordance with paragraph (a)(2) of this section.

(vii) A statement signed by the chief executive officer of each public authority participating in the continuation of the quiet zone, in which the chief executive officer certifies that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

(d) *Notice of Detailed Plan.* (1) *Timing.* The Notice of Detailed Plan shall be served no later than four months before the filing of the detailed plan under § 222.41(c)(2) of this part.

(2) *Required contents.* The Notice of Detailed Plan shall include the following:

(i) A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing that is included in the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.

(ii) A statement of the time period within which restrictions would be imposed on the routine sounding of the

locomotive horn imposed (*i.e.*, 24 hours or nighttime hours only.)

(iii) A brief explanation of the public authority's tentative plans for implementing improvements within the quiet zone.

(iv) The name and title of the person who will act as point of contact during the quiet zone development process and the manner in which that person can be contacted.

(v) A list of the names and addresses of each party that will receive notification in accordance with paragraph (a)(3) of this section.

(3) *60-day comment period.* A party that receives a copy of the public authority's Notice of Detailed Plan may submit information or comments about the proposed improvements to the public authority during the 60-day period after the date on which the Notice of Detailed Plan was mailed.

(e) *Notice of Quiet Zone Establishment.* (1) *Timing.* (i) The Notice of Quiet Zone Establishment shall provide the date upon which routine locomotive horn use at highway-rail grade crossings shall cease, but in no event shall the date be earlier than 21 days after the date of mailing.

(ii) If the public authority was required to provide a Notice of Intent, in accordance with paragraph (a)(1) of this section, the Notice of Quiet Zone Establishment shall not be mailed less than 60 days after the date on which the Notice of Intent was mailed, unless the Notice of Quiet Zone Establishment contains a written statement affirming that written comments and/or "no-comment" statements have been received from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety in accordance with paragraph (b)(2)(ii) of this section.

(2) *Required contents.* The Notice of Quiet Zone Establishment shall include the following:

(i) A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.

(ii) A specific reference to the regulatory provision that provides the basis for quiet zone establishment, citing as appropriate, § 222.39(a)(1), 222.39(a)(2)(i), 222.39(a)(2)(ii), 222.39(a)(3), 222.39(b), 222.41(a)(1)(i), 222.41(a)(1)(ii), 222.41(a)(1)(iii), 222.41(a)(1)(iv), 222.41(b)(1)(i), 222.41(b)(1)(ii), 222.41(b)(1)(iii), or 222.41(b)(1)(iv) of this part.

(A) If the Notice contains a specific reference to § 222.39(a)(2)(i), 222.39(a)(2)(ii), 222.39(a)(3), 222.41(a)(1)(ii), 222.41(a)(1)(iii), 222.41(a)(1)(iv), 222.41(b)(1)(ii), 222.41(b)(1)(iii), or 222.41(b)(1)(iv) of this part, it shall include a copy of the FRA web page that contains the quiet zone data upon which the public authority is relying (<http://www.fra.dot.gov/us/content/1337>).

(B) If the Notice contains a specific reference to § 222.39(b) of this part, it shall include a copy of FRA's notification of approval.

(iii) If a diagnostic team review was required under § 222.25 or 222.27 of this part, the Notice shall include a statement affirming that the State agency responsible for grade crossing safety and all affected railroads were provided an opportunity to participate in the diagnostic team review. The Notice shall also include a list of recommendations made by the diagnostic team.

(iv) A statement of the time period within which restrictions on the routine sounding of the locomotive horn will be imposed (*i.e.*, 24 hours or from 10 p.m. until 7 a.m.)

(v) An accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects the conditions existing at the crossing before any new SSMS or ASMs were implemented.

(vi) An accurate, complete and current Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects SSMS and ASMs in place upon establishment of the quiet zone. SSMS and ASMs that cannot be fully described on the Inventory Form shall be separately described.

(vii) If the public authority was required to provide a Notice of Intent, in accordance with paragraph (a)(1) of this section, the Notice of Quiet Zone Establishment shall contain a written statement affirming that the Notice of Intent was provided in accordance with paragraph (a)(1) of this section. This statement shall also state the date on which the Notice of Intent was mailed.

(viii) If the public authority was required to provide a Notice of Intent, in accordance with paragraph (a)(1) of this section, and the Notice of Intent was mailed less than 60 days before the mailing of the Notice of Quiet Zone Establishment, the Notice of Quiet Zone Establishment shall also contain a written statement affirming that written

comments and/or "no comment" statements have been received from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety in accordance with paragraph (b)(2)(ii) of this section.

(ix) If the public authority was required to provide a Notice of Detailed Plan in accordance with paragraph (a)(3) of this section, the Notice of Quiet Zone Establishment shall contain a statement affirming that the Notice of Detailed Plan was provided in accordance with paragraph (a)(3) of this section. This statement shall also state the date on which the Notice of Detailed Plan was mailed.

(x) The name and title of the person responsible for monitoring compliance with the requirements of this part and the manner in which that person can be contacted.

(xi) A list of the names and addresses of each party that shall be notified in accordance with paragraph (a)(4) of this section.

(xii) A statement signed by the chief executive officer of each public authority participating in the establishment of the quiet zone, in which the chief executive officer shall certify that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

**§ 222.45 When is a railroad required to cease routine use of locomotive horns at crossings?**

After notification from a public authority, pursuant to § 222.43(e) of this part, that a quiet zone is being established, a railroad shall cease routine use of the locomotive horn at all public and private highway-rail grade crossings identified by the public authority upon the date set by the public authority.

**§ 222.47 What periodic updates are required?**

(a) *Quiet zones with SSMS at each public crossing.* This paragraph addresses quiet zones established pursuant to §§ 222.39(a)(1), 222.41(a)(1)(i), and 222.41(b)(1)(i) (quiet zones with an SSM implemented at every public crossing within the quiet zone) of this part. Between 4½ and 5 years after the date of the quiet zone establishment notice provided by the public authority under § 222.43(e) of this part, and between 4½ and 5 years after the last affirmation under this section, the public authority must:

(1) Affirm in writing to the Associate Administrator that the SSMS

implemented within the quiet zone continue to conform to the requirements of appendix A of this part. Copies of such affirmation must be provided by certified mail, return receipt requested, to the parties identified in § 222.43(a)(4) of this part; and

(2) Provide to the Associate Administrator an up-to-date, accurate, and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone.

(b) *Quiet zones which do not have a supplementary safety measure at each public crossing.* This paragraph addresses quiet zones established pursuant to §§ 222.39(a)(2) and (a)(3), § 222.39(b), §§ 222.41(a)(1)(ii), (a)(1)(iii), and (a)(1)(iv), and §§ 222.41(b)(1)(ii), (b)(1)(iii), and (b)(1)(iv) (quiet zones which do not have an SSM at every public crossing within the quiet zone) of this part. Between 2½ and 3 years after the date of the quiet zone establishment notice provided by the public authority under § 222.43(e) of this part, and between 2½ and 3 years after the last affirmation under this section, the public authority must:

(1) Affirm in writing to the Associate Administrator that all SSMs and ASMs implemented within the quiet zone continue to conform to the requirements of Appendices A and B of this part or the terms of the Quiet Zone approval. Copies of such notification must be provided to the parties identified in § 222.43(a)(4) of this part by certified mail, return receipt requested; and

(2) Provide to the Associate Administrator an up-to-date, accurate, and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone.

#### **§ 222.49 Who may file Grade Crossing Inventory Forms?**

(a) Grade Crossing Inventory Forms required to be filed with the Associate Administrator in accordance with §§ 222.39, 222.43 and 222.47 of this part may be filed by the public authority if, for any reason, such forms are not timely submitted by the State and railroad.

(b) Within 30 days after receipt of a written request of the public authority, the railroad owning the line of railroad that includes public or private highway rail grade crossings within the quiet zone or proposed quiet zone shall provide to the State and public authority sufficient current information regarding the grade crossing and the railroad's operations over the grade

crossing to enable the State and public authority to complete the Grade Crossing Inventory Form.

#### **§ 222.51 Under what conditions will quiet zone status be terminated?**

(a) *New Quiet Zones—Annual risk review.* (1) FRA will annually calculate the Quiet Zone Risk Index for each quiet zone established pursuant to §§ 222.39(a)(2) and 222.39(b) of this part, and in comparison to the Nationwide Significant Risk Threshold. FRA will notify each public authority of the Quiet Zone Risk Index for the preceding calendar year. FRA will not conduct annual risk reviews for quiet zones established by having an SSM at every public crossing within the quiet zone or for quiet zones established by reducing the Quiet Zone Risk Index to the Risk Index With Horns.

(2) *Actions to be taken by public authority to retain quiet zone.* If the Quiet Zone Risk Index is above the Nationwide Significant Risk Threshold, the quiet zone will terminate six months from the date of receipt of notification from FRA that the Quiet Zone Risk Index exceeds the Nationwide Significant Risk Threshold, unless the public authority takes the following actions:

(i) Within six months after the date of receipt of notification from FRA that the Quiet Zone Risk Index exceeds the Nationwide Significant Risk Threshold, provide to the Associate Administrator a written commitment to lower the potential risk to the traveling public at the crossings within the quiet zone to a level at, or below, the Nationwide Significant Risk Threshold or the Risk Index With Horns. Included in the commitment statement shall be a discussion of the specific steps to be taken by the public authority to increase safety at the crossings within the quiet zone; and

(ii) Within three years after the date of receipt of notification from FRA that the Quiet Zone Risk Index exceeds the Nationwide Significant Risk Threshold, complete implementation of SSMs or ASMs sufficient to reduce the Quiet Zone Risk Index to a level at, or below, the Nationwide Significant Risk Threshold, or the Risk Index With Horns, and receive approval from the Associate Administrator, under the procedures set forth in § 222.39(b) of this part, for continuation of the quiet zone. If the Quiet Zone Risk Index is reduced to the Risk Index With Horns, the quiet zone will be considered to have been established pursuant to § 222.39(a)(3) of this part and subsequent annual risk reviews will not be conducted for that quiet zone.

(iii) Failure to comply with paragraph (a)(2)(i) of this section shall result in the termination of the quiet zone six months after the date of receipt of notification from FRA that the Quiet Zone Risk Index exceeds the Nationwide Significant Risk Threshold. Failure to comply with paragraph (a)(2)(ii) of this section shall result in the termination of the quiet zone three years after the date of receipt of notification from FRA that the Quiet Zone Risk Index exceeds the Nationwide Significant Risk Threshold.

(b) *Pre-Rule Quiet Zones—Annual risk review.* (1) FRA will annually calculate the Quiet Zone Risk Index for each Pre-Rule Quiet Zone and Pre-Rule Partial Quiet Zone that qualified for automatic approval pursuant to §§ 222.41(a)(1)(ii), 222.41(a)(1)(iii), 222.41(b)(1)(ii), and 222.41(b)(1)(iii) of this part. FRA will notify each public authority of the Quiet Zone Risk Index for the preceding calendar year. FRA will also notify each public authority if a relevant collision occurred at a grade crossing within the quiet zone during the preceding calendar year.

(2) *Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones authorized under §§ 222.41(a)(1)(ii) and 222.41(b)(1)(ii).* (i) If a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone originally qualified for automatic approval because the Quiet Zone Risk Index was at, or below, the Nationwide Significant Risk Threshold, the quiet zone may continue unchanged if the Quiet Zone Risk Index as last calculated by the FRA remains at, or below, the Nationwide Significant Risk Threshold.

(ii) If the Quiet Zone Risk Index as last calculated by FRA is above the Nationwide Significant Risk Threshold, but is lower than twice the Nationwide Significant Risk Threshold and no relevant collisions have occurred at crossings within the quiet zone within the five years preceding the annual risk review, then the quiet zone may continue as though it originally received automatic approval pursuant to § 222.41(a)(1)(iii) or 222.41(b)(1)(iii) of this part.

(iii) If the Quiet Zone Risk Index as last calculated by FRA is at, or above, twice the Nationwide Significant Risk Threshold, or if the Quiet Zone Risk Index is above the Nationwide Significant Risk Threshold, but is lower than twice the Nationwide Significant Risk Threshold and a relevant collision occurred at a crossing within the quiet zone within the preceding five calendar years, the quiet zone will terminate six months after the date of receipt of notification from FRA of the Nationwide Significant Risk Threshold level, unless the public authority takes the actions

specified in paragraph (b)(4) of this section.

(3) *Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones authorized under §§ 222.41(a)(1)(iii) and 222.41(b)(1)(iii).*

(i) If a Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone originally qualified for automatic approval because the Quiet Zone Risk Index was above the Nationwide Significant Risk Threshold, but below twice the Nationwide Significant Risk Threshold, and no relevant collisions had occurred within the five-year qualifying period, the quiet zone may continue unchanged if the Quiet Zone Risk Index as last calculated by FRA remains below twice the Nationwide Significant Risk Threshold and no relevant collisions occurred at a public grade crossing within the quiet zone during the preceding calendar year.

(ii) If the Quiet Zone Risk Index as last calculated by FRA is at, or above, twice the Nationwide Significant Risk Threshold, or if a relevant collision occurred at a public grade crossing within the quiet zone during the preceding calendar year, the quiet zone will terminate six months after the date of receipt of notification from FRA that the Quiet Zone Risk Index is at, or exceeds twice the Nationwide Significant Risk Threshold or that a relevant collision occurred at a crossing within the quiet zone, unless the public authority takes the actions specified in paragraph (b)(4) of this section.

(4) *Actions to be taken by the public authority to retain a quiet zone.* (i) Within six months after the date of FRA notification, the public authority shall provide to the Associate Administrator a written commitment to lower the potential risk to the traveling public at the crossings within the quiet zone by reducing the Quiet Zone Risk Index to a level at, or below, the Nationwide Significant Risk Threshold or the Risk Index With Horns. Included in the commitment statement shall be a discussion of the specific steps to be taken by the public authority to increase safety at the public crossings within the quiet zone; and

(ii) Within three years of the date of FRA notification, the public authority shall complete implementation of SSMs or ASMs sufficient to reduce the Quiet Zone Risk Index to a level at, or below, the Nationwide Significant Risk Threshold, or the Risk Index With Horns, and receive approval from the Associate Administrator, under the procedures set forth in § 222.39(b) of this part, for continuation of the quiet zone. If the Quiet Zone Risk Index is reduced to a level that fully compensates for the absence of the train

horn, the quiet zone will be considered to have been established pursuant to § 222.39(a)(3) of this part and subsequent annual risk reviews will not be conducted for that quiet zone.

(iii) Failure to comply with paragraph (b)(4)(i) of this section shall result in the termination of the quiet zone six months after the date of receipt of notification from FRA. Failure to comply with paragraph (b)(4)(ii) of this section shall result in the termination of the quiet zone three years after the date of receipt of notification from FRA.

(c) *Review at FRA's initiative.* (1) The Associate Administrator may, at any time, review the status of any quiet zone.

(2) If the Associate Administrator makes any of the following preliminary determinations, the Associate Administrator will provide written notice to the public authority, all railroads operating over public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety and will publish a notice of the determination in the **Federal Register**:

(i) Safety systems and measures implemented within the quiet zone do not fully compensate for the absence of the locomotive horn due to a substantial increase in risk;

(ii) Documentation relied upon to establish the quiet zone contains substantial errors that may have an adverse impact on public safety; or

(iii) Significant risk with respect to loss of life or serious personal injury exists within the quiet zone.

(3) After providing an opportunity for comment, the Associate Administrator may require that additional safety measures be taken or that the quiet zone be terminated. The Associate Administrator will provide a copy of his/her decision to the public authority and all parties listed in paragraph (c)(2) of this section. The public authority may appeal the Associate Administrator's decision in accordance with § 222.57(c) of this part. Nothing in this section is intended to limit the Administrator's emergency authority under 49 U.S.C. 20104 and 49 CFR part 211.

(d) *Termination by the public authority.* (1) Any public authority that participated in the establishment of a quiet zone under the provisions of this

part may, at any time, withdraw its quiet zone status.

(2) A public authority may withdraw its quiet zone status by providing written notice of termination, by certified mail, return receipt requested, to all railroads operating the public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator.

(3)(i) If the quiet zone that is being withdrawn was part of a multi-jurisdictional quiet zone, the remaining quiet zones may remain in effect, provided the public authorities responsible for the remaining quiet zones provide statements to the Associate Administrator certifying that the Quiet Zone Risk Index for each remaining quiet zone is at, or below, the Nationwide Significant Risk Threshold or the Risk Index With Horns. These statements shall be provided, no later than six months after the date on which the notice of quiet zone termination was mailed, to all parties listed in paragraph (d)(2) of this section.

(ii) If any remaining quiet zone has a Quiet Zone Risk Index in excess of the Nationwide Significant Risk Threshold and the Risk Index With Horns, the public authority responsible for the quiet zone shall submit a written commitment, to all parties listed in paragraph (d)(2) of this section, to reduce the Quiet Zone Risk Index to a level at or below the Nationwide Significant Risk Threshold or the Risk Index With Horns within three years. Included in the commitment statement shall be a discussion of the specific steps to be taken by the public authority to reduce the Quiet Zone Risk Index. This commitment statement shall be provided to all parties listed in paragraph (d)(2) of this section no later than six months after the date on which the notice of quiet zone termination was mailed.

(iii) Failure to comply with paragraphs (d)(3)(i) and (d)(3)(ii) of this section shall result in the termination of the remaining quiet zone(s) six months after the date on which the notice of quiet zone termination was mailed by the withdrawing public authority in accordance with paragraph (d)(2) of this section.

(iv) Failure to complete implementation of SSMs and/or ASMs to reduce the Quiet Zone Risk Index to



a level at, or below, the Nationwide Significant Risk Index or the Risk Index With Horns, in accordance with the written commitment provided under paragraph (d)(3)(ii) of this section, shall result in the termination of quiet zone status three years after the date on which the written commitment was received by FRA.

(e) *Notification of termination.* (1) In the event that a quiet zone is terminated under the provisions of this section, it shall be the responsibility of the public authority to immediately provide written notification of the termination by certified mail, return receipt requested, to all railroads operating over public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator.

(2) Notwithstanding paragraph (e)(1) of this section, if a quiet zone is terminated under the provisions of this section, FRA shall also provide written notification to all parties listed in paragraph (e)(1) of this section.

(f) *Requirement to sound the locomotive horn.* Upon receipt of notification of quiet zone termination pursuant to paragraph (e) of this section, railroads shall, within seven days, and in accordance with the provisions of this part, sound the locomotive horn when approaching and passing through every public highway-rail grade crossing within the former quiet zone.

**§ 222.53 What are the requirements for supplementary and alternative safety measures?**

(a) Approved SSMs are listed in appendix A of this part. With the exception of permanent crossing closures, approved SSMs can qualify for quiet zone risk reduction credit in the manner specified in appendix A of this part.

(b) Additional ASMs that may be included in a request for FRA approval of a quiet zone under § 222.39(b) of this part are listed in appendix B of this part. Modified SSMs can qualify for quiet zone risk reduction credit in the manner specified in appendix B of this part.

(c) The following do not, individually or in combination, constitute SSMs or ASMs: Standard traffic control device arrangements such as reflectorized crossbucks, STOP signs, flashing lights, or flashing lights with gates that do not

completely block travel over the line of railroad, or traffic signals.

**§ 222.55 How are new supplementary or alternative safety measures approved?**

(a) The Associate Administrator may add new SSMs and standards to appendix A of this part and new ASMs and standards to appendix B of this part when the Associate Administrator determines that such measures or standards are an effective substitute for the locomotive horn in the prevention of collisions and casualties at public highway-rail grade crossings.

(b) Interested parties may apply for approval from the Associate Administrator to demonstrate proposed new SSMs or ASMs to determine whether they are effective substitutes for the locomotive horn in the prevention of collisions and casualties at public highway-rail grade crossings.

(c) The Associate Administrator may, after notice and opportunity for comment, order railroad carriers operating over a public highway-rail grade crossing or crossings to temporarily cease the sounding of locomotive horns at such crossings to demonstrate proposed new SSMs or ASMs, provided that such proposed new SSMs or ASMs have been subject to prior testing and evaluation. In issuing such order, the Associate Administrator may impose any conditions or limitations on such use of the proposed new SSMs or ASMs which the Associate Administrator deems necessary in order to provide the level of safety at least equivalent to that provided by the locomotive horn.

(d) Upon completion of a demonstration of proposed new SSMs or ASMs, interested parties may apply to the Associate Administrator for their approval. Applications for approval shall be in writing and shall include the following:

- (1) The name and address of the applicant;
- (2) A description and design of the proposed new SSM or ASM;
- (3) A description and results of the demonstration project in which the proposed SSMs or ASMs were tested;
- (4) Estimated costs of the proposed new SSM or ASM; and
- (5) Any other information deemed necessary.

(e) If the Associate Administrator is satisfied that the proposed safety measure fully compensates for the absence of the warning provided by the locomotive horn, the Associate Administrator will approve its use as an SSM to be used in the same manner as the measures listed in appendix A of this part, or the Associate Administrator

may approve its use as an ASM to be used in the same manner as the measures listed in appendix B of this part. The Associate Administrator may impose any conditions or limitations on use of the SSMs or ASMs which the Associate Administrator deems necessary in order to provide the level of safety at least equivalent to that provided by the locomotive horn.

(f) If the Associate Administrator approves a new SSM or ASM, the Associate Administrator will: notify the applicant, if any; publish notice of such action in the **Federal Register**; and add the measure to the list of approved SSMs or ASMs.

(g) A public authority or other interested party may appeal to the Administrator from a decision by the Associate Administrator granting or denying an application for approval of a proposed SSM or ASM, or the conditions or limitations imposed on its use, in accordance with § 222.57 of this part.

**§ 222.57 Can parties seek review of the Associate Administrator's actions?**

(a) A public authority or other interested party may petition the Administrator for review of any decision by the Associate Administrator granting or denying an application for approval of a new SSM or ASM under § 222.55 of this part. The petition must be filed within 60 days of the decision to be reviewed, specify the grounds for the requested relief, and be served upon the following parties: all railroads ordered to temporarily cease sounding of the locomotive horn over public highway-rail grade crossings for the demonstration of the proposed new SSM or ASM, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings affected by the new SSM/ASM demonstration, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator. Unless the Administrator specifically provides otherwise, and gives notice to the petitioner or publishes a notice in the **Federal Register**, the filing of a petition under this paragraph does not stay the effectiveness of the action sought to be reviewed. The Administrator may reaffirm, modify, or revoke the decision of the Associate Administrator without further proceedings and shall notify the petitioner and other interested parties in writing or by publishing a notice in the **Federal Register**.

(b) A public authority may request reconsideration of a decision by the Associate Administrator to deny an

application by that authority for approval of a quiet zone, or to require additional safety measures, by filing a petition for reconsideration with the Associate Administrator. The petition must specify the grounds for asserting that the Associate Administrator improperly exercised his/her judgment in finding that the proposed SSMs and ASMs would not result in a Quiet Zone Risk Index that would be at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold. The petition shall be filed within 60 days of the date of the decision to be reconsidered and be served upon all parties listed in § 222.39(b)(3) of this part. Upon receipt of a timely and proper petition, the Associate Administrator will provide the petitioner an opportunity to submit additional materials and to request an informal hearing. Upon review of the additional materials and completion of any hearing requested, the Associate Administrator shall issue a decision on the petition that will be administratively final.

(c) A public authority may request reconsideration of a decision by the Associate Administrator to terminate quiet zone status by filing a petition for reconsideration with the Associate Administrator. The petition must be filed within 60 days of the date of the decision, specify the grounds for the requested relief, and be served upon all parties listed in § 222.51(c)(2) of this part. Unless the Associate Administrator publishes a notice in the **Federal Register** that specifically stays the effectiveness of his/her decision, the filing of a petition under this paragraph will not stay the termination of quiet zone status. Upon receipt of a timely and proper petition, the Associate Administrator will provide the petitioner an opportunity to submit additional materials and to request an informal hearing. Upon review of the additional materials and completion of any hearing requested, the Associate Administrator shall issue a decision on the petition that will be administratively final. A copy of this decision shall be served upon all parties listed in § 222.51(c)(2) of this part.

(d) A railroad may request reconsideration of a decision by the Associate Administrator to approve an application for approval of a proposed quiet zone under § 222.39(b) of this part by filing a petition for reconsideration with the Associate Administrator. The petition must specify the grounds for asserting that the Associate Administrator improperly exercised his/her judgment in finding that the proposed SSMs and ASMs would result

in a Quiet Zone Risk Index that would be at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold. The petition shall be filed within 60 days of the date of the decision to be reconsidered, and be served upon all parties listed in § 222.39(b)(3) of this part. Upon receipt of a timely and proper petition, the Associate Administrator will provide the petitioner an opportunity to submit additional materials and to request an informal hearing. Upon review of the additional materials and completion of any hearing requested, the Associate Administrator shall issue a decision that will be administratively final.

**§ 222.59 When may a wayside horn be used?**

(a)(1) A wayside horn conforming to the requirements of appendix E of this part may be used in lieu of a locomotive horn at any highway-rail grade crossing equipped with an active warning system consisting of, at a minimum, flashing lights and gates.

(2) A wayside horn conforming to the requirements of appendix E of this part may be installed within a quiet zone. For purposes of calculating the length of a quiet zone, the presence of a wayside horn at a highway-grade crossing within a quiet zone shall be considered in the same manner as a grade crossing treated with an SSM. A grade crossing equipped with a wayside horn shall not be considered in calculating the Quiet Zone Risk Index or Crossing Corridor Risk Index.

(b) A public authority installing a wayside horn at a grade crossing within a quiet zone shall provide written notice that a wayside horn is being installed to all railroads operating over the public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossings within the quiet zone, the landowner having control over any private crossings within the quiet zone, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator. This notice shall provide the date on which the wayside horn will be operational and identify the grade crossing at which the wayside horn shall be installed by both the U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name. The railroad or public authority shall provide notification of the operational date at least 21 days in advance.

(c) A railroad or public authority installing a wayside horn at a grade crossing located outside a quiet zone

shall provide written notice that a wayside horn is being installed to all railroads operating over the public highway-rail grade crossing, the highway or traffic control authority or law enforcement authority having control over vehicular traffic at the crossing, the State agency responsible for grade crossing safety, the State agency responsible for highway and road safety, and the Associate Administrator. This notice shall provide the date on which the wayside horn will be operational and identify the grade crossing at which the wayside horn shall be installed by both the U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name. The railroad or public authority shall provide notification of the operational date at least 21 days in advance.

(d) A railroad operating over a grade crossing equipped with an operational wayside horn installed within a quiet zone pursuant to this section shall cease routine locomotive horn use at the grade crossing. A railroad operating over a grade crossing that is equipped with a wayside horn and located outside of a quiet zone shall cease routine locomotive horn use at the grade crossing on the operational date specified in the notice required by paragraph (c) of this section.

**Appendix A to Part 222—Approved Supplementary Safety Measures**

**A. Requirements and Effectiveness Rates for Supplementary Safety Measures**

This section provides a list of approved supplementary safety measures (SSMs) that may be installed at highway-rail grade crossings within quiet zones for risk reduction credit. Each SSM has been assigned an effectiveness rate, which may be subject to adjustment as research and demonstration projects are completed and data is gathered and refined. Sections B and C govern the process through which risk reduction credit for pre-existing SSMs can be determined.

1. *Temporary Closure of a Public Highway-Rail Grade Crossing:* Close the crossing to highway traffic during designated quiet periods. (This SSM can only be implemented within Partial Quiet Zones.)

*Effectiveness:* 1.0.

Because an effective closure system prevents vehicle entrance onto the crossing, the probability of a collision with a train at the crossing is zero during the period the crossing is closed. Effectiveness would therefore equal 1. However, analysis should take into consideration that traffic would need to be redistributed among adjacent crossings or grade separations for the purpose of estimating risk following the silencing of train horns, unless the particular "closure" was accomplished by a grade separation.

*Required:*

a. The closure system must completely block highway traffic on all approach lanes to the crossing.

b. The closure system must completely block adjacent pedestrian crossings.

c. Public highway-rail grade crossings located within New Partial Quiet Zones shall be closed from 10 p.m. until 7 a.m. every day. Public highway-rail grade crossings located within Pre-Rule Partial Quiet Zones may only be closed during one period each 24 hours.

d. Barricades and signs used for closure of the roadway shall conform to the standards contained in the MUTCD.

e. Daily activation and deactivation of the system is the responsibility of the public authority responsible for maintenance of the street or highway crossing the railroad tracks. The public authority may provide for third party activation and deactivation; however, the public authority shall remain fully responsible for compliance with the requirements of this part.

f. The system must be tamper and vandal resistant to the same extent as other traffic control devices.

g. The closure system shall be equipped with a monitoring device that contains an indicator which is visible to the train crew prior to entering the crossing. The indicator shall illuminate whenever the closure device is deployed.

*Recommended:*

Signs for alternate highway traffic routes should be erected in accordance with MUTCD and State and local standards and should inform pedestrians and motorists that the streets are closed, the period for which they are closed, and that alternate routes must be used.

2. *Four-Quadrant Gate System:* Install gates at a crossing sufficient to fully block highway traffic from entering the crossing when the gates are lowered, including at least one gate for each direction of traffic on each approach.

*Effectiveness:*

Four-quadrant gates only, no presence detection: .82.

Four-quadrant gates only, with presence detection: .77.

Four-quadrant gates with traffic channelization of at least 60 feet, (with or without presence detection): .92.

*Required:*

Four-quadrant gate systems shall conform to the standards for four-quadrant gates contained in the MUTCD and shall, in addition, comply with the following:

a. When a train is approaching, all highway approach and exit lanes on both sides of the highway-rail crossing must be spanned by gates, thus denying to the highway user the option of circumventing the conventional approach lane gates by switching into the opposing (oncoming) traffic lane in order to enter the crossing and cross the tracks.

b. Crossing warning systems must be activated by use of constant warning time devices unless existing conditions at the crossing would prevent the proper operation of the constant warning time devices.

c. Crossing warning systems must be equipped with power-out indicators.

**Note:** Requirements b and c apply only to New Quiet Zones or New Partial Quiet Zones. Constant warning time devices and

power-out indicators are not required to be added to existing warning systems in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones. However, if existing automatic warning device systems in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones are renewed, or new automatic warning device systems are installed, power-out indicators and constant warning time devices are required, unless existing conditions at the crossing would prevent the proper operation of the constant warning devices.

d. The gap between the ends of the entrance and exit gates (on the same side of the railroad tracks) when both are in the fully lowered, or down, position must be less than two feet if no median is present. If the highway approach is equipped with a median or a channelization device between the approach and exit lanes, the lowered gates must reach to within one foot of the median or channelization device, measured horizontally across the road from the end of the lowered gate to the median or channelization device or to a point over the edge of the median or channelization device. The gate and the median top or channelization device do not have to be at the same elevation.

e. "Break-away" channelization devices must be frequently monitored to replace broken elements.

*Recommendations for new installations only:*

f. Gate timing should be established by a qualified traffic engineer based on site specific determinations. Such determination should consider the need for and timing of a delay in the descent of the exit gates (following descent of the conventional entrance gates). Factors to be considered may include available storage space between the gates that is outside the fouling limits of the track(s) and the possibility that traffic flows may be interrupted as a result of nearby intersections.

g. A determination should be made as to whether it is necessary to provide vehicle presence detectors (VPDs) to open or keep open the exit gates until all vehicles are clear of the crossing. VPDs should be installed on one or both sides of the crossing and/or in the surface between the rails closest to the field. Among the factors that should be considered are the presence of intersecting roadways near the crossing, the priority that the traffic crossing the railroad is given at such intersections, the types of traffic control devices at those intersections, and the presence and timing of traffic signal preemption.

h. Highway approaches on one or both sides of the highway-rail crossing may be provided with medians or channelization devices between the opposing lanes. Medians should be defined by a non-traversable curb or traversable curb, or by reflectorized channelization devices, or by both.

i. Remote monitoring (in addition to power-out indicators, which are required) of the status of these crossing systems is preferable. This is especially important in those areas in which qualified railroad signal department personnel are not readily available.

3. *Gates With Medians or Channelization Devices:* Install medians or channelization

devices on both highway approaches to a public highway-rail grade crossing denying to the highway user the option of circumventing the approach lane gates by switching into the opposing (oncoming) traffic lane and driving around the lowered gates to cross the tracks.

*Effectiveness:*

channelization devices—.75.

non-traversable curbs with or without channelization devices—.80.

*Required:*

a. Opposing traffic lanes on both highway approaches to the crossing must be separated by either: (1) medians bounded by non-traversable curbs or (2) channelization devices.

b. Medians or channelization devices must extend at least 100 feet from the gate arm, or if there is an intersection within 100 feet of the gate, the median or channelization device must extend at least 60 feet from the gate arm.

c. Intersections of two or more streets, or a street and an alley, that are within 60 feet of the gate arm must be closed or relocated. Driveways for private, residential properties (up to four units) within 60 feet of the gate arm are not considered to be intersections under this part and need not be closed. However, consideration should be given to taking steps to ensure that motorists exiting the driveways are not able to move against the flow of traffic to circumvent the purpose of the median and drive around lowered gates. This may be accomplished by the posting of "no left turn" signs or other means of notification. For the purpose of this part, driveways accessing commercial properties are considered to be intersections and are not allowed. It should be noted that if a public authority can not comply with the 60 feet or 100 feet requirement, it may apply to FRA for a quiet zone under § 222.39(b), "Public authority application to FRA." Such arrangement may qualify for a risk reduction credit in calculation of the Quiet Zone Risk Index. Similarly, if a public authority finds that it is feasible to only provide channelization on one approach to the crossing, it may also apply to FRA for approval under § 222.39(b). Such an arrangement may also qualify for a risk reduction credit in calculation of the Quiet Zone Risk Index.

d. Crossing warning systems must be activated by use of constant warning time devices unless existing conditions at the crossing would prevent the proper operation of the constant warning time devices.

e. Crossing warning systems must be equipped with power-out indicators. Note: Requirements d and e apply only to New Quiet Zones and New Partial Quiet Zones. Constant warning time devices and power-out indicators are not required to be added to existing warning systems in Pre-Rule Quiet Zones or Pre-Rule Partial Quiet Zones. However, if existing automatic warning device systems in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones are renewed, or new automatic warning device systems are installed, power-out indicators and constant warning time devices are required, unless existing conditions at the crossing would prevent the proper operation of the constant warning devices.

f. The gap between the lowered gate and the curb or channelization device must be one foot or less, measured horizontally across the road from the end of the lowered gate to the curb or channelization device or to a point over the curb edge or channelization device. The gate and the curb top or channelization device do not have to be at the same elevation.

g. "Break-away" channelization devices must be frequently monitored to replace broken elements.

4. *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.

*Effectiveness*: .82.

*Required*:

a. Gate arms on the approach side of the crossing should extend across the road to within one foot of the far edge of the pavement. If a gate is used on each side of the road, the gap between the ends of the gates when both are in the lowered, or down, position must be no more than two feet.

b. If only one gate is used, the edge of the road opposite the gate mechanism must be configured with a non-traversable curb extending at least 100 feet.

c. Crossing warning systems must be activated by use of constant warning time devices unless existing conditions at the crossing would prevent the proper operation of the constant warning time devices.

d. Crossing warning systems must be equipped with power-out indicators.

**Note:** Requirements c and d apply only to New Quiet Zones and New Partial Quiet Zones. Constant warning time devices and power-out indicators are not required to be added to existing warning systems in Pre-Rule Quiet Zones or Pre-Rule Partial Quiet Zones. If automatic warning systems are, however, installed or renewed in a Pre-Rule Quiet or Pre-Rule Partial Quiet Zone, power-out indicators and constant warning time devices shall be installed, unless existing conditions at the crossing would prevent the proper operation of the constant warning time devices.

5. *Permanent Closure of a Public Highway-Rail Grade Crossing*: Permanently close the crossing to highway traffic.

*Effectiveness*: 1.0.

*Required*:

a. The closure system must completely block highway traffic from entering the grade crossing.

b. Barricades and signs used for closure of the roadway shall conform to the standards contained in the MUTCD.

c. The closure system must be tamper and vandal resistant to the same extent as other traffic control devices.

d. Since traffic will be redistributed among adjacent crossings, the traffic counts for adjacent crossings shall be increased to reflect the diversion of traffic from the closed crossing.

#### **B. Credit for Pre-Existing SSMs in New Quiet Zones and New Partial Quiet Zones**

A community that has implemented a pre-existing SSM at a public grade crossing can receive risk reduction credit by inflating the Risk Index With Horns as follows:

1. Calculate the current risk index for the grade crossing that is equipped with a qualifying, pre-existing SSM. (See appendix D. FRA's web-based Quiet Zone Calculator may be used to complete this calculation.)

2. Adjust the risk index by accounting for the increased risk that was avoided by implementing the pre-existing SSM at the public grade crossing. This adjustment can be made by dividing the risk index by one minus the SSM effectiveness rate. (For example, the risk index for a crossing equipped with pre-existing channelization devices would be divided by .25.)

3. Add the current risk indices for the other public grade crossings located within the proposed quiet zone and divide by the number of crossings. The resulting risk index will be the new Risk Index With Horns for the proposed quiet zone.

#### **C. Credit for Pre-Existing SSMs in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones**

A community that has implemented a pre-existing SSM at a public grade crossing can receive risk reduction credit by inflating the Risk Index With Horns as follows:

1. Calculate the current risk index for the grade crossing that is equipped with a qualifying, pre-existing SSM. (See appendix D. FRA's web-based Quiet Zone Calculator may be used to complete this calculation.)

2. Reduce the current risk index for the grade crossing to reflect the risk reduction that would have been achieved if the locomotive horn was routinely sounded at the crossing. The following list sets forth the estimated risk reduction for certain types of crossings:

a. Risk indices for passive crossings shall be reduced by 43%;

b. Risk indices for grade crossings equipped with automatic flashing lights shall be reduced by 27%; and

c. Risk indices for gated crossings shall be reduced by 40%.

3. Adjust the risk index by accounting for the increased risk that was avoided by implementing the pre-existing SSM at the public grade crossing. This adjustment can be made by dividing the risk index by one minus the SSM effectiveness rate. (For example, the risk index for a crossing equipped with pre-existing channelization devices would be divided by .25.)

4. Adjust the risk indices for the other crossings that are included in the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone by reducing the current risk index to reflect the risk reduction that would have been achieved if the locomotive horn was routinely sounded at each crossing. Please refer to step two for the list of approved risk reduction percentages by crossing type.

5. Add the new risk indices for each crossing located within the proposed quiet zone and divide by the number of crossings. The resulting risk index will be the new Risk Index With Horns for the quiet zone.

#### **Appendix B to Part 222—Alternative Safety Measures**

##### **Introduction**

A public authority seeking approval of a quiet zone under public authority application

to FRA (§ 222.39(b)) may include ASMs listed in this appendix in its proposal. This appendix addresses three types of ASMs: Modified SSMs, Non-Engineering ASMs, and Engineering ASMs. Modified SSMs are SSMs that do not fully comply with the provisions listed in appendix A. As provided in section I.B. of this appendix, public authorities can obtain risk reduction credit for pre-existing modified SSMs under the final rule. Non-engineering ASMs consist of programed enforcement, public education and awareness, and photo enforcement programs that may be used to reduce risk within a quiet zone. Engineering ASMs consist of engineering improvements that address underlying geometric conditions, including sight distance, that are the source of increased risk at crossings.

#### **I. Modified SSMs**

##### *A. Requirements and Effectiveness Rates for Modified SSMs*

1. If there are unique circumstances pertaining to a specific crossing or number of crossings which prevent SSMs from being fully compliant with all of the SSM requirements listed in appendix A, those SSM requirements may be adjusted or revised. In that case, the SSM, as modified by the public authority, will be treated as an ASM under this appendix B, and not as a SSM under appendix A. FRA will review the safety effects of the modified SSMs and the proposed quiet zone, and will approve the proposal if it finds that the Quiet Zone Risk Index is reduced to the level that would be expected with the sounding of the train horns or to a level at, or below the Nationwide Significant Risk Threshold, whichever is greater.

2. A public authority may provide estimates of effectiveness based upon adjustments from the effectiveness levels provided in appendix A or from actual field data derived from the crossing sites. The specific crossing and applied mitigation measure will be assessed to determine the effectiveness of the modified SSM. FRA will continue to develop and make available effectiveness estimates and data from experience under the final rule.

3. If one or more of the requirements associated with an SSM as listed in appendix A is revised or deleted, data or analysis supporting the revision or deletion must be provided to FRA for review. The following engineering types of ASMs may be included in a proposal for approval by FRA for creation of a quiet zone: (1) Temporary Closure of a Public Highway-Rail Grade Crossing, (2) Four-Quadrant Gate System, (3) Gates With Medians or Channelization Devices, and (4) One-Way Street With Gate(s).

##### *B. Credit for Pre-Existing Modified SSMs in New Quiet Zones and New Partial Quiet Zones*

A community that has implemented a pre-existing modified SSM at a public grade crossing can receive risk reduction credit by inflating the Risk Index With Horns as follows:

1. Calculate the current risk index for the grade crossing that is equipped with a pre-

existing modified SSM. (See appendix D. FRA's web-based Quiet Zone Calculator may be used to complete this calculation.)

2. Obtain FRA approval of the estimated effectiveness rate for the pre-existing modified SSM. Estimated effectiveness rates may be based upon adjustments from the SSM effectiveness rates provided in appendix A or actual field data derived from crossing sites.

3. Adjust the risk index by accounting for the increased risk that was avoided by implementing the pre-existing modified SSM at the public grade crossing. This adjustment may be made by dividing the risk index by one minus the FRA-approved modified SSM effectiveness rate.

4. Add the current risk indices for the other public grade crossings located within the proposed quiet zone and divide by the number of crossings. The resulting risk index will be the new Risk Index With Horns for the proposed quiet zone.

#### C. Credit for Pre-Existing Modified SSMs in Pre-Rule Quiet Zones and Pre-Rule Partial Quiet Zones

A community that has implemented a pre-existing modified SSM at a public grade crossing can receive risk reduction credit by inflating the Risk Index With Horns as follows:

1. Calculate the current risk index for the grade crossing that is equipped with a pre-existing modified SSM. (See appendix D. FRA's web-based Quiet Zone Calculator may be used to complete this calculation.)

2. Reduce the current risk index for the grade crossing to reflect the risk reduction that would have been achieved if the locomotive horn was routinely sounded at the crossing. The following list sets forth the estimated risk reduction for certain types of crossings:

a. Risk indices for passive crossings shall be reduced by 43%;

b. Risk indices for grade crossings equipped with automatic flashing lights shall be reduced by 27%; and

c. Risk indices for gated crossings shall be reduced by 40%.

3. Obtain FRA approval of the estimated effectiveness rate for the pre-existing modified SSM. Estimated effectiveness rates may be based upon adjustments from the SSM effectiveness rates provided in appendix A or actual field data derived from crossing sites.

4. Adjust the risk index by accounting for the increased risk that was avoided by implementing the pre-existing modified SSM at the public grade crossing. This adjustment may be made by dividing the risk index by one minus the FRA-approved modified SSM effectiveness rate.

5. Adjust the risk indices for the other crossings that are included in the Pre-Rule Quiet Zone or Pre-Rule Partial Quiet Zone by reducing the current risk index to reflect the risk reduction that would have been achieved if the locomotive horn was routinely sounded at each crossing. Please refer to step two for the list of approved risk reduction percentages by crossing type.

6. Add the new risk indices for each crossing located within the proposed quiet

zone and divide by the number of crossings. The resulting risk index will be the new Risk Index With Horns for the quiet zone.

#### II. Non-engineering ASMs

A. The following non-engineering ASMs may be used in the creation of a Quiet Zone: (The method for determining the effectiveness of the non-engineering ASMs, the implementation of the quiet zone, subsequent monitoring requirements, and dealing with an unacceptable effectiveness rate is provided in paragraph B.)

1. *Programmed Enforcement:* Community and law enforcement officials commit to a systematic and measurable crossing monitoring and traffic law enforcement program at the public highway-rail grade crossing, alone or in combination with the Public Education and Awareness ASM.

##### *Required:*

a. Subject to audit, a statistically valid baseline violation rate must be established through automated or systematic manual monitoring or sampling at the subject crossing(s); and

b. A law enforcement effort must be defined, established and continued along with continual or regular monitoring that provides a statistically valid violation rate that indicates the effectiveness of the law enforcement effort.

c. The public authority shall retain records pertaining to monitoring and sampling efforts at the grade crossing for a period of not less than five years. These records shall be made available, upon request, to FRA as provided by 49 U.S.C. 20107.

2. *Public Education and Awareness:* Conduct, alone or in combination with programmed law enforcement, a program of public education and awareness directed at motor vehicle drivers, pedestrians and residents near the railroad to emphasize the risks associated with public highway-rail grade crossings and applicable requirements of state and local traffic laws at those crossings.

##### *Requirements:*

a. Subject to audit, a statistically valid baseline violation rate must be established through automated or systematic manual monitoring or sampling at the subject crossing(s); and

b. A sustainable public education and awareness program must be defined, established and continued along with continual or regular monitoring that provides a statistically valid violation rate that indicates the effectiveness of the public education and awareness effort. This program shall be provided and supported primarily through local resources.

c. The public authority shall retain records pertaining to monitoring and sampling efforts at the grade crossing for a period of not less than five years. These records shall be made available, upon request, to FRA as provided by 49 U.S.C. 20107.

3. *Photo Enforcement:* This ASM entails automated means of gathering valid photographic or video evidence of traffic law violations at a public highway-rail grade crossing together with follow-through by law enforcement and the judiciary.

##### *Requirements:*

a. State law authorizing use of photographic or video evidence both to bring charges and sustain the burden of proof that a violation of traffic laws concerning public highway-rail grade crossings has occurred, accompanied by commitment of administrative, law enforcement and judicial officers to enforce the law;

b. Sanction includes sufficient minimum fine (e.g., \$100 for a first offense, "points" toward license suspension or revocation) to deter violations;

c. Means to reliably detect violations (e.g., loop detectors, video imaging technology);

d. Photographic or video equipment deployed to capture images sufficient to document the violation (including the face of the driver, if required to charge or convict under state law).

**Note:** This does not require that each crossing be continually monitored. The objective of this option is deterrence, which may be accomplished by moving photo/video equipment among several crossing locations, as long as the motorist perceives the strong possibility that a violation will lead to sanctions. Each location must appear identical to the motorist, whether or not surveillance equipment is actually placed there at the particular time. Surveillance equipment should be in place and operating at each crossing at least 25 percent of each calendar quarter.

e. Appropriate integration, testing and maintenance of the system to provide evidence supporting enforcement;

f. Public awareness efforts designed to reinforce photo enforcement and alert motorists to the absence of train horns;

g. Subject to audit, a statistically valid baseline violation rate must be established through automated or systematic manual monitoring or sampling at the subject crossing(s); and

h. A law enforcement effort must be defined, established and continued along with continual or regular monitoring.

i. The public authority shall retain records pertaining to monitoring and sampling efforts at the grade crossing for a period of not less than five years. These records shall be made available, upon request, to FRA as provided by 49 U.S.C. 20107.

B. The effectiveness of an ASM will be determined as follows:

1. Establish the quarterly (three months) baseline violation rates for each crossing in the proposed quiet zone.

a. A violation in this context refers to a motorist not complying with the automatic warning devices at the crossing (not stopping for the flashing lights and driving over the crossing after the gate arms have started to descend, or driving around the lowered gate arms). A violation does not have to result in a traffic citation for the violation to be considered.

b. Violation data may be obtained by any method that can be shown to provide a statistically valid sample. This may include the use of video cameras, other technologies (e.g., inductive loops), or manual observations that capture driver behavior when the automatic warning devices are operating.

c. If data is not collected continuously during the quarter, sufficient detail must be

provided in the application in order to validate that the methodology used results in a statistically valid sample. FRA recommends that at least a minimum of 600 samples (one sample equals one gate activation) be collected during the baseline and subsequent quarterly sample periods.

d. The sampling methodology must take measures to avoid biases in their sampling technique. Potential sampling biases could include: Sampling on certain days of the week but not others; sampling during certain times of the day but not others; sampling immediately after implementation of an ASM while the public is still going through an adjustment period; or applying one sample method for the baseline rate and another for the new rate.

e. The baseline violation rate should be expressed as the number of violations per gate activations in order to normalize for unequal gate activations during subsequent data collection periods.

f. All subsequent quarterly violation rate calculations must use the same methodology as stated in this paragraph unless FRA authorizes another methodology.

2. The ASM should then be initiated for each crossing. Train horns are still being sounded during this time period.

3. In the calendar quarter following initiation of the ASM, determine a new quarterly violation rate using the same methodology as in paragraph (1) above.

4. Determine the violation rate reduction for each crossing by the following formula:

$$\text{Violation rate reduction} = (\text{new rate} - \text{baseline rate}) / \text{baseline rate}$$

5. Determined the effectiveness rate of the ASM for each crossing by multiplying the violation rate reduction by .78.

6. Using the effectiveness rates for each grade crossing treated by an ASM, determine the Quiet Zone Risk Index. If and when the Quiet Zone Risk Index for the proposed quiet zone has been reduced to a level at, or below, the Risk Index With Horns or the Nationwide Significant Risk Threshold, the public authority may apply to FRA for approval of the proposed quiet zone. Upon receiving written approval of the quiet zone application from FRA, the public authority may then proceed with notifications and implementation of the quiet zone.

7. Violation rates must be monitored for the next two calendar quarters and every second quarter thereafter. If, after five years from the implementation of the quiet zone, the violation rate for any quarter has never exceeded the violation rate that was used to determine the effectiveness rate that was approved by FRA, violation rates may be monitored for one quarter per year.

8. In the event that the violation rate is ever greater than the violation rate used to determine the effectiveness rate that was approved by FRA, the public authority may continue the quiet zone for another quarter. If, in the second quarter the violation rate is still greater than the rate used to determine the effectiveness rate that was approved by FRA, a new effectiveness rate must be calculated and the Quiet Zone Risk Index re-calculated using the new effectiveness rate. If the new Quiet Zone Risk Index indicates that the ASM no longer fully compensates for the

lack of a train horn, or that the risk level is equal to, or exceeds the National Significant Risk Threshold, the procedures for dealing with unacceptable effectiveness after establishment of a quiet zone should be followed.

### III. Engineering ASMs

A. Engineering improvements, other than modified SSMs, may be used in the creation of a Quiet Zone. These engineering improvements, which will be treated as ASMs under this appendix, may include improvements that address underlying geometric conditions, including sight distance, that are the source of increased risk at the crossing.

B. The effectiveness of an Engineering ASM will be determined as follows:

1. Establish the quarterly (three months) baseline violation rate for the crossing at which the Engineering ASM will be applied.

a. A violation in this context refers to a motorist not complying with the automatic warning devices at the crossing (not stopping for the flashing lights and driving over the crossing after the gate arms have started to descend, or driving around the lowered gate arms). A violation does not have to result in a traffic citation for the violation to be considered.

b. Violation data may be obtained by any method that can be shown to provide a statistically valid sample. This may include the use of video cameras, other technologies (e.g., inductive loops), or manual observations that capture driver behavior when the automatic warning devices are operating.

c. If data is not collected continuously during the quarter, sufficient detail must be provided in the application in order to validate that the methodology used results in a statistically valid sample. FRA recommends that at least a minimum of 600 samples (one sample equals one gate activation) be collected during the baseline and subsequent quarterly sample periods.

d. The sampling methodology must take measures to avoid biases in their sampling technique. Potential sampling biases could include: sampling on certain days of the week but not others; sampling during certain times of the day but not others; sampling immediately after implementation of an ASM while the public is still going through an adjustment period; or applying one sample method for the baseline rate and another for the new rate.

e. The baseline violation rate should be expressed as the number of violations per gate activations in order to normalize for unequal gate activations during subsequent data collection periods.

f. All subsequent quarterly violation rate calculations must use the same methodology as stated in this paragraph unless FRA authorizes another methodology.

2. The Engineering ASM should be initiated at the crossing. Train horns are still being sounded during this time period.

3. In the calendar quarter following initiation of the Engineering ASM, determine a new quarterly violation rate using the same methodology as in paragraph (1) above.

4. Determine the violation rate reduction for the crossing by the following formula:

$$\text{Violation rate reduction} = (\text{new rate} - \text{baseline rate}) / \text{baseline rate}$$

5. Using the Engineering ASM effectiveness rate, determine the Quiet Zone Risk Index. If and when the Quiet Zone Risk Index for the proposed quiet zone has been reduced to a risk level at or below the Risk Index With Horns or the Nationwide Significant Risk Threshold, the public authority may apply to FRA for approval of the quiet zone. Upon receiving written approval of the quiet zone application from FRA, the public authority may then proceed with notifications and implementation of the quiet zone.

6. Violation rates must be monitored for the next two calendar quarters. Unless otherwise provided in FRA's notification of quiet zone approval, if the violation rate for these two calendar quarters does not exceed the violation rate that was used to determine the effectiveness rate that was approved by FRA, the public authority can cease violation rate monitoring.

7. In the event that the violation rate over either of the next two calendar quarters are greater than the violation rate used to determine the effectiveness rate that was approved by FRA, the public authority may continue the quiet zone for a third calendar quarter. However, if the third calendar quarter violation rate is also greater than the rate used to determine the effectiveness rate that was approved by FRA, a new effectiveness rate must be calculated and the Quiet Zone Risk Index re-calculated using the new effectiveness rate. If the new Quiet Zone Risk Index exceeds the Risk Index With Horns and the Nationwide Significant Risk Threshold, the procedures for dealing with unacceptable effectiveness after establishment of a quiet zone should be followed.

## Appendix C to Part 222—Guide To Establishing Quiet Zones

### Introduction

This Guide to Establishing Quiet Zones (Guide) is divided into five sections in order to address the variety of methods and conditions that affect the establishment of quiet zones under this rule.

Section I of the Guide provides an overview of the different ways in which a quiet zone may be established under this rule. This includes a brief discussion on the safety thresholds that must be attained in order for train horns to be silenced and the relative merits of each. It also includes the two general methods that may be used to reduce risk in the proposed quiet zone, and the different impacts that the methods have on the quiet zone implementation process. This section also discusses Partial (e.g. night time only quiet zones) and Intermediate Quiet Zones. An Intermediate Quiet Zone is one where horn restrictions were in place after October 9, 1996, but as of December 18, 2003.

Section II of the Guide provides information on establishing New Quiet Zones. A New Quiet Zone is one at which train horns are currently being sounded at crossings. The Public Authority Designation and Public Authority Application to FRA methods will be discussed in depth.

Section III of the Guide provides information on establishing Pre-Rule Quiet Zones. A Pre-Rule Quiet Zone is one where train horns were not routinely sounded as of October 9, 1996 and December 18, 2003. The differences between New and Pre-Rule Quiet Zones will be explained. Public Authority Designation and Public Authority Application to FRA methods also apply to Pre-Rule Quiet Zones.

Section IV of the Guide deals with the required notifications that must be provided by public authorities when establishing both New and continuing Pre-Rule or Intermediate 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

(1) 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:

- a. One or more SSMs as identified in appendix A are installed at *each* public crossing in the quiet zone; or
- b. 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
- c. 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
- d. Additional safety measures are taken at selected crossings resulting in the Quiet Zone Risk Index being reduced to at least the level of the Risk Index With Horns (that is, the risk that would exist if train horns were sounded at every public crossing in the quiet zone).

(2) 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.

(3) 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.

(4) 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 they still qualify 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.

(5) The use of FRA's web-based Quiet Zone Calculator is recommended to aid in the decision making process (<http://www.fra.dot.gov/us/content/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 SSMs 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. In other words, the Quiet Zone Calculator does not need to be used. 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 (which includes a copy of the report generated by the Quiet Zone Calculator showing that the risk in the quiet zone has been sufficiently reduced), 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 modified SSMs that do not fully comply with the provisions found in appendix A (*e.g.*, shorter than required traffic channelization devices), non-engineering ASMs (*e.g.*, programmed law enforcement), and engineering ASMs (*i.e.*, engineering improvements other than modified SSMs). If the use of ASMs (or a combination of ASMs and 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. The effectiveness of a closure is 1.0. 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. It should be noted that crossing closures that are already in existence are not considered in the risk calculations.

**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 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% and divide the sum of the three remaining crossings by four. 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. 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 and the existing at-grade crossing closed. 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% and divide the sum of the

three remaining crossings by four. This is the initial Quiet Zone Risk Index and accounts for the risk reduction caused by the grade separation at C Street.

**Pre-Existing SSMs:** Risk reduction credit may be taken by a public authority for a SSM that was previously implemented and is currently in place in the quiet zone. If an existing improvement meets the criteria for a SSM as provided in appendix A, the improvement is deemed a Pre-Existing SSM. Risk reduction credit is obtained by inflating the Risk Index With Horns to show what the risk would have been at the crossing if the pre-existing SSM had not been implemented. Crossing closures and grade separations that occurred prior to the implementation of the quiet zone are not Pre-Existing SSMs and do not receive any risk reduction credit.

**Example 1—** A proposed New Quiet Zone has one crossing that is equipped with flashing lights and gates and has medians 100 feet in length on both sides of the crossing. The medians conform to the requirements in appendix A and qualify as a Pre-Existing SSM. The risk index as calculated for the crossing is 10,000. To calculate the Risk Index With Horns for this crossing, you divide the risk index by difference between one and the effectiveness rate of the pre-existing SSM ( $10,000 \div (1-0.75) = 40,000$ ). This value (40,000) would then be averaged in with the risk indices of the other crossings to determine the proposed quiet zone's Risk Index With Horns. To calculate the Quiet Zone Risk Index, the original risk index is increased by 66.8% to account for the additional risk attributed to the absence of the train horn ( $10,000 \times 1.668 = 16,680$ ). This value (16,680) is then averaged into the risk indices of the other crossings that have also been increased by 66.8%. The resulting average is the Quiet Zone Risk Index.

**Example 2—** A Pre-Rule Quiet Zone consisting of four crossings has one crossing that is equipped with flashing lights and gates and has medians 100 feet in length on both sides of the crossing. The medians conform to the requirements in appendix A and qualify as a Pre-Existing SSM. The risk index as calculated for the crossing is 20,000. To calculate the Risk Index With Horns for this crossing, first reduce the risk index by 40 percent to reflect the risk reduction that would be achieved if train horns were routinely sounded ( $20,000 \times 0.6 = 12,000$ ). Next, divide the resulting risk index by difference between one and the effectiveness rate of the pre-existing SSM ( $12,000 \div (1-0.75) = 48,000$ ). This value (48,000) would then be averaged with the adjusted risk indices of the other crossings to determine the pre-rule quiet zone's Risk Index With Horns. To calculate the Quiet Zone Risk Index, the original risk index (20,000) is then averaged into the risk original indices of the other crossings. The resulting average is the Quiet Zone Risk Index.

**Pre-Existing Modified SSMs:** Risk reduction credit may be taken by a public authority for a modified SSM that was previously implemented and is currently in place in the quiet zone. Modified SSMs are Alternative Safety Measures which must be approved by FRA. If an existing improvement is approved by FRA as a modified SSM as

provided in appendix B, the improvement is deemed a Pre-Existing Modified SSM. Risk reduction credit is obtained by inflating the Risk Index With Horns to show what the risk would have been at the crossing if the pre-existing SSM had not been implemented. The effectiveness rate of the modified SSM will be determined by FRA. The public authority may provide information to FRA to be used in determining the effectiveness rate of the modified SSM. Once an effectiveness rate has been determined, follow the procedure previously discussed for Pre-Existing SSMs to determine the risk values that will be used in the quiet zone calculations.

**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% and average the results. This is the initial Quiet Zone Risk Index for the proposed quiet zone.

### C. Partial Quiet Zones

A Partial Quiet Zone is a quiet zone in which locomotive horns are not routinely sounded at public crossings for a specified period of time each day. For example, a quiet zone during only the nighttime hours would be a partial quiet zone. Partial quiet zones may be either New or Pre-Rule and follow the same rules as 24 hour quiet zones. New Partial Quiet Zones may be in effect during the hours of 10 p.m. to 7 a.m. All New Partial Quiet Zones must comply with all of the requirements for New Quiet Zones. For example, all public grade crossings that are open during the time that horns are silenced must be equipped with flashing lights and gates that are equipped with constant warning time (where practical) and power out indicators. Risk is calculated in exactly the same manner as for New Quiet Zones. The Quiet Zone Risk Index is calculated for the entire 24-hour period, even though the train horn will only be silenced during the hours of 10 p.m. to 7 a.m.

A Pre-Rule Partial Quiet Zone is a partial quiet zone at which train horns were not sounding as of October 9, 1996 and on December 18, 2003. All of the regulations that pertain to Pre-Rule Quiet Zones also pertain to Pre-Rule Partial Quiet Zones. The Quiet Zone Risk Index is calculated for the entire 24-hour period for Pre-Rule Partial Quiet Zones, even though train horns are only silenced during the nighttime hours. Pre-Rule Partial Quiet Zones may qualify for automatic approval in the same manner as Pre-Rule Quiet Zones with one exception. If the Quiet Zone Risk Index is less than twice the National Significant Risk Threshold, and

there have been no relevant collisions during the time period when train horns are silenced, then the Pre-Rule Partial Quiet Zone is automatically qualified. In other words, a relevant collision that occurred during the period of time that train horns were sounded will not disqualify a Pre-Rule Partial Quiet Zone that has a Quiet Zone Risk Index that is less than twice the National Significant Risk Index. Pre-Rule Partial Quiet Zones must provide the notification as required in § 222.43 in order to keep train horns silenced. A Pre-Rule Partial Quiet Zone may be converted to a 24 hour New Quiet Zone by complying with all of the New Quiet Zone regulations.

#### D. Intermediate Quiet Zones

An Intermediate Quiet Zone is one where horn restrictions were in place after October 9, 1996, but as of December 18, 2003 (the publication date of the Interim Final Rule). Intermediate Quiet Zones and Intermediate Partial Quiet Zones will be able to keep train horns silenced until June 24, 2006, provided notification is made per § 222.43. This will enable public authority to have additional time to make the improvement necessary to come into compliance with the rule. Intermediate Quiet Zones must conform to all the requirements for New Quiet Zones by June 24, 2006. Other than having the horn silenced for an additional year, Intermediate Quiet Zones are treated exactly like New Quiet Zones.

#### 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. The requirements are the same regardless of whether a 24-hour or partial quiet zone is being created.

##### 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. The public authority must provide a written Notice of Intent (§ 222.43(a)(1) and § 222.43(b)) to the railroads that operate over the proposed quiet zone, the State agency responsible for highway and road safety and the State agency responsible for grade crossing safety. The purpose of this Notice of Intent is to provide an opportunity for the railroads and the State agencies to provide comments and recommendations to the public authority as it is planning the quiet zone. They will have 60 days to provide these comments to the public authority. The quiet zone cannot be created unless the

Notice of Intent has been provided. FRA encourages public authorities to provide the required Notice of Intent early in the quiet zone development process. The railroads and State agencies can provide an expertise that very well may not be present within the public authority. FRA believes that it will be very useful to include these organizations in the planning process. For example, including railroads and State agencies in the inspections of the crossing will help ensure accurate Inventory information for the crossings. The railroad can provide information on whether the flashing lights and gates are equipped with constant warning time and power out indicators. Pedestrian crossings and private crossings with public access, industrial or commercial use that are within the quiet zone must have a diagnostic team review and be treated according to the team’s recommendations. Railroads and the State agency responsible for grade crossing safety must be invited to the diagnostic team review. Note: Please see Section IV for details on the requirements of a Notice of Intent.

2. Determine all public, private and pedestrian 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.

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

4. A complete and accurate Grade Crossing Inventory Form must be on file with FRA for all crossings (public, private and pedestrian) within the quiet zone. An inspection of each crossing in the proposed quiet zone should be performed and the Grade Crossing Inventory Forms updated, as necessary, to reflect the current conditions at each crossing. (§ 222.43(e)(2)(vi))

5. 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. FRA recommends that these automatic warning devices also be equipped with at least one bell to provide an audible warning to pedestrians. If the warning devices are already equipped with a bell (or bells), the bells may not be removed or deactivated. 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) and 222.35(b)(2))

6. 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. The public authority must invite the State

agency responsible for grade crossing safety and all affected railroads to participate in the diagnostic review. (§§ 222.25(b) and (c))

7. 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. (§§ 222.25(c)(1), 222.35(c)(1) and 222.35(c)(2))

8. Each pedestrian crossing must be reviewed by a diagnostic team and equipped or treated in accordance with the recommendation of the diagnostic team. The public authority must invite the State agency responsible for grade crossing safety and all affected railroads to participate in the diagnostic review. At a minimum pedestrian crossings must be equipped with signs that conform to the MUTCD that advise pedestrians that train horns are not sounded at the crossing. (§ 222.27)

##### 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:

a. One or more SSMs as identified in appendix A are installed at *each* public crossing in the quiet zone (§ 222.39(a)(1)); or

b. 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

c. SSMs 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

d. SSMs 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, Notice of Quiet Zone Establishment shall be provided 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 and pedestrian 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% at gated crossings. The initial Quiet Zone Risk Index is then calculated by averaging the increased risk index for each public crossing within the proposed quiet zone. At this point the Quiet Zone Risk Index will equal the Risk Index with Horns multiplied by 1.668.

5. Compare the Quiet Zone Risk Index to the Nationwide Significant Risk Threshold. If the Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold, then the public authority may decide to designate a quiet zone and provide the Notice of Quiet Zone Establishment. With this approach, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk Index. If the Quiet Zone Risk Index for the quiet zone rises above the Nationwide Significant Risk Threshold, FRA will notify the Public Authority so that appropriate measures can be taken. (See § 222.51(a)).

6. If the Quiet Zone Risk Index is greater than the Nationwide Significant Risk Threshold, then select an appropriate SSM for a crossing. Reduce the inflated risk index calculated in Step 4 for that crossing by the effectiveness rate of the chosen SSM. (See appendix A for the effectiveness rates for the various SSMs). Recalculate the Quiet Zone Risk Index by averaging the revised inflated risk index with the inflated risk indices for the other public crossings. If this new Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold, the quiet zone would qualify for public authority designation. If the Quiet Zone Risk Index is still higher than the Nationwide Significant Risk Threshold, treat another public crossing with an appropriate SSM and repeat the process until the Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold. Once this result is obtained, the quiet zone has qualified for the public authority designation method, and Notice of Quiet Zone Establishment must be provided once all the necessary improvements have been installed. With this approach, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk Index. If the Quiet Zone Risk Index for the quiet zone rises above the Nationwide Significant Risk Threshold, FRA will notify the public authority so that appropriate measures can be taken. (See § 222.51(a)).

7. If the public authority wishes to reduce the risk of the quiet zone to the level of risk that would exist if the horn were sounded at every crossing within the quiet zone, the public authority should calculate the initial Quiet Zone Risk Index as in Step 4. The objective is to now reduce the Quiet Zone Risk Index to the level of the Risk Index with Horns by adding SSMs at the crossings. The difference between the Quiet Zone Risk Index and the Risk Index with Horns is the amount of risk that will have to be reduced in order to fully compensate for lack of the train horn. The use of the Quiet Zone Calculator will aid in determining which SSMs may be used to reduce the risk sufficiently. Follow the procedure stated in Step 6, except that the Quiet Zone Risk Index must be equal to, or less than, the Risk Index with Horns instead of the Nationwide Significant Risk Threshold. Once this risk level is attained, the quiet zone has qualified for the public authority designation method, and Notice of Quiet Zone Establishment must be provided once all the necessary improvements have been installed. One important distinction with this option is that the public authority will never need to be concerned with the Nationwide Significant Risk Threshold or the Quiet Zone Risk Index. The rule's intent is to make the quiet zone as safe as if the train horns were sounding. If this is accomplished, the public authority may designate the crossings as a quiet zone and need not be concerned with possible fluctuations in the Nationwide Significant Risk Threshold or annual risk reviews.

#### *C. New Quiet Zones—Public Authority Application to FRA*

A public authority must apply to FRA for approval of a quiet zone under three conditions. First, if any of the SSMs selected for the quiet zone do not fully conform to the design standards set forth in appendix A. These are referred to as modified SSMs in appendix B. Second, when programmed law enforcement, public education and awareness programs, or photo enforcement is used to reduce risk in the quiet zone, these are referred to as non-engineering ASMs in appendix B. It should be remembered that non-engineering ASMs will require periodic monitoring as long as the quiet zone is in existence. Third, when engineering ASMs are used to reduce risk. Please see appendix B for detailed explanations of ASMs and the periodic monitoring of non-engineering ASMs.

The public authority is strongly encouraged to submit the application to FRA for review and comment before the appendix B treatments are initiated. This will enable FRA to provide comments on the proposed ASMs to help guide the application process. If non-engineering ASMs or engineering ASMs are proposed, the public authority also may wish to confirm with FRA that the methodology it plans to use to determine the effectiveness rates of the proposed ASMs is appropriate. A quiet zone that utilizes a combination of SSMs from appendix A and ASMs from appendix B must make a Public Authority Application to FRA. A complete and thoroughly documented application will help to expedite the approval process.

The following discussion is meant to provide guidance on the steps necessary to establish a new quiet zone using the Public Authority Application to FRA method. 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).

1. Gather the information previously mentioned in the section on "Requirements for both Public Authority Designation and Public Authority Application."

2. Calculate the risk index for each public crossing as directed in Step 2—Public Authority Designation.

3. Calculate the Crossing Corridor Risk Index, which is also the Risk Index with Horns, as directed in Step 3—Public Authority Designation.

4. Calculate the initial Quiet Zone Risk Index as directed in Step 4—Public Authority Designation.

5. Begin to reduce the Quiet Zone Risk Index through the use of ASMs and SSMs. Follow the procedure provided in Step 6—Public Authority Designation until the Quiet Zone Risk Index has been reduced to equal to, or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns. (Remember that the public authority may choose which level of risk reduction is the most appropriate for its community.) Effectiveness rates for ASMs should be provided as follows:

a. Modified SSMs—Estimates of effectiveness for modified SSMs may be proposed based upon adjustments from the effectiveness rates provided in appendix A or from actual field data derived from the crossing sites. The application should provide an estimated effectiveness rate and the rationale for the estimate.

b. Non-engineering ASMs—Effectiveness rates are to be calculated in accordance with the provisions of appendix B, paragraph II B.

c. Engineering ASMs—Effectiveness rates are to be calculated in accordance with the provisions of appendix B, paragraph III B.

6. Once it has been determined through analysis that the Quiet Zone Risk Index has been reduced to equal to, or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns, the public authority may make application to FRA for a quiet zone under § 222.39(b). FRA will review the application to determine the appropriateness of the proposed effectiveness rates, and whether or not the proposed application demonstrates that the quiet zone meets the requirements of the rule. When submitting the application to FRA for approval, the application must contain the following (§ 222.39(b)(1)):

a. Sufficient detail concerning the present safety measures at all crossings within the proposed quiet zone. This includes current and accurate crossing inventory forms for each public and private grade crossing.

b. Detailed information on the SSMs or ASMs that are proposed to be implemented and at which public crossings within the proposed quiet zone.

c. Membership and recommendations of the diagnostic team (if any) that reviewed the proposed quiet zone.

d. Statement of efforts taken to work with affected railroads and the State agency

responsible for grade crossing safety, including a list of any objections raised by the railroads or State agency.

e. A commitment to implement the proposed safety measures.

f. Demonstrate through data and analysis that the proposed measures will reduce the Quiet Zone Risk Index to equal, to or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns.

g. A copy of the application must be provided to: all railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator. (§ 222.39(b)(3))

7. Upon receiving written approval from FRA of the quiet zone application, the public authority may then provide the Notice of Quiet Zone Establishment and implement the quiet zone. If the quiet zone is qualified by reducing the Quiet Zone Risk Index to at the least the level of the Nationwide Significant Risk Threshold, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk Index. If the Quiet Zone Risk Index for the quiet zone rises above the Nationwide Significant Risk Threshold, FRA will notify the public authority so that appropriate measures can be taken. (See § 222.51(a))

**Note:** The provisions stated above for crossing closures, grade separations, wayside horns, pre-existing SSMs and pre-existing modified SSMs apply for Public Authority Application to FRA as well.

**Section III—Pre-Rule Quiet Zones**

Pre-Rule Quiet Zones are treated slightly differently from New Quiet Zones in the rule. This is a reflection of the statutory requirement to “take into account the interest of communities that have in effect restrictions on the sounding of a locomotive horn at highway-rail grade crossings \* \* \*.” It also recognizes the historical experience of train horns not being sounded at Pre-Rule Quiet Zones.

*Overview*

Pre-Rule Quiet Zones that are not established by automatic approval (see discussion that follows) must meet the same requirements as New Quiet Zones as provided in § 222.39. In other words, risk must be reduced through the use of SSMs or ASMs so that the Quiet Zone Risk Index for the quiet zone has been reduced to either the risk level which would exist if locomotive horns sounded at all crossings in the quiet zone (*i.e.* the Risk Index with Horns) or to a risk level equal to, or less than, the Nationwide Significant Risk Threshold. Pre-Rule Quiet Zones must meet these requirements by June 24, 2010. (§ 222.41(c)(2)) There are four differences in the requirements between Pre-Rule Quiet Zones and New Quiet Zones that must be noted.

(1) First, since train horns have not been routinely sounded in the Pre-Rule Quiet Zone, it is not necessary to increase the risk indices of the public crossings to reflect the additional risk caused by the lack of a train horn. Since the train horn has already been silenced, the added risk caused by the lack of a horn is reflected in the actual collision history at the crossings. Collision history is an important part in the calculation of the severity risk indices. In other words, the

Quiet Zone Risk Index is calculated by averaging the existing risk index for each public crossing without the need to increase the risk index by 66.8%. For Pre-Rule Quiet Zones, the Crossing Corridor Risk Index and the initial Quiet Zone Risk Index have the same value.

(2) Second, since train horns have been silenced at the crossings, it will be necessary to mathematically determine what the risk level would have been at the crossings if train horns had been routinely sounded. These revised risk levels then will be used to calculate the Risk Index with Horns. This calculation is necessary to determine how much risk must be eliminated in order to compensate for the lack of the train horn. This will allow the public authority to have the choice to reduce the risk to at least the level of the Nationwide Significant Risk Threshold or to fully compensate for the lack of the train horn.

To calculate the Risk Index with Horns, the first step is to divide the existing severity risk index for each crossing by the appropriate value as shown in Table 1. This process eliminates the risk that was caused by the absence of train horns. The table takes into account that the train horn has been found to produce different levels of effectiveness in preventing collisions depending on the type of warning device at the crossing. (Note: FRA’s web based Quiet Zone Calculator will perform this computation automatically for Pre-Rule Quiet Zones.) The Risk Index with Horns is the average of the revised risk indices. The difference between the calculated Risk Index with Horns and the Quiet Zone Risk Index is the amount of risk that would have to be reduced in order to fully compensate for the lack of train horns.

TABLE 1.—RISK INDEX DIVISOR VALUES

	Passive	Flashing lights	Lights and gates
U.S. ....	1.749	1.309	1.668

(3) The third difference is that credit is given for the risk reduction that is brought about through the upgrading of the warning devices at public crossings (§ 222.35(b)(3)). For New Quiet Zones, all crossings must be equipped with automatic warning devices consisting of flashing lights and gates. Crossings without gates must have gates installed. The severity risk index for that crossing is then calculated to establish the risk index that is used in the Risk Index with Horns. The Risk Index with Horns is then increased by 66.8% to adjust for the lack of the train horn. The adjusted figure is the initial Quiet Zone Risk Index. There is no credit received for the risk reduction that is attributable to warning device upgrades in New Quiet Zones.

For Pre-Rule Quiet Zones, the Risk Index with Horns is calculated from the initial risk indices which use the warning devices that are currently installed. If a public authority elects to upgrade an existing warning device as part of its quiet zone plan, the accident

prediction value for that crossing will be recalculated based on the upgraded warning device. (Once again, FRA’s web-based Quiet Zone Calculator can do the actual computation.) The new accident prediction value is then used in the severity risk index formula to determine the risk index for the crossing. This adjusted risk index is then used to compute the new Quiet Zone Risk Index. This computation allows the risk reduction attributed to the warning device upgrades to be used in establishing a quiet zone.

(4) The fourth difference is that Pre-Rule Quiet Zones have different minimum requirements under § 222.35. A Pre-Rule Quiet Zone may be less than one-half mile in length if that was its length as of October 9, 1996 (§ 222.35(a)(2)). A Pre-Rule Quiet Zone does not have to have automatic warning devices consisting of flashing lights and gates at every public crossing (§ 222.35(b)(3)). The existing crossing safety warning systems in place as of December 18, 2003 may be

retained but cannot be downgraded. It also is not necessary for the automatic warning devices to be equipped with constant warning time devices or power out indicators; however, when the warning devices are upgraded, constant warning time and power out indicators will be required if reasonably practical (§ 222.35(b)(3)). Advance warning signs that notify the motorist that train horns are not sounded and STOP signs and crossbucks at private crossings do not have to be installed until June 24, 2008, which allows three years to install the required signage (§§ 222.35(c)(3) and 222.35(c)(4)).

**A. Requirements for Both Public Authority Designation and Public Authority Application—Pre-Rule Quiet Zones**

The following is necessary when establishing a Pre-Rule Quiet Zone. This information pertains to Automatic Approval, the Public Authority Designation and Public Authority Application to FRA methods.

1. Determine all public, private and pedestrian 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 U.S. DOT Crossing Inventory number and street name. If a crossing does not have a U.S. DOT crossing number, then contact FRA for assistance.

2. Document the length of the quiet zone. It is not necessary that the quiet zone be at least one-half mile in length. Pre-Rule Quiet Zones may be shorter than one-half mile. However, the addition of a new crossing that is not a part of an existing Pre-Rule Quiet Zone to a quiet zone nullifies its pre-rule status, and the resulting New Quiet Zone must be at least one-half mile. The deletion of a crossing from a Pre-Rule Quiet Zone (except through closure or grade separation) must result in a quiet zone that is at least one half mile in length. It is the intent of the rule to allow adjacent Pre-Rule Quiet Zones to be combined into one large pre-rule quiet zone if the respective public authorities desire to do so.

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

4. Pre-Rule Quiet Zones must retain, and may upgrade, the existing grade crossing safety warning systems. Unlike New Quiet Zones, it is not necessary that every public crossing within a Pre-Rule Quiet Zone be equipped with active warning devices comprising both flashing lights and gates. Existing warning devices need not be equipped with power out indicators and constant warning time circuitry. If warning devices are upgraded to flashing lights, or flashing lights and gates, the upgraded equipment must include, as is required for New Quiet Zones, power out indicators and constant warning time devices (if reasonably practical).

5. By June 24, 2008, private crossings must have cross-bucks and "STOP" signs on both approaches to the crossing.

6. By June 24, 2008, pedestrian crossings must be equipped with signs that conform to the MUTCD that advise pedestrians that train horns are not sounded at the crossing.

7. By June 24, 2008, 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.

8. It will be necessary for the public authority to provide a Notice of Quiet Zone Continuation in order for the railroads not to start sounding train horns when the rule becomes effective. A detailed discussion of the requirements of § 222.43(c) is provided in Section IV of this appendix. The Notice of Quiet Zone Continuation must be provided to the appropriate parties by all Pre-Rule Quiet Zones that have not established quiet zones by automatic approval. This should be done

no later than June 3, 2005 to ensure that train horns will not start being sounded on June 24, 2005. A Pre-Rule Quiet Zone may provide a Notice of Quiet Zone Continuation before it has determined whether or not it qualifies for automatic approval. Once it has been determined that the Pre-Rule Quiet Zone will be established by automatic approval, the Public Authority must provide the Notice of Quiet Zone Establishment. This must be accomplished no later than December 24, 2005. If the Pre-Rule Quiet Zone does not qualify for automatic approval, the Notice of Quiet Zone Continuation will enable the train horns to be silenced until the quiet zone is established in accordance with the rule.

#### B. Pre-Rule Quiet Zones—Automatic Approval

In order for a Pre-Rule Quiet Zone to be established under this rule (§ 222.41(a)), one of the following conditions must be met:

- One or more SSMs as identified in appendix A are installed at each public crossing in the quiet zone; or
- The Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold; or
- The Quiet Zone Risk Index is above the Nationwide Significant Risk Threshold but less than twice the Nationwide Significant Risk Threshold and there have been no relevant collisions at any public grade crossing within the quiet zone for the preceding five years; or
- The Quiet Zone Risk Index is equal to, or less than, the Risk Index With Horns.

Additionally, the Pre-Rule Quiet Zone must be in compliance with the minimum requirements for quiet zones (§ 222.35) and the notification requirements in § 222.43.

The following discussion is meant to provide guidance on the steps necessary to determine if a Pre-Rule Quiet Zone qualifies for automatic approval.

1. All of the items listed in *Requirements for Both Public Authority Designation and Public Authority Application—Pre-Rule Quiet Zones* previously mentioned are to be accomplished. Remember that a Pre-Rule Quiet Zone may be less than one-half mile in length if that was its length as of October 9, 1996. Also, a Pre-Rule Quiet Zone does not have to have automatic warning devices consisting of flashing lights and gates at every public crossing.

2. If one or more SSMs as identified in appendix A are installed at each public crossing in the quiet zone, the quiet zone qualifies and notification should take place. If the Pre-Rule Quiet Zone does not qualify by this step, proceed on to the next step.

3. Calculate the risk index for each public crossing within the quiet zone (See appendix D.) Be sure that the risk index is calculated using the formula appropriate for the type of warning device that is actually installed at the crossing. Unlike New Quiet Zones, it is not necessary to calculate the risk index using flashing lights and gates as the warning device at every public crossing. (FRA's web-based Quiet Zone Calculator may be used to simplify the calculation process). 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.

4. The Quiet Zone Risk Index is then calculated by averaging the risk index for each public crossing within the proposed quiet zone. (Note: The initial Quiet Zone Risk Index and the Crossing Corridor Risk Index are the same for Pre-Rule Quiet Zones.)

5. Compare the Quiet Zone Risk Index to the Nationwide Significant Risk Threshold. If the Quiet Zone Risk Index is equal to, or less than, the Nationwide Significant Risk Threshold, then the quiet zone qualifies for automatic approval, and the public authority may provide the Notice of Quiet Zone Establishment. With this approach, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk. If the Quiet Zone Risk Index for the quiet zone is found to be above the Nationwide Significant Risk Threshold, FRA will notify the public authority so that appropriate measures can be taken (See § 222.51(b)). If the Pre-Rule Quiet Zone is not established by this step, proceed on to the next step.

6. If the Quiet Zone Risk Index is above the Nationwide Significant Risk Threshold, but less than twice the Nationwide Significant Risk Threshold and there have been no relevant collisions at any public grade crossing within the quiet zone for the preceding five years, then the quiet zone qualifies for automatic approval and the public authority may provide the Notice of Quiet Zone Establishment. (Note: A relevant collision means a collision at a highway-rail grade crossing between a train and a motor vehicle, excluding the following: a collision resulting from an activation failure of an active grade crossing warning system; a collision in which there is no driver in the motor vehicle; or a collision where the highway vehicle struck the side of the train beyond the fourth locomotive unit or rail car.) With this approach, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk. If the Quiet Zone Risk Index for the quiet zone is above two times the Nationwide Significant Risk Threshold, or a relevant collision has occurred during the preceding year, FRA will notify the public authority so that appropriate measures can be taken (See § 222.51(b)).

7. If the Pre-Rule Quiet Zone is not established by automatic approval, continuation of the quiet zone will require implementation of SSMs or ASMs to reduce the Quiet Zone Risk Index for the quiet zone to a risk level equal to, or below, either the risk level which would exist if locomotive horns sounded at all crossings in the quiet zone (*i.e.* the Risk Index with Horns) or the Nationwide Significant Risk Threshold. This is the same methodology used to create New Quiet Zones with the exception of the four differences previously noted. A review of the previous discussion on the two methods used to establish quiet zones may prove helpful in determining which would be the most beneficial to use for a particular Pre-Rule Quiet Zone.

#### C. Pre-Rule Quiet Zones—Public Authority Designation

The following discussion is meant to provide guidance on the steps necessary to

establish a Pre-Rule Quiet Zone using the Public Authority Designation method.

1. The public authority must provide a written Notice of Detailed Plan (§§ 222.43(a)(3) and 222.43(d)) to the railroads that operate over the proposed quiet zone, the State agency responsible for highway and road safety and the State agency responsible for grade crossing safety. This notice must be given at least four months before the filing of the detailed plan with FRA as required in § 222.41(c)(2). The purpose of this Notice of Detailed Plan is to provide an opportunity for the railroads and the State agencies to provide comments and recommendations to the public authority as it is planning the quiet zone. They will have 60 days to provide these comments to the public authority. The quiet zone cannot be created unless the Notice of Detailed Plan has been provided. FRA encourages public authorities to provide the required Notice of Detailed Plan early in the quiet zone development process. The railroads and State agencies can provide an expertise that very well may not be present within the public authority. FRA believes that it will be very useful to include these organizations in the planning process. For example, including them in the inspections of the crossing will help ensure accurate Inventory information for the crossings. Note: Please see Section IV for details on the requirements of a Notice of Detailed Plan.

2. All of the items listed in "Requirements for both Public Authority Designation and Public Authority Application—Pre-Rule Quiet Zones" previously mentioned are to be accomplished. Remember that a Pre-Rule Quiet Zone may be less than one-half mile in length if that was its length as of October 9, 1996. Also, a Pre-Rule Quiet Zone does not have to have automatic warning devices consisting of flashing lights and gates at every public crossing.

3. Calculate the risk index for each public crossing within the quiet zone as in Step 3—Pre-Rule Quiet Zones—Automatic Approval.

4. 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 not being sounded for crossings, this value is actually the initial Quiet Zone Risk Index.

5. Calculate Risk Index with Horns by the following:

a. For each public crossing, divide the risk index that was calculated in Step 2 by the appropriate value in Table 1. This produces the risk index that would have existed had the train horn been sounded.

b. Average these reduced risk indices together. The resulting average is the Risk Index with Horns.

6. Begin to reduce the Quiet Zone Risk Index through the use of SSMs or by upgrading existing warning devices. Follow the procedure provided in Step 6—Public Authority Designation until the Quiet Zone Risk Index has been reduced to a level equal to, or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns. A public authority may elect to upgrade an existing warning device as part of its Pre-Rule Quiet Zone plan. When upgrading a warning device, the accident

prediction value for that crossing must be recalculated for the new warning device. Determine the new risk index for the upgraded crossing by using the new accident prediction value in the severity risk index formula. This new risk index is then used to compute the new Quiet Zone Risk Index. (Remember that FRA's web-based Quiet zone Calculator will be able to do the actual computations.) Once the Quiet Zone Risk Index has been reduced to equal to, or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns, the quiet zone has qualified for the Public Authority Designation method, and the public authority may provide the Notice of Quiet Zone Establishment once all the necessary improvements have been installed. If the quiet zone is established by reducing the Quiet Zone Risk Index to a risk level equal to, or less than, the Nationwide Significant Risk Threshold, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk Index. If the Quiet Zone Risk Index for the quiet zone rises above the Nationwide Significant Risk Threshold, FRA will notify the public authority so that appropriate measures can be taken (See § 222.51(b)).

**Note:** The provisions stated above for crossing closures, grade separations, wayside horns, pre-existing SSMs and pre-existing modified SSMs apply for Public Authority Application to FRA as well.

#### D. Pre-Rule Quiet Zones—Public Authority Application to FRA

The following discussion is meant to provide guidance on the steps necessary to establish a Pre-Rule Quiet zone using the Public Authority Application to FRA method.

1. The public authority must provide a written Notice of Detailed Plan (§§ 222.43(a)(3) and 222.43(d)) to the railroads that operate over the proposed quiet zone, the State agency responsible for highway and road safety and the State agency responsible for grade crossing safety. This notice must be given at least four months before the filing of the detailed plan with FRA as required in § 222.41(c)(2). The purpose of this Notice of Detailed Plan is to provide an opportunity for the railroads and the State agencies to provide comments and recommendations to the public authority as it is planning the quiet zone. They will have 60 days to provide these comments to the public authority. The quiet zone cannot be created unless the Notice of Detailed Plan has been provided. FRA encourages public authorities to provide the required Notice of Detailed Plan early in the quiet zone development process. The railroads and State agencies can provide an expertise that very well may not be present within the public authority. FRA believes that it will be very useful to include these organizations in the planning process. For example, including them in the inspections of the crossing will help ensure accurate Inventory information for the crossings. Note: Please see Section IV for details on the requirements of a Notice of Detailed Plan.

2. All of the items listed in "Requirements for both Public Authority Designation and

Public Authority Application—Pre-Rule Quiet Zones" previously mentioned are to be accomplished. Remember that a Pre-Rule Quiet Zone may be less than one-half mile in length if that was its length as of October 9, 1996. Also, a Pre-Rule Quiet Zone does not have to have automatic warning devices consisting of flashing lights and gates at every public crossing.

3. 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 simplify the calculation process). 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.

4. 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 not being sounded for crossings, this value is actually the initial Quiet Zone Risk Index.

5. Calculate Risk Index with Horns by the following:

a. For each public crossing, divide its risk index that was calculated in Step 2 by the appropriate value in Table 1. This produces the risk index that would have existed had the train horn been sounded.

b. Average these reduced risk indices together. The resulting average is the Risk Index with Horns.

6. Begin to reduce the Quiet Zone Risk Index through the use of ASMs and/or SSMs. Follow the procedure provided in Step 6—New Quiet Zones Public Authority Designation—until the Quiet Zone Risk Index has been reduced to a level equal to, or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns. A public authority may elect to upgrade an existing warning device as part of its Pre-Rule Quiet Zone plan. When upgrading a warning device, the accident prediction value for that crossing must be re-calculated for the new warning device. Determine the new risk index for the upgraded crossing by using the new accident prediction value in the severity risk index formula. (Remember that FRA's web-based quiet zone risk calculator will be able to do the actual computations.) This new risk index is then used to compute the new Quiet Zone Risk Index. Effectiveness rates for ASMs should be provided as follows:

a. Modified SSMs—Estimates of effectiveness for modified SSMs may be proposed based upon adjustments from the benchmark levels provided in appendix A or from actual field data derived from the crossing sites. The application should provide an estimated effectiveness rate and the rationale for the estimate.

b. Non-engineering ASMs—Effectiveness rates are to be calculated in accordance with the provisions of appendix B, section II B.

c. Engineering ASMs—Effectiveness rates are to be calculated in accordance with the provisions of appendix B, section III B.

7. Once it has been determined through analysis that the Quiet Zone Risk Index has been reduced to a level equal to, or less than, either the Nationwide Significant Risk Threshold or the Risk Index with Horns, the public authority may make application to

FRA for a quiet zone under § 222.39(b). FRA will review the application to determine the appropriateness of the proposed effectiveness rates, and whether or not the proposed application demonstrates that the quiet zone meets the requirements of the rule. When submitting the application to FRA for approval, it should be remembered that the application must contain the following (§ 222.39(b)(1)):

a. Sufficient detail concerning the present safety measures at all crossings within the proposed quiet zone. This includes current and accurate crossing inventory forms for each public and private grade crossing.

b. Detailed information on the SSMs, ASMs, or upgraded warning devices that are proposed to be implemented and at which public crossings within the proposed quiet zone.

c. Membership and recommendations of the diagnostic team (if any) that reviewed the proposed quiet zone.

d. Statement of efforts taken to work with affected railroads and the State agency responsible for grade crossing safety, including a list of any objections raised by the railroads or State agency.

e. A commitment to implement the proposed safety measures.

f. Demonstrate through data and analysis that the proposed measures will reduce the Quiet Zone Risk Index to, or below, either the Nationwide Significant Risk Threshold or the Risk Index with Horns.

g. A copy of the application must be provided to all railroads operating over the public highway-rail grade crossings within the quiet zone; the highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone; the landowner having control over any private crossings within the quiet zone; the State agency responsible for highway and road safety; the State agency responsible for grade crossing safety; and the Associate Administrator. (§ 222.39(b)(3))

8. Upon receiving written approval from FRA of the quiet zone application, the public authority may then provide the Notice of Quiet Zone Establishment and implement the quiet zone. If the quiet zone is established by reducing the Quiet Zone Risk Index to a level equal to, or less than, the Nationwide Significant Risk Threshold, FRA will annually recalculate the Nationwide Significant Risk Threshold and the Quiet Zone Risk. If the Quiet Zone Risk Index for the quiet zone is above the Nationwide Significant Risk Threshold, FRA will notify the public authority so that appropriate measures can be taken (*See* § 222.51(b)).

**Note:** The provisions stated above for crossing closures, grade separations, wayside horns, pre-existing SSMs and pre-existing modified SSMs apply for Public Authority Application to FRA as well.

#### Section IV—Required Notifications

##### A. Introduction

The public authority is responsible for providing notification to parties that will be affected by the quiet zone. There are several different types of notifications and a public

authority may have to make more than one notification during the entire process of complying with the regulation. The notification process is to ensure that interested parties are made aware in a timely manner of the establishment or continuation of quiet zones. It will also provide an opportunity for State agencies and affected railroads to provide input to the public authority during the development of quiet zones. Specific information is to be provided so that the crossings in the quiet zone can be identified. Providing the appropriate notification is important because once the rule becomes effective, railroads will be obligated to sound train horns when approaching all public crossings unless notified in accordance with the rule that a New Quiet Zone has been established or that a Pre-Rule or Intermediate Quiet Zone is being continued.

##### B. Notice of Intent—§ 222.43(b)

The purpose of the Notice of Intent is to provide notice to the railroads and State agencies that the public authority is planning on creating a New Quiet Zone and to provide an opportunity for the railroad and the state agencies to give input to the public authority during the quiet zone development process. (**Note:** This includes Intermediate and Intermediate Partial Quiet Zones that must qualify as New Quiet Zones in order to keep the train horn silenced as of June 24, 2006.) The State agencies and railroads will be given sixty days to provide information and comments to the public agency. Each public authority that is creating a New Quiet Zone must provide written notice, by certified mail, return receipt requested, to the following:

1. All railroads operating within the proposed quiet zone.
2. State agency responsible for highway and road safety.
3. State agency responsible for grade crossing safety.

The Notice of Intent must contain the following information:

1. A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossings within the proposed quiet zone. The crossings are to be identified by both the U.S. DOT Crossing Inventory Number and the street or highway name.
2. A statement of the time period within which the restrictions would be in effect on the routine sounding of train horns (*i.e.*, 24 hours or from 10 p.m. to 7 a.m.).
3. A brief explanation of the public authority's tentative plans for implementing improvements within the proposed quiet zone.
4. The name and title of the person who will act as the point of contact during the quiet zone development process and how that person can be contacted.
5. A list of the names and addresses of each party that will receive a copy of the Notice of Intent.

The parties that receive the Notice of Intent will be able to submit information or comments to the public authority for 60 days. The public authority will not be able to establish the quiet zone during the 60 day comment period unless each railroad and

State agency that receives the Notice of Intent provides either written comments to the public authority or a written statement waiving its right to provide comments on the Notice of Intent. The public authority must provide an affirmation in the Notice of Quiet Zone Establishment that each of the required parties was provided the Notice of Intent and the date it was mailed. If the quiet zone is being established within 60 days of the mailing of the Notice of Intent, the public authority also must affirm each of the parties have provided written comments or waived its right to provide comments on the Notice of Quiet Zone Establishment.

##### C. Notice of Quiet Zone Continuation—§ 222.43(c)

The purpose of the Notice of Quiet Zone Continuation is to provide a means for the public authority to formally advise affected parties that an existing quiet zone is being continued after the effective date of the rule. All Pre-Rule, Pre-Rule Partial, Intermediate and Intermediate Partial Quiet Zones must provide this Notice of Quiet Zone Continuation no later than June 3, 2005 to ensure that train horns are not sounded at public crossings when the rule becomes effective on June 24, 2005. This will enable railroads to properly comply with the requirements of the Final Rule.

Each public authority that is continuing an existing Pre-Rule, Pre-Rule Partial, Intermediate and Intermediate Partial Quiet Zone must provide written notice, by certified mail, return receipt requested, to the following:

1. All railroads operating over the public highway-rail grade crossings within the quiet zone.
2. The highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone.
3. The landowner having control over any private crossings within the quiet zone.
4. The State agency responsible for highway and road safety.
5. The State agency responsible for grade crossing safety.
6. The Associate Administrator.

The Notice of Quiet Zone Continuation must contain the following information:

1. A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.
2. A specific reference to the regulatory provision that provides the basis for quiet zone continuation, citing as appropriate, § 222.41 or 222.42.
3. A statement of the time period within which restrictions on the routine sounding of the locomotive horn will be imposed (*i.e.*, 24 hours or nighttime hours only.)
4. An accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects conditions currently existing at the crossing.
5. The name and title of the person responsible for monitoring compliance with



the requirements of this part and the manner in which that person can be contacted.

6. A list of the names and addresses of each party that will receive the Notice of Quiet Zone Continuation.

7. A statement signed by the chief executive officer of each public authority participating in the continuation of the quiet zone, in which the chief executive officer certifies that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

Public authorities should remember that this notice is required to ensure that train horns will remain silent. Even if a public authority has not been able to determine whether its Pre-Rule or Pre-Rule Partial Quiet Zone qualifies for automatic approval under the rule, it should issue a Notice of Quiet Zone Continuation to keep the train horns silent after the effective date of the rule.

#### D. Notice of Detailed Plan—§ 222.43(d)

The purpose of the Notice of Detailed Plan is to provide notice to the railroads and State agencies that the public authority is planning on filing a detailed plan for a Pre-Rule or Pre-Rule Partial Quiet Zone that was not established by automatic approval under § 222.41. The public authority is required to provide to FRA a detailed plan on how the quiet zone will be brought into compliance with the rule. The Notice of Detailed Plan will provide an opportunity for the railroad and the state agencies to give input to the public authority during the quiet zone development process. The Notice of Detailed Plan must be provided at least four months before the public authority submits its detailed plan to FRA. The State agencies and railroads will be given 60 days to provide information and comments to the public agency.

Each public authority that is required to provide FRA with a detailed plan must provide written notice, by certified mail, return receipt requested, to the following:

1. All railroads operating within the quiet zone.
2. State agency responsible for highway and road safety.
3. State agency responsible for grade crossing safety.

The Notice of Detailed Plan must contain the following information:

1. A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone. The crossings are to be identified by both the U.S. DOT Crossing Inventory Number and the street or highway name.
2. A statement of the time period within which the restrictions would be in effect on the routine sounding of train horns (*i.e.*, 24 hours or nighttime hours only).
3. A brief explanation of the public authority's tentative plans for implementing improvements within the proposed quiet zone.
4. The name and title of the person who will act as the point of contact during the quiet zone development process and how that person can be contacted.
5. A list of the names and addresses of each party that will receive a copy of the Notice of Detailed Plan.

The parties that receive the Notice of Detailed Plan will be able to submit information or comments to the public authority for 60 days. The public authority must provide an affirmation that each of the parties has provided been provided the Notice of Detailed Plan and provide the date that the notice was mailed.

#### E. Notice of Quiet Zone Establishment—§ 222.43(e)

The purpose of the Notice of Quiet Zone Establishment is to provide a means for the public authority to formally advise affected parties that a quiet zone is being established. Notice of Quiet Zone Establishment must be provided under the following circumstances:

1. A New Quiet Zone or New Partial Quiet Zone is being created.
2. A Pre-Rule Quiet Zone or a Pre-Rule Partial Quiet Zone that qualifies for automatic approval under the rule is being established.
3. An Intermediate Quiet Zone or Intermediate Partial Quiet Zone that is creating a New Quiet Zone under the rule. Please note that these quiet zones must be brought into compliance with the rule by June 24, 2006.
4. A Pre-Rule Quiet Zone or a Pre-Rule Partial Quiet Zone that was not established by automatic approval and has since implemented improvements to establish a quiet zone in accordance to the rule.

Each public authority that is establishing a quiet zone under the above circumstances must provide written notice, by certified mail, return receipt requested, to the following:

1. All railroads operating over the public highway-rail grade crossings within the quiet zone.
2. The highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone.
3. The landowner having control over any private crossings within the quiet zone.
4. The State agency responsible for highway and road safety.
5. The State agency responsible for grade crossing safety.
6. The Associate Administrator.

The Notice of Quiet Establishment must contain the following information:

1. A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.
2. A specific reference to the regulatory provision that provides the basis for quiet zone establishment, citing as appropriate, § 222.39(a)(1), 222.39(a)(2)(i), 222.39(a)(2)(ii), 222.39(a)(3), 222.39(b), 222.41(a)(1)(i), 222.41(a)(1)(ii), 222.41(a)(1)(iii), 222.41(a)(1)(iv), 222.41(b)(1)(i), 222.41(b)(1)(ii), 222.41(b)(1)(iii), or 222.41(b)(1)(iv).

(a) If the Notice of Quiet Establishment contains a specific reference to § 222.39(a)(2)(i), 222.39(a)(2)(ii), 222.39(a)(3), 222.41(a)(1)(ii), 222.41(a)(1)(iii), 222.41(a)(1)(iv), 222.41(b)(1)(ii), 222.41(b)(1)(iii), or 222.41(b)(1)(iv), it shall

include a copy of the FRA web page that contains the quiet zone data upon which the public authority is relying.

(b) If the Notice of Quiet Establishment contains a specific reference to § 222.39(b), it shall include a copy of FRA's notification of approval.

3. If a diagnostic team review was required under § 222.25 (private crossings) or § 222.27 (pedestrian crossings), the Notice of Quiet Establishment shall include a statement affirming that the State agency responsible for grade crossing safety and all affected railroads were provided an opportunity to participate in the diagnostic team review. The Notice of Quiet Establishment shall also include a list of recommendations made by the diagnostic team.

4. A statement of the time period within which restrictions on the routine sounding of the locomotive horn will be imposed (*i.e.*, 24 hours or from 10 p.m. until 7 a.m.).

5. An accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects the conditions existing at the crossing before any new SSMs or ASMs were implemented.

6. An accurate, complete and current Grade Crossing Inventory Form for each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the quiet zone that reflects SSMs and ASMs in place upon establishment of the quiet zone. SSMs and ASMs that cannot be fully described on the Inventory Form shall be separately described.

7. If the public authority was required to provide a Notice of Intent:

(a) The Notice of Quiet Zone Establishment shall contain a statement affirming that the Notice of Intent was provided in accordance with the rule. This statement shall also state the date on which the Notice of Intent was mailed.

(b) If the Notice of Quiet Zone Establishment will be mailed less than 60 days after the date on which the Notice of Intent was mailed, the Notice of Quiet Zone Establishment shall also contain a written statement affirming that comments and/or written waiver statements have been received from each railroad operating over public grade crossings within the proposed quiet zone, the State agency responsible for grade crossing safety, and the State agency responsible for highway and road safety.

8. If the public authority was required to provide a Notice of Detailed Plan, the Notice of Quiet Zone Establishment shall contain a statement affirming that the Notice of Detailed Plan was provided and the date on which the Notice of Detailed Plan was mailed.

9. The name and title of the person responsible for monitoring compliance with the requirements of this part and the manner in which that person can be contacted.

10. A list of the names and addresses of each party that is receiving a copy of the Notice of Quiet Establishment.

11. A statement signed by the chief executive officer of each public authority participating in the establishment of the quiet zone, in which the chief executive officer

shall certify that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

**Section V—Examples of Quiet Zone Implementations**

*Example 1—New Quiet Zone*

(a) A public authority wishes to create a New Quiet Zone over four public crossings. All of the crossings are equipped with flashing lights and gates, and the length of the quiet zone is 0.75 mile. There are no private crossings within the proposed zone.

(b) The tables that follow show the street name in the first column, and the existing risk index for each crossing with the horn

sounding (“Crossing Risk Index w/Horns”) in the second. The third column, “Crossing Risk Index w/o Horns,” is the risk index for each crossing after it has been inflated by 66.8% to account for the lack of train horns. The fourth column, “SSM Eff,” is the effectiveness of the SSM at the crossing. A zero indicates that no SSM has been applied. The last column, “Crossing Risk Index w/o Horns Plus SSM,” is the inflated risk index for the crossing after being reduced by the implementation of the SSM. At the bottom of the table are two values. The first is the Risk Index with Horns (“RIWH”) which represents the average initial amount of risk in the proposed quiet zone with the train horn sounding. The second is the Quiet Zone Risk Index (“QZRI”), which is the average

risk in the proposed quiet zone taking into consideration the increased risk caused by the lack of train horns and the reductions in risk attributable to the installation of SSMs. For this example, it is assumed that the Nationwide Significant Risk Threshold is 17,030. In order for the proposed quiet zone to qualify under the rule, the Quiet Zone Risk Index must be reduced to a level at, or below, the Nationwide Significant Risk Threshold (17,030) or the Risk Index with Horns.

(c) Table 2 shows the existing conditions in the proposed quiet zone. SSMs have not yet been installed. The Risk Index with Horns for the proposed quiet zone is 11,250. The Quiet Zone Risk Index without any SSMs is 18,765.

**TABLE 2**

Street	Crossing risk index w/horns	Crossing risk index w/o horns	SSM EFF	Crossing risk index w/o horns plus SSM
A .....	12000	20016	0	20016
B .....	10000	16680	0	16680
C .....	8000	13344	0	13344
D .....	15000	25020	0	25020
	RIWH 11250			QZRI 18765

(d) The public authority decides to install traffic channelization devices at D Street. Reducing the risk at the crossing that has the highest severity risk index will provide the greatest reduction in risk. The effectiveness

of traffic channelization devices is 0.75. Table 3 shows the changes in the proposed quiet zone corridor that would occur when traffic channelization devices are installed at D Street. The Quiet Zone Risk Index has been

reduced to 14,073.75. This reduction in risk would qualify the quiet zone as the risk has been reduced lower than the Nationwide Significant Risk Threshold which is 17,030.

**TABLE 3**

Street	Crossing risk index w/horns	Crossing risk index w/o horns	SSM EFF	Crossing risk index w/o horns plus SSM
A .....	12000	20016	0	20016
B .....	10000	16680	0	16680
C .....	8000	13344	0	13344
D .....	15000	25020	0.75	6255
	RIWH 11250			QZRI 14073.75

(e) The public authority realizes that reducing the Quiet Zone Risk Index to a level below the Nationwide Significant Risk Threshold will result in an annual recalculation of the Quiet Zone Risk Index and comparison to the Nationwide Significant Risk Threshold. As the Quiet Zone Risk Index is close to the Nationwide Significant

Risk Threshold (14,074 to 17,030), there is a reasonable chance that the Quiet Zone Risk Index may some day exceed the Nationwide Significant Risk Threshold. This would result in the quiet zone no longer being qualified and additional steps would have to be taken to keep the quiet zone. Therefore, the public authority decides to reduce the risk further

by the use of traffic channelization devices at A Street. Table 4 shows the results of this change. The Quiet Zone Risk Index is now 10,320.75 which is less than the Risk Index with Horns of 11,250. The quiet zone now qualifies by fully compensating for the loss of train horns and will not have to undergo annual reviews of the Quiet Zone Risk Index.

**TABLE 4**

Street	Crossing risk index w/horns	Crossing risk index w/o horns	SSM EFF	Crossing risk index w/o horns plus SSM
A .....	12000	20016	0.75	5004
B .....	10000	16680	0	16680
C .....	8000	13344	0	13344
D .....	15000	25020	0.75	6255
	RIWH 11250			QZRI 10320.75

*Example 2—Pre-Rule Quiet Zone*

(a) A public authority wishes to qualify a Pre-Rule Quiet Zone which did not meet the requirements for Automatic Approval because the Quiet Zone Risk Index is greater than twice the Nationwide Significant Risk Threshold. There are four public crossings in the Pre-Rule Quiet Zone. Three of the crossings are equipped with flashing lights and gates, and the fourth (Z Street) is passively signed with a STOP sign. The length of the quiet zone is 0.6 mile, and there are no private crossings within the proposed zone.

(b) The tables that follow are very similar to the tables in Example 1. The street name is shown in the first column, and the existing risk index for each crossing (“Crossing Risk Index w/o Horns”) in the second. This is a change from the first example because the risk is calculated without train horns sounding because of the existing ban on whistles. The third column, “Crossing Risk

Index w/Horns”, is the risk index for each crossing after it has been adjusted to reflect what the risk would have been had train horns been sounding. This is mathematically done by dividing the existing risk index for the three gated crossing by 1.668. The risk at the passive crossing at Z Street is divided by 1.749. (See the above discussion in “Pre-Rule Quiet Zones—Establishment Overview” for more information.) The fourth column, “SSM Eff”, is the effectiveness of the SSM at the crossing. A zero indicates that no SSM has been applied. The last column, “Crossing Risk Index w/o Horns Plus SSM”, is the risk index without horns for the crossing after being reduced for the implementation of the SSM. At the bottom of the table are two values. The first is the Risk Index with Horns (RIWH), which represents the average initial amount of risk in the proposed quiet zone with the train horn sounding. The second is the Quiet Zone Risk Index (“QZRI”), which is the average risk in the proposed quiet zone

taking into consideration the increased risk caused by the lack of train horns and reductions in risk attributable to the installation of SSMs. Once again it is assumed that the Nationwide Significant Risk Threshold is 17,030. The Quiet Zone Risk Index must be reduced to either the Nationwide Significant Risk Threshold (17,030) or to the Risk Index with Horns in order to qualify under the rule.

(c) Table 5 shows the existing conditions in the proposed quiet zone. SSMs have not yet been installed. The Risk Index with Horns for the proposed quiet zone is 18,705.83. The Quiet Zone Risk Index without any SSMs is 31,375. Since the Nationwide Significant Risk Threshold is less than the calculated Risk Index with Horns, the public authority’s goal will be to reduce the risk to at least value of the Risk Index with Horns. This will qualify the Pre-Rule Quiet Zone under the rule.

TABLE 5

Street	Crossing risk index w/o horns	Crossing risk index w/horns	SSM EFF	Crossing risk index w/o horns plus SSM
W .....	35000	20983.21	0	35000
X .....	42000	25179.86	0	42000
Y .....	33500	20083.93	0	33500
Z .....	15000	8576.33	0	15000
	RIWH 18705.83			QZRI 31375

(d) The Z Street crossing is scheduled to have flashing lights and gates installed as part of the state’s highway-rail grade crossing safety improvement plan (Section 130). While this upgrade is not directly a part of the plan to authorize a quiet zone, the public

authority may take credit for the risk reduction achieved by the improvement from a passive STOP sign crossing to a crossing equipped with flashing lights and gates. Unlike New Quiet Zones, upgrades to warning devices in Pre-Rule Quiet Zones do

contribute to the risk reduction necessary to qualify under the rule. Table 6 shows the quiet zone corridor after including the warning device upgrade at Z Street. The Quiet Zone Risk Index has been reduced to 29,500.

TABLE 6

Street	Crossing risk index w/o horns	Crossing risk index w/horns	SSM EFF	Crossing risk index w/o horns plus SSM
W .....	35000	20983.21	0	35000
X .....	42000	25179.86	0	42000
Y .....	33500	20083.93	0	33500
Z .....	7500	8576.33	0	7500
	RIWH 18705.83			QZRI 29500

(e) The public authority elects to install four-quadrant gates without vehicle presence

detection at X Street. As shown in Table 7, this reduces the Quiet Zone Risk Index to

20,890. This risk reduction is not sufficient to qualify as quiet zone under the rule.

TABLE 7

Street	Crossing risk index w/o horns	Crossing risk index w/horns	SSM EFF	Crossing risk index w/o horns plus SSM
W .....	35000	20983.21	0	35000
X .....	42000	25179.86	0.82	7560
Y .....	33500	20083.93	0	33500
Z .....	7500	8576.33	0	7500
	RIWH 18705.83			QZRI 20890

(f) The public authority next decides to use traffic channelization devices at W Street. Table 8 shows that the Quiet Zone Risk Index

is now reduced to 14,327.5. This risk reduction fully compensates for the loss of the train horn as it is less than the Risk Index

with Horns. The quiet zone is qualified under the rule.

TABLE 8

Street	Crossing risk index w/o horns	Crossing risk index w/horns	SSM EFF	Crossing risk index w/o horns plus SSM
W .....	35000	20983.21	0.75	8750
X .....	42000	25179.86	0.82	7560
Y .....	33500	20083.93	0	33500
Z .....	7500	8576.33	0	7500
	RIWH 18705.83			QZRI 14327.5

**Appendix D to Part 222 “Determining Risk Levels**

**Introduction**

The Nationwide Significant Risk Threshold, the Crossing Corridor Risk Index, and the Quiet Zone Risk Index are all measures of collision risk at public highway-rail grade crossings that are weighted by the severity of the associated casualties. Each crossing can be assigned a risk index.

(a) The *Nationwide Significant Risk Threshold* represents the average severity weighted collision risk for all public highway-rail grade crossings equipped with lights and gates nationwide where train horns are routinely sounded. FRA developed this index to serve as a threshold of permissible risk for quiet zones established under this rule.

(b) The *Crossing Corridor Risk Index* represents the average severity weighted collision risk for all public highway-rail grade crossings along a defined rail corridor.

(c) The *Quiet Zone Risk Index* represents the average severity weighted collision risk for all public highway-rail grade crossings that are part of a quiet zone.

**The Prediction Formulas**

(a) The Prediction Formulas were developed by DOT as a guide for allocating scarce traffic safety budgets at the State level. They allow users to rank candidate crossings for safety improvements by collision probability. There are three formulas, one for each warning device category:

1. Automatic gates with flashing lights;
2. Flashing lights with no gates; and
3. Passive warning devices.

(b) The prediction formulas can be used to derive the following for each crossing:

1. The predicted collisions (PC)
2. The probability of a fatal collision given that a collision occurs (P(FC|C))
3. The probability of a casualty collision given that a collision occurs (P(CC|C))

(c) The following factors are the determinants of the number of predicted collisions per year:

1. Average annual daily traffic
2. Total number of trains per day
3. Number of highway lanes
4. Number of main tracks
5. Maximum timetable train speed
6. Whether the highway is paved or not
7. Number of through trains per day during daylight hours

(d) The resulting basic prediction is improved in two ways. It is enriched by the particular crossing’s collision history for the previous five years and it is calibrated by resetting normalizing constants. The normalizing constants are reset so that the sum of the predicted accidents in each warning device group (passive, flashing lights, gates) for the top twenty percent most hazardous crossings exactly equals the number of accidents which occurred in a recent period for the top twenty percent of that group. This adjustment factor allows the formulas to stay current with collision trends. The calibration also corrects for errors such as data entry errors. The final output is the predicted number of collisions (PC).

(e) The severity formulas answer the question, “What is the chance that a fatality (or casualty) will happen, given that a collision has occurred?” The fatality formula calculates the probability of a fatal collision given that a collision occurs (*i.e.*, the probability of a collision in which a fatality occurs) P(FC|C). Similarly, the casualty formula calculates the probability of a casualty collision given that a collision occurs P(CC|C). As casualties consist of both fatalities and injuries, the probability of a non-fatal injury collision is found by subtracting the probability of a fatal collision from the probability of a casualty collision. To convert the probability of a fatal or casualty collision to the number of expected fatal or casualty collisions, that probability is multiplied by the number of predicted collisions (PC).

(f) For the prediction and severity index formulas, please see the following DOT publications: *Summary of the DOT Rail-Highway Crossings Resource Allocation Procedure—Revised*, June 1987, and the *Rail-Highway Crossing Resource Allocation Procedure: User’s Guide, Third Edition*, August 1987. Both documents are in the docket for this rulemaking and also available through the National Technical Information Service located in Springfield, Virginia 22161.

**Risk Index**

(a) The risk index is basically the predicted cost to society of the casualties that are expected to result from the predicted collisions at a crossing. It incorporates three outputs of the DOT prediction formulas. The two components of a risk index are:

$$1. \text{ Predicted Cost of Fatalities} = PC \times P(FC|C) \times (\text{Average Number of Fatalities Observed In Fatal Collisions}) \times \$3 \text{ million.}$$

$$2. \text{ Predicted Cost of Injuries} = PC \times (P(CC|C) - P(FC|C)) \times (\text{Average Number of Injuries in Collisions Involving Injuries}) \times \$1,167,000.$$

PC, P(CC|C), and P(FC|C) are direct outputs of the DOT prediction formulas.

(b) The average number of fatalities observed in fatal collisions and the average number of injuries in collisions involving injuries were calculated by FRA as follows.

(c) The highway-rail incident files from 1999 through 2003 were matched against a data file containing the list of whistle ban crossings in existence from January 1, 1999 through December 31, 2003 to identify two types of collisions involving trains and motor vehicles: (1) those that occurred at crossings where a whistle ban was in place during the period, and (2) those that occurred at crossings equipped with automatic gates where a whistle ban was not in place. Certain records were excluded. These were incidents where the driver was not in the motor vehicle, or the motor vehicle struck the train beyond the 4th locomotive or rail car that entered the crossing. FRA believes that sounding the train horn would not be very effective at preventing such incidents.<sup>1</sup>

(d) Collisions in the group containing the gated crossings nationwide where horns are routinely sounded were then identified as either fatal, injury only, or no casualty. Collisions were identified as fatal if one or more deaths occurred, regardless of whether or not injuries were also sustained. Collisions were identified as injury only when injuries, but no fatalities, resulted.

(e) The collisions (incidents) selected were summarized by year from 1999 through 2003. The total number of collisions for the period was 2,161. The fatality rate for each year was calculated by dividing the number of fatalities (“Deaths”) by the number of fatal incidents (“Number”). The injury rates were calculated by dividing the number of injuries in injury only incidents (“Injured”) by the number of injury only incidents (“Number”).

<sup>1</sup> The data used to make these exclusions is contained in blocks 18—Position of Car Unit in Train; 19—Circumstance: Rail Equipment Struck/Struck By Highway User; 28—Number of Locomotive Units; and 29—Number of Cars of the current FRA Form 6180–57 Highway-Rail Grade Crossing Accident/Incident Report.

There were 274 fatal incidents resulting in 324 fatalities and yielding a fatality rate 1.1825 for the period. There were 551 injury-only incidents resulting in 733 injuries and yielding an injury rate 1.3303 for the period.

(f) Per guidance from DOT, \$3 million is the value placed on preventing a fatality. The Abbreviated Injury Scale (AIS) developed by the Association for the Advancement of Automotive Medicine categorizes injuries into six levels of severity. Each AIS level is assigned a value of injury avoidance as a fraction of the value of avoiding a fatality. FRA rates collisions that occur at train speeds in excess of 25 mph as an AIS level 5 (\$2,287,500) and injuries that result from collisions involving trains traveling under 25 mph as an AIS level 2 (\$46,500). About half of grade crossing collisions occur at speeds greater than 25 mph. Therefore, FRA estimates that the value of preventing the average injury resulting from a grade crossing collision is \$1,167,000 (the average of an AIS-5 injury and an AIS-2 injury.)

(g) Notice that the quantity  $\{PC \cdot P(FCC)\}$  represents the expected number of fatal collisions. Similarly,  $\{PC \cdot [P(CC|C) - P(FC|C)]\}$  represents the expected number of injury collisions. These are then multiplied by their respective average number of fatalities and injuries (from the table above) to develop the number of expected casualties. The final parts of the expressions attach the dollar values for these casualties.

(h) The Risk Index for a Crossing is the integer sum of the Predicted Cost of Fatalities and the Predicted Cost of Injuries.

#### Nationwide Significant Risk Threshold

The Nationwide Significant Risk Threshold is simply an average of the risk indexes for all of the gated crossings nationwide where train horns are routinely sounded. FRA identified 35,803 gated non-whistle ban crossings for input to the Nationwide Significant Risk Threshold.

The Nationwide Significant Risk Threshold rounds to 17,030. This value is recalculated annually.

#### Crossing Corridor Risk Index

The Crossing Corridor Risk Index is the average of the risk indexes of all the crossings in a defined rail corridor. Communities seeking to establish "Quiet Zones" should initially calculate this average for potential corridors.

#### Quiet Zone Risk Index

The Quiet Zone Risk Index is the average of the risk indexes of all the public crossings in a Quiet Zone. It takes into consideration the absence of the horn sound and any safety measures that may have been installed.

#### Appendix E to Part 222—Requirements for Wayside Horns

This appendix sets forth the following minimum requirements for wayside horn use at highway-rail grade crossings:

1. Highway-rail crossing must be equipped with constant warning time device, if reasonably practical, and power-out indicator;
2. Horn system must be equipped with an indicator or other system to notify the locomotive engineer as to whether the

wayside horn is operating as intended in sufficient time to enable the locomotive engineer to sound the locomotive horn for at least 15 seconds prior to arrival at the crossing in the event the wayside horn is not operating as intended;

3. The railroad must adopt an operating rule, bulletin or special instruction requiring that the train horn be sounded if the wayside horn indicator is not visible approaching the crossing or if the wayside horn indicator, or an equivalent system, indicates that the system is not operating as intended;

4. Horn system must provide a minimum sound level of 92 dB(A) and a maximum of 110 dB(A) when measured 100 feet from the centerline of the nearest track;

5. Horn system must sound at a minimum of 15 seconds prior to the train's arrival at the crossing and while the lead locomotive is traveling across the crossing. It is permissible for the horn system to begin to sound simultaneously with activation of the flashing lights or descent of the crossing arm;

6. Horn shall be directed toward approaching traffic.

#### Appendix F to Part 222—Diagnostic Team Considerations

For purposes of this part, a diagnostic team is a group of knowledgeable representatives of parties of interest in a highway-rail grade crossing, organized by the public authority responsible for that crossing who, using crossing safety management principles, evaluate conditions at a grade crossing to make determinations or recommendations for the public authority concerning the safety needs at that crossing. Crossings proposed for inclusion in a quiet zone should be reviewed in the field by a diagnostic team composed of railroad personnel, public safety or law enforcement, engineering personnel from the State agency responsible for grade crossing safety, and other concerned parties.

This diagnostic team, using crossing safety management principles, should evaluate conditions at a grade crossing to make determinations and recommendations concerning safety needs at that crossing. The diagnostic team can evaluate a crossing from many perspectives and can make recommendations as to what safety measures authorized by this part might be utilized to compensate for the silencing of the train horns within the proposed quiet zone.

#### All Crossings Within a Proposed Quiet Zone

The diagnostic team should obtain and review the following information about each crossing within the proposed quiet zone:

1. Current highway traffic volumes and percent of trucks;
2. Posted speed limits on all highway approaches;
3. Maximum allowable train speeds, both passenger and freight;
4. Accident history for each crossing under consideration;
5. School bus or transit bus use at the crossing; and
6. Presence of U.S. DOT grade crossing inventory numbers clearly posted at each of the crossings in question.

The diagnostic team should obtain all inventory information for each crossing and

should check, while in the field, to see that inventory information is up-to-date and accurate. Outdated inventory information should be updated as part of the quiet zone development process.

When in the field, the diagnostic team should take note of the physical characteristics of each crossing, including the following items:

1. Can any of the crossings within the proposed quiet zone be closed or consolidated with another adjacent crossing? Crossing elimination should always be the preferred alternative and it should be explored for crossings within the proposed quiet zone.

2. What is the number of lanes on each highway approach? Note the pavement condition on each approach, as well as the condition of the crossing itself.

3. Is the grade crossing surface smooth, well graded and free draining?

4. Does the alignment of the railroad tracks at the crossing create any problems for road users on the crossing? Are the tracks in superelevation (are they banked on a curve?) and does this create a conflict with the vertical alignment of the crossing roadway?

5. Note the distance to the nearest intersection or traffic signal on each approach (if within 500 feet or so of the crossing or if the signal or intersection is determined to have a potential impact on highway traffic at the crossing because of queuing or other special problems).

6. If a roadway that runs parallel to the railroad tracks is within 100 feet of the railroad tracks when it crosses an intersecting road that also crosses the tracks, the appropriate advance warning signs should be posted as shown in the MUTCD.

7. Is the posted highway speed (on each approach to the crossing) appropriate for the alignment of the roadway and the configuration of the crossing?

8. Does the vertical alignment of the crossing create the potential for a "hump crossing" where long, low-clearance vehicles might get stuck on the crossing?

9. What are the grade crossing warning devices in place at each crossing? Flashing lights and gates are required for each public crossing in a New Quiet Zone. Are all required warning devices, signals, pavement markings and advance signing in place, visible and in good condition for both day and night time visibility?

10. What kind of train detection is in place at each crossing? Are these systems old or outmoded; are they in need of replacement, upgrading, or refurbishment?

11. Are there sidings or other tracks adjacent to the crossing that are often used to store railroad cars, locomotives, or other equipment that could obscure the vision of road users as they approach the crossings in the quiet zone? Clear visibility may help to reduce automatic warning device violations.

12. Are motorists currently violating the warning devices at any of the crossings at an excessive rate?

13. Do accident statistics for the corridor indicate any potential problems at any of the crossings?

14. If school buses or transit buses use crossings within the proposed quiet zone

corridor, can they be rerouted to use a single crossing within or outside of the quiet zone?

**Private Crossings Within a Proposed Quiet Zone**

In addition to the items discussed above, a diagnostic team should note the following issues when examining any private crossings within a proposed quiet zone:

1. How often is the private crossing used?
2. What kind of signing or pavement markings are in place at the private crossing?
3. What types of vehicles use the private crossing?

School buses  
Large trucks  
Hazmat carriers  
Farm equipment

4. What is the volume, speed and type of train traffic over the crossing?
5. Do passenger trains use the crossing?
6. Do approaching trains sound the horn at the private crossing?

State or local law requires it?  
Railroad safety rule requires it?

7. Are there any nearby crossings where train horns sound that might also provide some warning if train horns were not sounded at the private crossing?

8. What are the approach (corner) sight distances?
9. What is the clearing sight distance for all approaches?
10. What are the private roadway approach grades?
11. What are the private roadway pavement surfaces?

**Pedestrian Crossings Within a Proposed Quiet Zone**

In addition to the items discussed in the section titled, "All crossings within a proposed quiet zone", a diagnostic team should note the following issues when examining any pedestrian crossings within a proposed quiet zone:

1. How often is the pedestrian crossing used?
2. What kind of signing or pavement markings are in place at the pedestrian crossing?
3. What is the volume, speed, and type of train traffic over the crossing?
4. Do approaching trains sound the horn at the pedestrian crossing?

State or local law requires it?  
Railroad safety rule requires it?

5. Are there any crossings where train horns sound that might also provide some warning if train horns were not sounded at the pedestrian crossing?
6. What are the approach sight distances?
7. What is the clearing sight distance for all approaches?

**Appendix G to Part 222—Schedule of Civil Penalties<sup>1</sup>**

Section	Violation	Willful Violation
<b>Subpart B—Use of Locomotive Horns</b>		
§ 222.21 Use of locomotive horn:		
(a) Failure to sound horn at grade crossing .....	\$5,000	\$7,500
Failure to sound horn in proper pattern .....	1,000	3,000
(b) Failure to sound horn at least 15 and no more than 20 seconds before crossing; .....	5,000	7,500
Routine sounding of the locomotive horn more than 1/4-mile in advance of crossing .....	5,000	7,500
§ 222.33		
Failure to sound horn when conditions of § 222.33 are not met .....	5,000	7,500
§ 222.45		
Routine sounding of the locomotive horn at a grade crossing within a quiet zone .....	5,000	7,500
§ 222.49		
(b) Failure to provide Grade Crossing Inventory Form information .....	2,500	5,000
§ 222.59		
(d) Routine sounding of the locomotive horn at a grade crossing equipped with wayside horn .....	5,000	7,500

**PART 229—[AMENDED]**

■ 2. The authority citation for part 229 continues to read as follows:

**Authority:** 49 U.S.C. 20102–20103, 20107, 20133, 20137–20138, 20143, 20701–20703, 21301–21302, 21304; 49 CFR 149(c), (m)

**§ 229.5 [Amended]**

■ 3. Section 229.5 is amended by removing paragraph designations (a) through (p), transferring the definition of "electronic air brake" so that it appears in alphabetical order, and adding the following definitions in alphabetical order to read as follows:

*Acceptable quality level (AQL).* The AQL is expressed in terms of percent defective or defects per 100 units. Lots having a quality level equal to a specified AQL will be accepted approximately 95 percent of the time when using the sampling plans prescribed for that AQL.

\* \* \* \* \*

*Defective* means, for purposes of this part, a locomotive equipped with an

audible warning device that produces a maximum sound level in excess of 110 dB(A) and/or a minimum sound level below 96 dB(A), as measured 100 feet forward of the locomotive in the direction of travel.

\* \* \* \* \*

*Lot* means a collection of locomotives, equipped with the same horn model, configuration, and location, and the same air pressure and delivery system, which has been manufactured or processed under essentially the same conditions.

\* \* \* \* \*

■ 4. Section 229.129 is revised to read as follows:

**§ 229.129 Audible warning device.**

(a) Each lead locomotive shall be provided with an audible warning device that produces a minimum sound level of 96dB(A) and a maximum sound level of 110 dB(A) at 100 feet forward of the locomotive in its direction of travel. The device shall be arranged so that it can be conveniently operated

from the engineer's usual position during operation of the locomotive.

(b)(1) Each locomotive built on or after June 24, 2005 shall be tested in accordance with this section to ensure that the horn installed on such locomotive is in compliance with paragraph (a) of this section. Locomotives built on or after June 24, 2005 may, however, be tested in accordance with an acceptance sampling scheme such that there is a probability of .05 or less of rejecting a lot with a proportion of defectives equal to an AQL of 1% or less, as set forth in 7 CFR part 43.

(2) Each locomotive built before June 24, 2005 shall be tested in accordance with this section before June 24, 2010 to ensure that the horn installed on such locomotive is in compliance with paragraph (a) of this section.

(3) Each locomotive when rebuilt, as determined pursuant to 49 CFR 232.5, shall be tested in accordance with this section to ensure that the horn installed

<sup>1</sup> A penalty may be assessed against an individual only for a willful violation. The Administrator

reserves the right to assess a penalty of up to

\$27,000 for any violation where circumstances warrant. See 49 CFR part 209, appendix A.

on such locomotive is in compliance with paragraph (a).

(c) Testing of the locomotive horn sound level shall be in accordance with the following requirements:

(1) A properly calibrated sound level meter shall be used that, at a minimum, complies with the requirements of International Electrotechnical Commission (IEC) Standard 61672-1 (2002-05) for a Class 2 instrument.

(2) An acoustic calibrator shall be used that, at a minimum, complies with the requirements of IEC Standard 60942 (1997-11) for a Class 2 instrument.

(3) The manufacturer's instructions pertaining to mounting and orienting the microphone; positioning of the observer; and periodic factory recalibration shall be followed.

(4) A microphone windscreen shall be used and tripods or similar microphone mountings shall be used that minimize interference with the sound being measured.

(5) The test site shall be free of large reflective structures, such as barriers, hills, billboards, tractor trailers or other large vehicles, locomotives or rail cars on adjacent tracks, bridges or buildings, within 200 feet to the front and sides of the locomotive and microphone. The locomotive shall be positioned on straight, level track.

(6) Measurements shall be taken only when ambient air temperature is between 32 degrees and 104 degrees Fahrenheit inclusively; relative

humidity is between 20 percent and 95 percent inclusively; wind velocity is not more than 12 miles per hour and there is no precipitation.

(7) With the exception of cab-mounted or low-mounted horns, the microphone shall be located 100 feet forward of the front knuckle of the locomotive, 15 feet above the top of the rail, at an angle no greater than 20 degrees from the center line of the track, and oriented with respect to the sound source according to the manufacturer's recommendations. For cab-mounted and low-mounted horns, the microphone shall be located 100 feet forward of the front knuckle of the locomotive, four feet above the top of the rail, at an angle no greater than 20 degrees from the center line of the track, and oriented with respect to the sound source according to the manufacturer's recommendations. The observer shall not stand between the microphone and the horn.

(8) Background noise shall be minimal: the sound level at the test site immediately before and after each horn sounding event shall be at least 10 dB(A) below the level measured during the horn sounding.

(9) *Measurement procedures.* The sound level meter shall be set for A-weighting with slow exponential response and shall be calibrated with the acoustic calibrator immediately before and after compliance tests. Any

change in the before and after calibration levels shall be less than 0.5 dB. After the output from the locomotive horn system has reached a stable level, the A-weighted equivalent sound level (slow response) for a 10-second duration (LAeq, 10s) shall be obtained either directly using an integrating-averaging sound level meter, or recorded once per second and calculated indirectly. The arithmetic-average of a series of at least six such 10-second duration readings shall be used to determine compliance. The standard deviation of the readings shall be less than 1.5 dB.

(10) Written reports of locomotive horn testing required by this part shall be made and shall reflect horn type; the date, place, and manner of testing; and air flow and sound level measurements. These reports, which shall be signed by the person who performs the test, shall be retained by the railroad, at a location of its choice, until a subsequent locomotive horn test is completed and shall be made available, upon request, to FRA as provided by 49 U.S.C. 20107.

(d) This section does not apply to locomotives of rapid transit operations which are otherwise subject to this part.

**Appendix B to Part 229—[Amended]**

■ 4. The entry for § 229.129 “Audible warning devices” in appendix B to Part 229 is revised to read as follows:

	Violation	Willful Violation
229.129 Audible warning device:		
(a) prescribed sound levels .....	\$2,500	\$5,000
arrangement of device .....	2,500	5,000
(b) testing .....	2,500	5,000
(c) test procedures .....	2,500	5,000
(c)(10) records of tests .....	2,500	5,000

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**Robert D. Jamison,**  
*Acting Administrator.*

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