GLENDALE RAILROAD SAFETY & QUIET ZONE COMMITTEE
Assumptions & Issues

August 22, 2007

Objective: Make recommendations on a Quiet Zone to the Mayor and Village Council by the end of 2007. A Quiet Zone is a corridor of railroad crossings in which train horns are not routinely sounded by trains approaching highway-rail grade crossings.

I. Community/Quality of Life

Assumptions:
A. Train horn noise was identified as a Quality of Life issue for Glendale in the 2000 Village Plan.
B. The Committee recommendations should be seen as valid for the foreseeable future rather than needing subsequent review in just a few years.
C. The Committee intends to make the Quiet Zone effort a unifying influence for the community rather than a potentially divisive issue. An initial draft of a strategy to achieve that result includes:
   1. Communicate openly and proactively
   2. What – Mission, goals, process, schedule, outcomes, “Bust the Myths”
   3. How – Forum for community concerns & input, identify and proactively work with special interests & thought leaders, communicate proactively
D. The FRA New Rule for the first time limits train horn volume 110 dB.
E. A Glendale resident alerted the Village Administrator about an article in the August 19 edition of USA Today newspaper concerning Quiet Zones.

Issues:
A. Develop decision criteria or principles for deciding among Quiet Zone options.
   1. Safety, Cost, Funding, Noise Level, Community Accessibility, Time to implement, Liability?
B. Identify Quality of Life issues listed in the 2000 Village Plan other than a Quiet Zone.
C. Has the train noise situation changed?
   1. What is the current number of trains daily versus the historic numbers? Future forecast? Current number is 64.
   2. What was the sound power of train horns in the past versus the current level?
   3. Did trains always sound horns and for how long at each crossing?
D. Develop a document suitable for communicating Committee activity with the public.

II. Background Info

Assumptions:
A. The Federal Railroad Administration website shows 264 Quiet Zones located throughout the country (report dated 2/6/2007)
   1. Pre-Rule/Pre-Rule Partial – 204 locations
   2. Intermediate Partial – 2 locations
   3. New Rule/New Rule Partial – 55 locations (TX-9, CA/MN-7, WI-5, IL-6, MO-4, CT/FL/IA/WA-2, AL/KY(Louisville)/MA/NJ/NM/OH(Moraine)/SC/UT/VA-1)
B. Initial contact has been made with several communities that have established Quiet Zones under the FRA Final Rule. Thus far all of the communities which have responded have used low-cost median barriers before crossing gates as their Supplementary Safety Measures. Nevada, IA has established a FRA New Rule Quiet Zone by installing median barriers at a cost of $6-10M.
C. Moraine has the only New Rule Quiet Zone in Ohio. The City Engineer, Mr. Charles Haught (chaught@moraineoh.org)(937-535-1000), reports their QZ was achieved at a cost of less than $20,000 and without using outside consultants. Highway median dividers were installed at the Vance Road crossing (Crossing No. 155059U). The control circuitry did not need upgrading, although Mr. Haught does not know the type of circuitry which was pre-existing. New Rule regulations require CWT, but the crossing information on the FRA website shows motion detection circuitry. The crossing inventory information shows a 24 hour QZ at Vance Road, so presumably there is a clerical error in the inventory information.
D. Wayside horn installations in North America are located in these communities (per Railroad Controls Limited): Alaska (Anchorage), California (Riverside & Roseville), Idaho (Boise), Illinois (Libertyville,
Mundelein & Vernon Hills), Iowa (Ames), Kansas (Parsons, Wichita), Missouri (Branson), Nebraska (Gering, Kearney), North Carolina (Rocky Mount), Texas (Austin, Richardson, Sugarland), Washington (Tacoma), Quebec (Chicoutimi)

III. QZ Regulations & Risk Index (http://www.fra.dot.gov/us/content/1318)

Assumptions:
A. Quiet Zone Establishment. A Quiet Zone must be at least 0.5 miles in length along the railroad tracks.
1. Designation by public authority (Public authority designation)
   a. Preferred method since FRA approval not required
   b. Each highway-rail crossing within QZ equipped with approved SSM or Wayside Horn
   c. Quiet Zone Risk Index (QZRI) Requirements
      1) QZRI < NSRT (National Significant Risk Threshold) (Current NSRT is 19,047)
      OR
      2) QZRI < RIWH (Risk Index With Horns) (Glendale QZ RIWH is 24,005)
2. Application by public authority (Public authority application)
   a. Requires approval by FRA. Likely to be a longer process than designation.
   b. If the Risk Index is less than twice the national average (19047 X 2 = 38094), then a Quiet Zone can be applied for.
   c. Can be used with ASM’s (Alternative Safety Measures)
      1) Modified SSM’s (example: shorter median than currently allowable)
      2) Non-engineering ASM’s (examples: education & enforcement efforts)
      3) Other engineering ASM’s (example: an engineering treatment not yet approved as SSM)
B. The Quiet Zone Calculator is a tool created by the Federal Railroad Administration to calculate the risk index for a proposed Quiet Zone corridor
C. FRA National Inventory: Glendale crossing data must be updated by the Ohio Public Utilities Commission (PUCO) who will forward the data to the FRA. Councilwoman Debbie Grueninger will continue as the contact person with Leah Dalton of PUCO.
   1. In April PUCO informed the FRA about the error in listing the Oak crossing as closed.
   2. In April PUCO forwarded the following vehicle count information to the FRA. The vehicle count data was collected by engineering firm SDS and forwarded by their manager John Pagano to Leah Dalton.
      a. CDS email of 4/26/07 says 10,933 vehicles/day on Sharon (2006 count), 1309/day at Albion (2006 count) and 1050 vehicles/day at Oak (2001 count).
      b. For reference, an earlier CDS letter of 11/13/06 says 2000/01 survey recorded 10,477 vehicles/day on Sharon, 808/day at Albion and 1037/day at Oak.
   3. In mid-July Debbie Grueninger arranged for the County Engineer to send a drawing to PUCO which shows there are only three lanes of traffic at the Sharon Avenue crossing, not the four that are shown in the FRA inventory.
   4. PUCO gets information annually on the number of school buses using each crossing directly from school districts.
   5. PUCO also gets information annually on daily train traffic at each crossing directly from the railroads.
D. Per FRA rules, all crossings within a Quiet Zone are not required to have the same level of safety protection. The average value of all the crossings within the Zone must meet the required target index.
E. A Diagnostic Team will need to be convened to determine safety measures for the pedestrian crossing.
F. Updating of the FRA Nation Inventory Risk Calculator may take several months for the correct current information to be entered. In the meantime Rachel Schmid has developed a spreadsheet which is believed to be an accurate but unofficial simulation of the FRA calculator. Using the spreadsheet model shows there are a number of combinations of SSM’s at the three Glendale crossings which would have an average Risk Index less than the current Risk Index With Horns. Except for the most expensive option of installing quad gates at all three crossings, the other options require some combination wayside horns, operating Albion with existing safety equipment and no train horns, and closing the Albion crossing.
IV. Supplementary Safety Measures (SSMs)

Assumptions:
A. Four-Quadrant Gate System (with or without vehicle detection) (Effectiveness rate is ?)
   1. If funding were available, the QZ Committee would unanimously prefer to see Quad Gates installed at all three Glendale crossings.
B. Gates with Medians or Channelization Devices (Effectiveness rate is 0.75)
   1. Medians at the Sharon Road crossing are deemed possible, but would have a serious negative impact on access to Village Square, access to the Village Square parking lot east of the tracks, and access to North Greenville. In addition the entrance to North Troy would need to be relocated roughly 20 feet further east on Sharon Road.
   2. Medians at Albion and Oak are deemed impossible because the medians would completely block north/south traffic on Greenville and Troy at the crossings.
C. One Way Street with Gate(s) (Effectiveness rate is 0.82)
   1. Judged not likely to be possible because a one-way approach at Oak or Albion would be too short to be effective as a safety measure. Sharon Road as one way is unfeasible.
D. Permanent Closures (Effectiveness rate is 1.0)
   1. Water mains on Greenville have been enlarged so that in the event of fire it should not be necessary to drag hoses across the tracks from Troy to Greenville at the Albion crossing.
E. Temporary Closures (Effectiveness rate is 1.0)
F. Wayside Horn
   1. Wayside Horn is considered by the FRA to be a one-for-one substitute for the train horn
   2. Wayside Horn can be used within or outside of a Quiet Zone
   3. Wayside Horn is the simplest way to reduce train noise since a Quiet Zone is not required.
G. The FRA Final rule requires the use of Constant Warning Time circuitry with SSM’s.

Issues:
A. Ohio requires Quad Gate installations to be equipped with vehicle detection systems, but the FRA Risk Calculator assigns 5% less effectiveness to quad gates with vehicle detection than to quad gates without vehicle detection. Why is there a difference in perceived safety level between Ohio and the FRA? (This 5% difference for quad gates at Sharon could significantly affect the Glendale QZ Risk index for the average of three crossings.)
B. What is the logic of how vehicle detection circuitry controls the operation of entrance and exit gates at Quad Gate installations? Is there separate detection circuitry before the entrance gate, on the tracks between the entrance and departure gates, and after the departure gates?
C. Develop a program to investigate the noise profile of Wayside Horns versus current train horns. (Oliver Debikey)
D. A Wayside Horn evaluation for Mundelein, IL in 2003 stated that the wayside horn had a significant impact on the quality-of-life in areas near the crossings. At the highest decibel levels, the wayside horn covered 85% less land area than the train-mounted horns. On the other hand, some persons were affected more than before. Some of this occurred because the pattern of the sound dispersion changed. Volume levels were elongated along the roadway so that some persons heard a louder horn than before. More importantly, because the horns were of constant volume and lasted longer than the train horn, this increased their apparent loudness.

V. Funding

Assumptions:
A. Federal Crossing Upgrade Program. The PUCO, in partnership with the Ohio Rail Development Commission (ORDC) selects Ohio highway-railroad crossing for federally-funded upgrades based on a priority list that ranks the crossing in order of risk of accident. (ORDC website)
B. State Crossing Upgrade Program. For crossings not eligible under the federal program, the state funded Grade Crossing Upgrade Program allows the cost of a project to be shared between the local community, the state of Ohio, and the railroad involved. The PUCO will allocate funds based on an
objective formula measuring both the seriousness of the hazard and other special conditions at the crossing. (ORDC website)

E. Ohio House Bill 247 establishes a pilot program for railroad quiet zones in a specified area of northeastern Ohio. (State Rep Jim Raussen letter dated 11/14/03). This Bill was enacted by the Legislature, but provides no funding. In fact, the reverse. (Provided by Mr. Bruce Abel)
1. Sec. 4955.46 D) “.....the railroad is not required to pay any of the additional costs associated with the installation or maintenance of any protective device installed thereafter at the railroad grade crossing due to the creation of the Quiet Zone.”
2. Sec. 4955.46 E) “Except as provided in Division (F) of this section, no money appropriated by the General Assembly to pay the costs of measures taken to increase the safety of the traveling public at a public railroad grade crossing shall be diverted from such use after the effective date of this section to pay any of the costs associated with the establishment of a railroad Quiet Zone, including money in the grade crossing protection fund created by section 4907.472 of the revised code.”
3. Sec. 4955.46 F) “State grade crossing safety funds may be used to pay part of the costs of additional safety improvements required to establish a railroad Quiet Zone when the municipal corporation or township establishing the Quiet Zone complies with sections 4955.41 to 4955.47 of the revised code if either of the following circumstances exist:”
   a. “The municipal corporation or township CLOSES A PUBLIC GRADE CROSSING in the same railroad corridor as the railroad Quiet Zone.”
   b. “The DOT has selected the municipal corporation or township as a participant in the grade separation program along the same railroad corridor as the railroad Quiet Zone.”
4. Sec. 4955.46 G) “No political subdivision of the state may use state funds of any kind to assist in the planning, construction, development, operation, or maintenance of a railroad quiet zone unless the political subdivision acts in accordance with sections 4955.41 to 4955.47 of the revised code.”

F. ORDC has offered payment to Glendale to close the Albion crossing.

G. Per Leah Dalton, Ohio Public Utilities Commission, although Ohio circuitry upgrade programs in the past have installed motion detection circuitry at a limited number of Ohio crossings as a safety measure, no programs are in the foreseeable future which would fund the upgrade of existing motion detection circuitry to Constant Warning Time circuitry.

H. A report prepared by consultant firm R.L. Banks & Associates for Kingston, NY states that “federal and state funding... is generally not available for implementation of Quiet Zones. On the other hand, the thousands of projects which received “earmarks” in the SAFETEA-LU (Act), which became law in August 2005, included .. at least one Quiet Zone. Other than crossing closures, funding of SSMs likely will be a local responsibility with the potential of earmarks in the next federal surface transportation authorization (expected in 2009).”

Issues:
A. Investigate funding possibilities for a Glendale Quiet Zone. (John Earls)
   1. Impact fees from Erricson development of Landmark property
   2. Village of Glendale funding
      d. Operating Fund. Funded by real estate taxes
      e. Enterprise Fund. Funded by utility fees. Fund used only for utility costs.
   3. Ohio or Federal Safety programs
      a. Are Glendale crossings likely to qualify for improvements based on safety? Where are Glendale crossings ranked on the Ohio Crossing Upgrade Program? Leah Dalton of PUCO has said she will provide the ranking of Glendale crossings under the channel of a public information request.
   4. Procter Fund
   5. National Historic Landmark District Grants: The Glendale Historic District is one of not more than ten or twenty Landmark Districts in the entire country which are currently inhabited and used by residents. It is living history. Could this unusual distinction be leveraged for grants or funding for Quiet Zone SSMs?
   6. Local voluntary fund raising (similar to “People’s Pumper” fire engine)
   7. Spreading capital cost of SSMs over a 10 or 20 year period via financing.
VI. Cost

Assumptions:

Issues:
A. RCL uses a budget cost of $300,000 to 400,000 for a four quadrant gate installation without a CWT circuitry upgrade. However a 2003-12-11 FRA document lists a cost of $100,000 to install 2 additional gates at a crossing already equipped with two-quadrant gates. What’s correct?
B. RCL uses a budget cost of $100,000 for constant warning time and power out circuits but a 2003-12-11 FRA document lists $40,000. What’s correct?
C. It appears CSX, RCL and CDS will require pay as you go reimbursement for Committee support.

VII. Liability

Assumptions:
A. Michael Honerlaw, the Glendale Solicitor, has provided a letter dated July 12, 2007 to the QZ Committee stating that under current Ohio law there would be no liability for Glendale if the Village would legislatively permit a railroad Quiet Zone. The Solicitor believes that several sections of the Ohio Revised Code would provide a defense should a lawsuit ever be filed against the Village claiming liability for establishing and maintaining a railroad Quiet Zone. Further, given the current makeup of the Ohio Supreme Court, the Solicitor believes that it is very unlikely that any significant changes would be made to reduce the defenses and immunities that are available to political subdivisions in situations such as this.
B. This opinion is reinforced by the fact that the community of Moraine, OH has already established a Quiet Zone under the FRA New Rule and the community of Rocky River, OH is actively pursuing a Quiet Zone under the FRA New Rule.

Issues:
1. Given the importance of the liability issue, it may be prudent for the Village Solicitor to request a confirming letter on Quiet Zone liability from the Ohio Attorney General before Quiet Zone legislation is approved by the Village Council.

VIII. CSX Transportation

Assumptions:
A. Quiet Zone contact is Mr. Cliff Stayton, Director of Public Safety, Jacksonville, FL (Cliff_Stayton@CSX.com)
B. Comments from 8/7/07 phone call between CSX (Cliff Stayton) and Dan Raabe
1. CSX believes the safest crossing is when the trains sound the horn.
2. With that said, CSX requires Quiet Zones to follow the letter of the law and they have taken some Quiet Zones away.
3. CSX recommends that the Quiet Zone be designed for future increased traffic.
4. Constant Warning Time circuits are required and they may need interconnects with all three crossings and a maintenance agreement with CSX.
5. CSX would offer cash incentives for closing crossings.
6. CSX will participate in a diagnostic review of our community crossings (free of charge) This is usually the first step. Could have representatives of FRA & ODOT.
7. Preliminary engineering agreements (PE) would cost $10-25,000 per crossing.
8. If SSM’s are installed at Glendale crossings, CSX will make the determination of which engineering and construction contractors to use even though Glendale will pay the costs.
9. If SSM’s such as highway medians are to be installed outside the CSX right-of-way, CSX will not perform this work. The local government must contract it.
10. Mr. Stayton would be glad to conference call with us to discuss further. He would like an email copy of our questions before the call.
11. Allow 24-30 months from the time of the diagnostic review until the end of construction.
12. The state authority should file for “Notice of intent”.

C. CSX Regional Director of Construction for Cincinnati area is Mr. Dave Fette

**Issues:**

A. Arrange for a conference call between the CSX railroad and the QZ Committee (Dan Raabe)

B. **CSX has told ORDC that all Glendale crossings have motion detection circuitry, but the FRA Crossing Inventory shows CWT circuitry at Sharon Road. What’s correct?** Note also the circuitry discrepancy at the CSX Vance Road crossing in the Moraine, OH Quiet Zone.

**B.** Over time the Albion crossing seems to be elevated higher and higher above the approach roads due to improvements in the rail bed. Might the steep approach angle cause the crossing to be closed within the foreseeable future?

**IX. Organization/Roles/Resources**

**Assumptions:**

A. The Mayor Ray Terrell of Woodlawn has designated Woodlawn Councilman Willie Norton to represent Woodlawn on the QZ Committee.

B. Glendale is located in FRA Zone 2. Our contact is Evelyn Hendricks in Crumline, PA.

**Issues:**

A. **Who are the consultants or resources the Committee could use?**
   1. RCL – Railroad Controls Limited
   2. SRF Consulting Group – Minneapolis
   3. Peterman Associates – Findlay, OH
   4. R. L. Banks, D.C. & San Francisco
   5. Short Elliot Henderson
   6. BDS Engineering, St. Paul, MN
   7. BDS Associates

B. What suppliers in addition to Railroad Controls Limited provide rail crossing safety equipment?
   1. Hanson-Wilson, Kansas City, MO
   2. Dan Raabe has contacted the CSX Regional Director of Construction to get a list of approved suppliers that CSX will allow for SSMs and ASMs.