Quiet Zone Process

Background:
In order to reduce the impact of train horns on municipalities, the FRA (Federal Railroad Administration) has provided communities with the option to establish a QZ (Quiet Zone). A quiet zone is defined as a corridor along a railway that is exempt from the 2005 Swift Rail Act.

Why do Trains have to sound their Horns at a railroad/highway intersection?
- Locomotive Engineers must comply with the Law:
- Federal Railroad Administration Ruling
  - In 1994, Congress passed the Swift Rail Development Act, Public Law 103-440 (Swift Act), which added Section 20153, Audible Warnings at Highway-Rail Crossings, to Title 49 of the United States Code.
  - Section 20153 directed the FRA (Federal Railroad Administration) to issue a rule requiring the use of train horns at all public highway-rail crossings.
  - As of April 1st, 2005, trains are required to sound their horns at every rail crossing in the US.

Quiet Zone (QZ) Definition:
A railroad at-grade crossing that is enhanced with additional safety measures. The added safety measures negate the need for a train to routinely sound its horn when approaching the crossing.

Theory behind a Quiet Zone:
The overarching theory behind a QZ is to install physical barriers, also known as Supplementary Safety Measures (SSMs), to provide additional safety for motorists at a highway/railroad crossing. The SSMs are barriers approved by the FRA that negate the need for the sounding of the locomotive horn.

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

Quiet Zone Establishment Process:
Determine the governing body with the authority to establish a Quiet Zone
Municipality – Under the train horn rule, the public agency with authority over the roadway that crosses the railroad tracks must apply for the quiet zone. Under this definition, cities, counties, and special districts with roadway authority may apply for quiet zones. In cases where roads within the quiet zone are managed by different authorities, the affected agencies must collaborate and choose a lead agency to apply for the quiet zone.

Quiet Zone Calculations:
For municipalities and industry personnel working to establish a Quiet Zone, there are two important values that need to be considered:
1. **NSRT** (National Significant Risk Threshold) – The average Risk Index of all public, gated crossings in the nation at which train horns are sounded.
   a. As of July 19, 2014 the NSRT is **14,347**.

2. **QZRI (Quiet Zone Risk Index)** - The average risk index for all public crossings in a proposed quiet zone taking into consideration the increased risk caused by the absence of train horns and any decrease in risk attributable to the use of SSMs or ASMs.

In order to establish a quiet zone, the **QZRI must be less than the NSRT**. A municipality may establish and lower the QZRI of a proposed quiet zone through the addition of SSMs, ASMs or wayside horn systems.

**Purpose:**
The purpose of this document is to provide step by step instructions for the establishment of a quiet zone.

**Application - Trackside Wayside Warning System:**
When working with a municipality, it is acknowledged that the ideal solution to train horn noise is to eliminate the sounding of the horn all together by the establishment of a quiet zone. The challenge of a quiet zone is the installation and high cost of the physical barriers that are defined as SSMs (Supplementary Safety Measures), and the impact they have on the QZRI (Quiet Zone Risk Index).

The QZRI is calculated over the length of the quiet zone once the SSMs are installed, and if the QZRI is beneath that of the NSRT (National Significant Risk Threshold), the quiet zone may be established. If the QZRI is above the NSRT, additional SSMs will have to be added or the municipality will have to find an alternative to a quiet zone such as a wayside horn system. the quiet zone may not be established.

**Process:**
The detailed flow chart in figure 2 provides a step by step process that can be used when working with a municipality and it also has links to the Appendices A through C so that the personnel using the flow chart are aware of the documentation requirements for each of the steps. For further information, links are provided in many of the appendices. This process flow is provided as a guide to ensure the requirements are met for the establishment of a quiet zone as defined by the FRA. Coordination will be needed by the municipality, the FRA, railroads, equipment vendors and state and local traffic enforcement to ensure compliance with the FRA quiet zone requirements.
Quiet Zone Process

Step 1 – Identify Crossings
- In proposed QZ, determine all:
  - Public, private & pedestrian
  - All grade separations
  - Identify by crossing ID number and name
  - ID number - 6 numbers and letter
  - Posted at crossing
  - Safety data web site see
detl.aspx

Step 2 – Notice of Intent
- PA must provide written Notice of Intent to establish a QZ to these parties:
  - All railroads operating over crossings
  - State highway safety agency
  - State agency responsible for crossing safety
The Purpose is to provide opportunity for comments and recommendations to PA as it plans the QZ.
Agencies have 60 days to provide comments to PA.
Note - Provide Early in the process. See Appendix B for a sample.

Step 3 - Length
- Ensure New QZ will be at least ½ mile in length

Step 4 - Inventory
- A complete and accurate Inventory must be on file
- Public, private & pedestrian crossings
- Crossing inspection should be done and form updated and filed. See

Step 5 – Warning Devices
- All public crossings must have lights and gates, and:
  - Must have power out indicators
  - Must have constant warning time unless conditions would prohibit

Step 5 Cont’d (Warning Devices)
- FRA recommends a bell for all crossing devices.
- Bells may not be removed or deactivated.
- Planning can continue without devices but must be installed prior to designation

Figure 2 - Quiet Zone Detailed Process
Quiet Zone Process

A

Are Private Crossings part of the QZ?

Y/N

N

Y

Step 6 – Private Crossings within a quiet zone:
- Equipped with crossbucks and STOP sign as minimum on both approaches
- Private crossings with public access, industrial or commercial use require a Diagnostic team review
- State agencies & railroads must be invited to the diagnostic meeting
- Private crossings are to be treated per teams recommendation

Step 7 – Pedestrian Crossings
- Must have a diagnostic review and equipped per the recommendations.
- Must invite State agencies & railroads
- Minimum signs advising pedestrians that train horns are not sounded.
- MUTCD compliant - Appendix D

Step 8 – Signs
- Each highway approach must have advanced warning sign advising horns not sounded
- MUTCD compliant - See Appendix D
- Public and private crossings

Step 9 – QZ Qualifying Conditions
- Calculate QZRI, and obtain NSRT. QZRI ≤ NSRT?

Y/N

N

D

Install SSMs. Are there SSMs at every public crossing?

Y/N

N

E

Step 10 – Risk Index
- Calculate RI for each public crossing
- Non-gated crossings – calculate as if gates were present
- Gates must be installed prior to designation
- Use current and accurate data
- Private & pedestrian crossings not included
- QZ Calculator does this for you

B

Figure 2 - Quiet Zone Detailed Process
Quiet Zone Process

Step 11 - RIWH
- Calculate the RIWH by averaging RI for all public crossings
- QZ Calculator does this for you

Step 12 - QZRI
- Adjust RI for each crossing for increased risk caused by no horn (see Appendix H)
  - 66.8% increase (RI * 1.668)
  - QZRI = average of the revised (increased) risk index for each crossing
  - QZRI = CCRRI * 1.668 (CCRRI = Closed Crossing Risk Index)
- QZ Calculator does this for you

Step 14 - Reduce Risk To NSRT or RIWH
- Select a SSM for a crossing and reduce inflated RI per effectiveness rate of SSM

Re-calculate QZRI using reduced RI. Is new QZRI <= NSRT or RIWH?

Y/N

Y

QZ is Qualified
Proceed with Notice of QZ Establishment
- Annual review if use NSRT. May choose to reduce risk to RIWH

N

May designate and proceed with Notice of QZ Establishment
- Stop
Note that the QZ annually reviewed if NSRT number is used. May choose to reduce risk to RIWH.

Figure 2 - Quiet Zone Detailed Process
Step 15 - Notice of QZ Establishment
- Purpose — advise affected parties of QZ establishment
- Required when:
  - New QZ being created
  - Pre-Rule QZ that qualifies for automatic approval
  - Intermediate QZ creating a New QZ
  - Pre-Rule QZ that did not automatically qualify and has made necessary improvements

Notice of QZ Establishment Contents:
- Person monitoring compliance and contact information
- Names and address of those that receive the QZ Establishment notice
- CEO certification that information is accurate and complete

Notice of QZ Establishment Sent to:
- All railroads operating over QZ
- Highway or traffic control authority, or law enforcement, having control over vehicular traffic on crossings
- State agency responsible for highway and road safety
- State agency responsible for grade crossing safety
- All private property landowners with private crossings in QZ
- Associate Administrator Note - Sent by certified mail

Stop

Figure 2 - Quiet Zone Detailed Process
Figure 2 - Quiet Zone Detailed Process
## Quiet Zone Process

### Appendix A

**U.S. DOT CROSSING INVENTORY FORM**

**DEPARTMENT OF TRANSPORTATION**

**FEDERAL RAILROAD ADMINISTRATION (FRA)**

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Initiating Agency</td>
</tr>
<tr>
<td>Railroad</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Railroad Operating Company (max 4 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Railroad Division or Region (max 14 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. RR Milepost (nnnn.nnn)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Crossing Owner (RR or Company Name)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. City (max 16 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Highway Type &amp; No. (max 7 char.)</td>
</tr>
<tr>
<td>□ Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Crossing Type (choose one only)</td>
</tr>
<tr>
<td>□ Public</td>
</tr>
<tr>
<td>□ Private</td>
</tr>
<tr>
<td>□ Pedestrian</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>20. Average Passenger Train Count Per Day</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>21. HSR Corridor ID (max 2 char.)</td>
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</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>22. County Map Ref. No. (max 10 char.)</td>
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</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>23. Latitude (nnn.nnnnnnn)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>24. Longitude (nnn.nnnnnnn)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>25. Lat/Long Source</td>
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</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>26. Is There an Adjacent Crossing With a Separate Number?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. PRIVATE CROSSING INFORMATION</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>27.A. Category (check one)</td>
</tr>
<tr>
<td>Farm</td>
</tr>
<tr>
<td>Residential</td>
</tr>
<tr>
<td>Recreational</td>
</tr>
<tr>
<td>Industrial</td>
</tr>
<tr>
<td>Commercial</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. A. Railroad Use (max 20 char.)</td>
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</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. B. Railroad Use (max 20 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. C. Railroad Use (max 20 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. D. Railroad Use (max 20 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.A. State Use (max 20 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
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</thead>
<tbody>
<tr>
<td>29.B. State Use (max 20 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.C. State Use (max 20 char.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part I: Location and Classification Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>29.D. State Use (max 20 char.)</td>
</tr>
</tbody>
</table>
### U.S. DOT CROSSING INVENTORY FORM

#### Page 2

**B. Crossing Number**

<table>
<thead>
<tr>
<th>B. Crossing Number</th>
<th>D. Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part III: Traffic Control Device Information**

1. **No Signs or Signals**
   - Check if Correct
2. **Type of Warning Device at Crossing – Signs (specify number of each)**
   - 2.A. Crossbucks
   - 2.B. Highway Stop Signs (R1-1)
   - 2.C. RR Advance Warning Signs (W10-1)
     - Yes
     - No
   - 2.D. Hump Crossing Sign (W10-5)
     - Yes
     - No
     - Unknown
3. **Pavement Markings**
   - Stoplines
   - RR Xing Symbols
   - None
4. **Other Signs: (specify MUTCD type)**
   - Number
   - Specify Type
5. **Type of Warning Device at Crossing – Train Activated Devices (specify number of each)**
   - 3.A. Gates
     - Yes
     - No
   - 3.B. Four-Quadrant (or full barrier) Gates
   - 3.C. Cantilevered (or Bridged) Flashing Lights
     - Over Traffic Lane (number)
     - Not Over Traffic Lane (number)
   - 3.D. Mast Mounted Flashing Lights (number)
   - 3.E. Number of Flashing Light Pairs
6. **Other Flashing Lights:**
   - Number
   - Specify Type
   - (max 9 characters)
7. **Other Train Activated Warning Devices: (specify) (max 9 characters)**
8. **Specify Special Warning Device NOT Train Activated:**
   - DO NOT USE OR ENTER DATA
9. **Channelization Devices With Gates**
   - All Approaches
   - One Approach
   - None
10. **Train Detection**
    - Constant Warning Time
    - DC/AFO
    - Motion Detectors
11. **Signaling for Train Operation:**
    - Is Train Equipped with Train Signal?
      - Yes
      - No
12. **Traffic Light Interconnection/Preemption**
    - Not Interconnected
    - N/A
    - Simultaneous Preemption
    - Advanced Preemption
### Quiet Zone Process

<table>
<thead>
<tr>
<th>1. Type of Development</th>
<th>2. Smallest Crossing Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Space</td>
<td>Residential</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Timber</td>
<td>6. Rubber</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Asphalt</td>
<td>7. Metal</td>
<td>Less than 75 feet</td>
</tr>
<tr>
<td>3. Asphalt and Flange</td>
<td>8. Unconsolidated</td>
<td>9. Other (Specify)</td>
</tr>
<tr>
<td>4. Concrete</td>
<td>5. Concrete and Rubber</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Part V: Highway Information

<table>
<thead>
<tr>
<th>1. Highway System</th>
<th>2. Is Crossing on State Highway System?</th>
<th>3. Functional Classification of Road at Crossing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstate</td>
<td>Federal Aid, Not NHS</td>
<td>Yes</td>
</tr>
<tr>
<td>Nat. Hwy System (NHS)</td>
<td>Non-Federal Aid</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Annual Average Daily Traffic (AADT)</th>
<th>6. Estimate Percent Trucks</th>
<th>7. Average Number of School Buses Over Crossing per School Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>AADT</td>
<td></td>
</tr>
</tbody>
</table>

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Paperwork Reduction Act: Public reporting for this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a currently valid OMB Control Number. The Valid OMB Control Number for this collection is 2130-0017.

See this FRA Link for a copy of this template

[http://www.fra.dot.gov/us/content/801](http://www.fra.dot.gov/us/content/801)
Notice of Intent - Page 1 of X

CITY XYZ QUIET ZONE
Associate Administrator for Safety
Federal Railroad Administration
1200 New Jersey Avenue, SE, MS-25
Washington, DC 20590

Mailed: ____________, 2014
Certified Mail Article# __________________

Subject: Notice of Intent to Establish a Railroad Quiet Zone by Public Authority
Designation 49 CFR 222.39(a)(3).

This letter and the attachments are a Notice of Intent for the proposed creation of a new ______ mile quiet zone. The railroad quiet zone would begin at __________ milepost ______ and end at Railroad milepost __________. As required by the Federal Railroad Administration (FRA), the following information is provided to you and other parties.

All public and private highway-rail at-grade crossings to be included within the proposed quiet zone are (49 CFR 222.43(b)(2)(i)):

**Crossing No. Mile Post Crossing Type Street Name**

<table>
<thead>
<tr>
<th>ID NO.</th>
<th>Public/Private</th>
<th>Road</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

The ______ Quiet Zone is to restrict the routine sounding of locomotive horns on a 24-hours a day basis (49 CFR 222.43(b)(2)(ii)).

All at-grade public crossings in the _______ Quiet Zone are equipped with flashing lights and gates, power out indicators and constant warning time devices. As a result of all these improvements the Quiet Zone Risk Index (QZRI) has been reduced to a level below the Risk Index with Horns (RIWH) (49 CFR 222.43(b)(2)(iii)).

A complete and accurate Grade Crossing Inventory Form is on file with the FRA for every public grade crossing in the ________________ Quiet Zone.

Before the implementation of the ___________ Quiet Zone, each crossing approach will have an advanced warning sign, in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), which advises motorists that train horns are not sounded at the crossing.

A Diagnostic Team met ___________ to evaluate conditions at every public and private grade crossing in the ___________ Quiet Zone and to make determinations or recommendations concerning the safety needs at each crossing. The Diagnostic Team reviewed and studied all of the safety improvements implemented in the quiet zone. The Team determined that there were/were not private crossings within the proposed quiet zone and all questions, request, determinations and recommendations were addressed and noted. All public grade crossings in the proposed quiet zone were visited in the field by the Diagnostic Team.
and it was determined that no additional safety measures were needed for risk reduction for the ________________ Quiet Zone to move toward implementation.

Notice of Intent - Page 3 of 6

i:08proj\quiet zone\fra noi.docx

Members of the ________________ Quiet Zone Diagnostic Team:
_________, Federal Railroad Administration (FRA)
Regional Crossing and Trespasser Manager  
_________, __Appropriate State _________ Department of Transportation
Grade Crossing Safety Engineer  
_________, __________________________ Railway
City of ____________________ Representatives
_______________________, Director of Public Works/City Engineer
_______________________, Project Manager

Name and title of person who will act as point of contact during the quiet zone development process is (49 CFR 222.43(b) (2) (iv)):

__________________

Project Manager
Title _____________
City________________
State ________________
Phone ________________
Email: ____________________

A list of the names and addresses of each party that will receive written notification in accordance with 49 CFR 222.43(a) (1) & (3).

The following will receive written notice, by certified mail, return receipt requested, of our intent to create the ________________ Quiet Zone.

Associate Administrator for Safety
Federal Railroad Administration
1200 New Jersey Avenue, SE, MS-25
Washington, DC 20590

The State agency responsible for highway and road safety:
Title ______________
Address ______________
City_______________
State ______________

Railroads operating over the public highway-rail grade crossings within the proposed quiet zone:
Name _____________
Title ______________
Railroad ______________
Address ______________
City________________
State ______________

The State agency responsible for grade crossing safety:
Quiet Zone Process

Name __________________

Title ___________________
Railroad _________________

Address _________________
City_____________________
State ____________________
The highway or traffic control or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the proposed quiet zone:
Name __________________
Title ___________________
Address __________________
City_____________________
State ____________________

ACTION REQUIRED
Please consider this notice as the beginning date of the required 60-day comment period in the _______ Quiet Zone process. The 60-day comment period for this Quiet Zone will end on __________, 20XX, or when written comments or a “no comment” statement is received from each recipient of this notice (49 CFR 222.43(b)(3)(i)).

Submitted,
____________________________
Project Manager
Date__________________
Address________________
City____________________
State____________________
Zip_____________________
Subject: Notice of Intent to Establish a Railroad Quiet Zone by Public Authority
Designation 49 CFR 222.39(a)(3).
We received your Notice of Intent dated ____________, 2009. We offer the following comments:

☐ No Comment.
☐ Comment:

______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________

Signature
By:
______________________________________________________________
______________________________________________________________
Appendix C

Diagnostic Team

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 collision 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?
FRA will leave to individual states the decision as to specific size and design of the required signs; however, they must be in conformance with the MUTCD. FRA is not at this time proposing that approaches to each private highway-rail crossing be equipped with such advance warning signs.

MUTCD Link: