

# Railroad Quiet Zones

City of Loveland

Public Information Meeting

February 19, 2009



# **Railroad Quiet Zones**

## **AGENDA:**

**7:00-7:05 Introduction –Frank Hempen (City Project Manager)**

**7:05- 7:20 Railroad Quiet Zones Overview - Kyle Anderson  
(Felsburg Holt & Ullevig)**

**7:20- 9:00 Review Exhibits of Individual Crossings- All  
(By Railroad Corridor and Area)**

**\*\*\*Please Sign in and Fill out Comment Sheet**



# Railroad Quiet Zones

- Why Must Trains Sound their Horns?
  - Congress Required By Law (49 U.S.C. 20153)
  - The Federal Railroad Administration (FRA) has identified specific safety benefits.
- Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule
  - Effective June 2005
  - Amended August 2006
  - Requires horns to be sounded at public crossings

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Part IV

**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

# Railroad Quiet Zones

- Final Rule
  - Provides exceptions where risk is minimized
  - Enables communities to establish quiet zones by mitigating the silencing of horns
- What is a Quiet Zone?
  - A section of a rail line that contains one or more consecutive public crossings at which locomotive horns are not routinely sounded.

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Part IV

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# Establishment of a Quiet Zone

- Public Authority Designation
  - Does not require application to and approval by FRA
  - Implement Supplementary Safety Measures (SSMs) at each public crossing
- Public Authority Application
  - If Quiet Zone does not meet the standards for public authority designation
  - Requires application to and approval by FRA
  - Proposed Quiet Zone may include only Alternative Safety Measures (ASMs) or a combination of ASMs and SSMs
  - Requires calculation of Quiet Zone Risk Index (QZRI)
    - < Nationwide Significant Risk Index (NSRI)
    - < Risk Index with Horns (RIWH)

# Quiet Zone Requirements

- Minimum Length – ½ mile along the Railroad right of way
- Active grade crossing warning devices
  - Crossing gate arms
  - Flashing lights
  - Bells
  - Constant warning circuitry
  - Power out indicators
- Advance warning signs for Quiet Zone



# Quiet Zone Requirements

- Supplementary Safety Measures (SSM)
  - Permanent closures
  - Temporary closures (nighttime 10 p.m.- 7 a.m.)



# Quiet Zone Requirements

- Supplementary Safety Measures (SSM)
  - One-way streets with full width gates



# Quiet Zone Requirements

- Supplementary Safety Measures (SSM)
  - Four-quadrant gates



# Quiet Zone Requirements

- Supplementary Safety Measures (SSM)
  - Raised medians or channelization devices
    - Extend 100' from gate arm, 60' minimum length if intersecting street is closer (Rocky Mt. Ave. @ UPRR)



# Wayside Horn

- Use of Wayside Horns
  - Authorized at any crossing with flashing lights and gates
  - Recognized as a 1:1 substitute for the train horn
  - Quieter but not totally quiet
  - Provides FRA approved sound level directed at vehicles

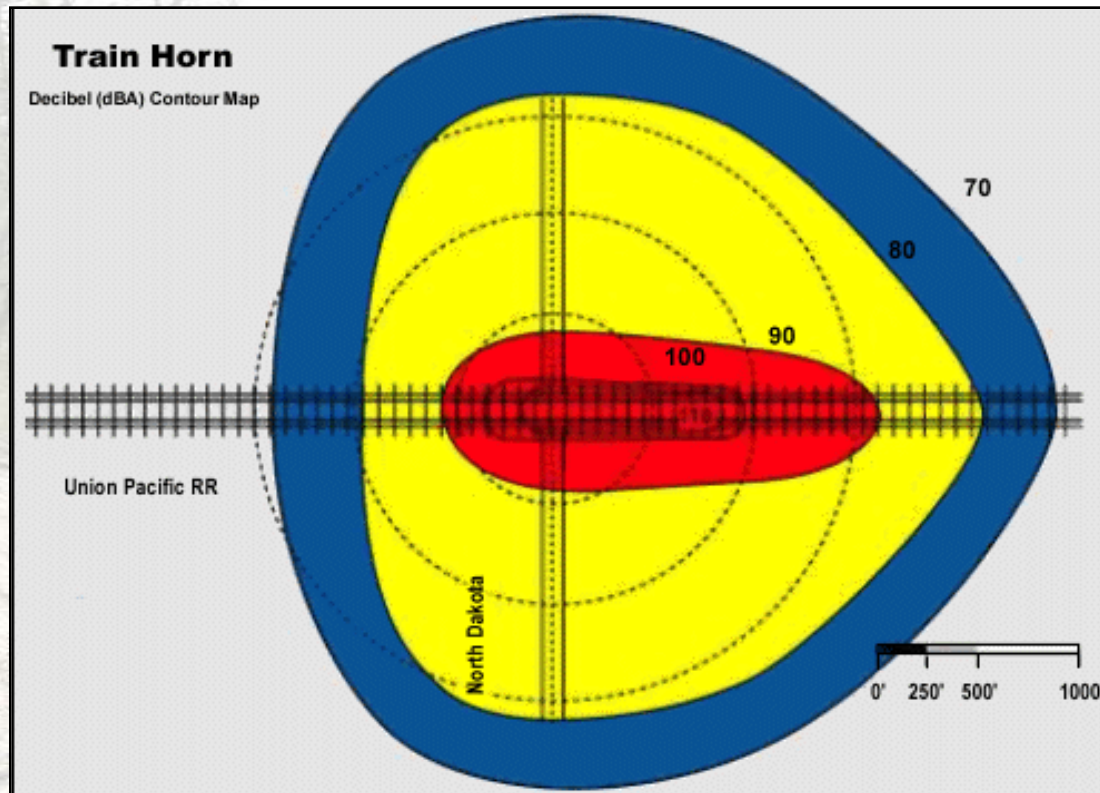


# Wayside Horn

- Considered when:
  - Closure is not feasible
  - Not enough distance to implement raised medians
  - One-way street is not a viable alternative
  - Cost of 4 quadrant gates is prohibitive
  - Affordable for the community

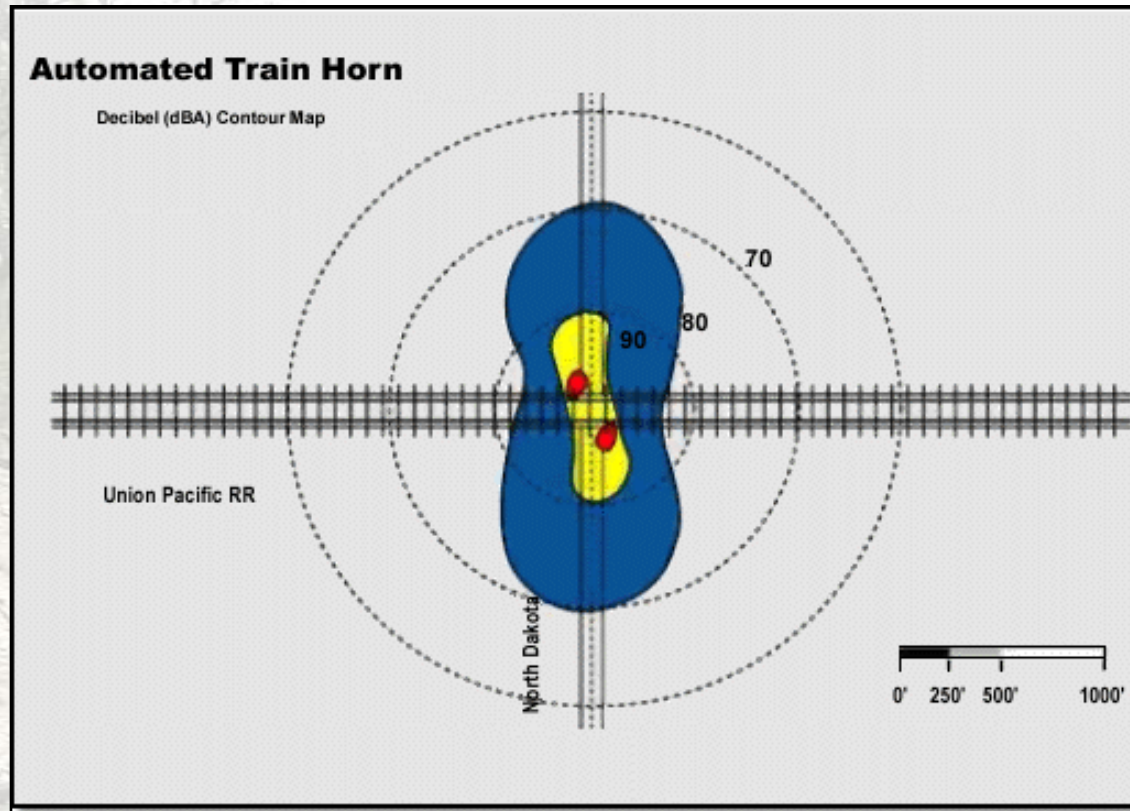


# Wayside Horn



Sound Level (dBA)	Other Typical Common Sounds
Blue >70	Diesel Truck at 100 feet
Yellow >80	Diesel Truck at 50 feet
Red >90	Lawn Mower at 3 feet

# Wayside Horn



Sound Level (dBA)	Train Horn Area (acres)	Wayside Horn Area (acres)	Percent Reduction
>70	265	37	86%
>80	171	5	97%
>90	31	<1	98%

# Typical Improvement Costs

Safety Improvement	Typical Construction Cost
Permanent/Temporary Closure	Varies
Convert to One-Way Street	Varies
Raised Medians	\$15,000 - \$65,000
Four-Quadrant Gates	\$300,000 - 500,000
Wayside Horns	\$120,000 - \$160,000

# Alternative Safety Measures

- Alternative Safety Measures
  - Active warning devices must be present
- Modified Supplementary Safety Measures
  - Not fully compliant with all of the SSM requirements
  - Provide an estimate of effectiveness or actual field data
  - Calculate Quiet Zone Risk Index
  - Requires review and approval from FRA
  - Treated as an Alternative Safety Measure (ASM)

# Alternative Safety Measures

- Non-Engineering Alternative Safety Measures (ASMs)
  - Programmed enforcement
  - Public education and awareness
  - Photo/ Video enforcement

# Alternative Safety Measures

## ■ Non-Engineering ASMs

- Requires application, review and approval from FRA
- Requires systematic and measurable monitoring
- Must be continued indefinitely- annual resource commitment
- Must demonstrate a significant reduction in gate violations
- Subject to audit at anytime by FRA
- Quiet Zone may be terminated if not effective or if QZRI falls above Nationwide Risk Index

# Alternative Safety Measures

- Engineering ASMs
  - Engineering Improvements
  - Address underlying geometric conditions that are the source of increased risk at the crossing
  - Follow similar evaluation and monitoring as other ASM's
  - If found effective FRA may treat as SSM in future

# Quiet Zone Evaluation

- Field review of existing crossings within the proposed Quiet Zone corridor
  - Identify grade crossing warning devices & circuitry
  - Determine average daily traffic and train counts
  - Compile collision history
- Conduct a Diagnostic Review
  - Includes Railroad, FRA, State (PUC) & Local Agency
  - Required for Quiet Zones with private or pedestrian crossings, but should be held for all Quiet Zones

# Quiet Zone Evaluation

- Determine the appropriate Quiet Zone treatments for each grade crossing
- Identify Basic Active Warning & Circuitry Upgrades
  - Significantly increases the cost of implementation
- Develop conceptual drawings and cost estimates
- Create report summarizing the study findings
- Treat Every Crossing with approved safety measures

# Key Quiet Zone Issues

- Process required to establish a Quiet Zone
  - Notice of Intent (60 days for comments)
  - Notice of Establishment (21 days notice)
- Liability Issues
  - Use of wayside horn requires railroad agreement requires liability insurance from municipality

# Funding Options

## ■ Funding Sources

- No state or federal funds are available for creation of quiet zones-can be used for other crossing safety improvements
- Railroads typically will not participate unless crossings are closed
- Local Funding options
  - General Funds
  - Sales Tax Revenues
  - Special Districts

# Implementation Schedule

- Required Notifications
  - **Notice of Intent** to create a quiet zone – 60 day review
  - **Notice of Quiet Zone Establishment** – 21 day notice
- Schedule
  - No railroad improvements (crossing or circuitry)
    - As soon as roadway improvements are in place and
    - Notifications have been submitted
  - Railroad signal and crossing improvements
    - Railroad Agreements – 6 months
    - Railroad engineering design – 6 months
    - Order and install equipment – 6 months
- Effective Quiet Zones
  - .25 miles in advance of crossings

# Now It's Your Turn!

- View Exhibits By Railroad Corridor
  - BNSF
  - UPRR
  - Great Western
- Ask Questions of Consultant Team and City Staff
- Provide Feedback
  - Written comments preferred on comment sheets
- Give Us Your General Ideas and Specific Priorities