Blow Horns, No More: Establishing Railroad Quiet Zones

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Many North Carolinians have fond memories of railroads and trains being a centerpiece of local downtown activity. Not only are trains effective transportation instruments, but also can be an identity for some communities. The railroad tracks are often located in the epicenter of cities, and history reveals that some towns were even built *around* the railroad's path. Unfortunately, not all residents have a favorable view of railroads running through their cities and towns. For example, consider the number of families housed near railroad crossings that wake-up multiple times at night because train horns are blown at railroad crossings. Some municipalities have begun instituting "quiet zones" at railroad intersections. This blog post will explore the process of establishing these quiet zones and offer some useful past and on-going examples.

Establishing Quiets Zones

Federal regulations require that "… locomotive horns begin sounding 15–20 seconds before entering public highway?rail grade crossings, no more than one?quarter mile in advance." Likewise, the "the Federal Railroad Administration (FRA) is committed to reducing the number of collisions at highway?rail grade crossings, while establishing a consistent standard for communities who opt to preserve or enhance quality of life for their residents by establishing quiet zones within which routine use of train horns at crossings is prohibited." The definition of a quiet zone as defined by FRA is:

"A section of a rail line at least one?half mile in length that contains one or more consecutive public highway?rail grade crossings at which locomotive horns are not routinely sounded when trains are approaching the crossings. The prohibited use of train horns at quiet zones only applies to trains

when approaching and entering crossings and does not include train horn use within passenger stations or rail yards. Train horns may be sounded in emergency situations or to comply with other railroad or FRA rules even within a quiet zone. Quiet zone regulations also do not eliminate the use of locomotive bells at crossings. Therefore, a more appropriate description of a designated quiet zone would be a 'reduced train horn area.'"

Union Pacific notes that there are two types of quiet zones: (1) a **partial quiet zone** from 10:00pm to 7:00am, and (2) a **full quiet zone** that is 24-hours per day and seven days per week. Based on the federal regulations, some requirements for a quiet zone are that:

1. The Quiet Zone Risk Index (QZRI) is less than or equal to the Nationwide Significant Risk Threshold (NSRT) with or without additional safety measures such as Supplementary Safety Measures (SSMs) or Alternative Safety Measures (ASMs) described below. The QZRI is the average risk for all public highway?rail crossings in the quiet zone, including the additional risk for absence of train horns and any reduction in risk due to the risk mitigation measures. The NSRT is the level of risk calculated annually by averaging the risk at all of the Nation's public highway?rail grade crossings equipped with flashing lights and gates where train horns are routinely sounded.
2. The Quiet Zone Risk Index (QZRI) is less than or equal to the Risk Index With Horns (RIWH) with additional safety measures such as SSMs or ASMs. The RIWH is the average risk for all public highway?rail crossings in the proposed quiet zone when loco? motive horns are routinely sounded.
3. SSMs installed at every public highway?rail crossing. This is the best method to reduce to reduce risks in a proposed quiet zone and to enhance safety.

As mentioned in requirement #3, SSM's and ASM's are pre-approved risk reduction engineering treatments that include: medians or channelization devices, one?way streets with gates, four quadrant gate systems, and temporary or permanent crossing closures. Information worth noting is that costs can vary from $30,000 to $1 million per crossing. Additionally, there are potential legal implications surrounding whether the town or railroad company is liable *if* a collision occurs (depending on the level of safety enhancements installed by the city or town).

As a helpful guideline, the FRA's quiet zone process entails:

- Determining which crossings will be included.
- Identifying any private highway-rail grade crossings (Reviewed by Diagnostic Team).
- Identifying any pedestrian crossings (Reviewed by Diagnostic Team).
- Updating the US DOT Crossing Inventory Form
- Providing a Notice of Intent (NOI) – 60-day comment period.
- Using Alternative Safety Measures (ASMs) – if used, an application to FRA is required.
- Determining how the QZ will be established (One of 3 conditions).
- Completing the installation of SSMs and ASMs.

- Ensuring that the required signs are installed.
- Providing a Notice of QZ Establishment – effective date no earlier than 21 days after notice is mailed.

Useful Examples

In Kannapolis, NC, train horns have now become a prominent issue at night for residents. Often, it's normal to hear the train horns because of the frequency of Norfolk Southern and Amtrak passing through town, and in 2014, the city council appropriated funds for four crossings. The city is officially applying for a quiet zone with an application fee of $2,500 and an annual maintenance fee of $15,200. Another example, in March of 2016, Salisbury's (NC) city council established three quiet zones throughout the city. Contrasting Kannapolis, this proposal was met by local resistance. The opposition to the quiet zones believed that the train horns were important for public safety, and that alleviating one incident is worth the value of keeping the horn. In other cases, towns are spending large sums to install crossing safety measures. Rock Hill, SC, approved $8 million in project funding to install safety measures and the relocation of one rail-line. Within the past year, South Carolina's capital city, Columbia, decided to pay for a noise study and install safety measures in order to qualify for a quiet zone. Estimated as running six miles through the city, the rail-line has affected the quality of some residents' lives. It's estimated that train blow horn noises affect approximately 25,000 residents in the city. As an example, a nearby well-known and moderately-priced hotel gives it's complaining customers free earplugs and has had problems with issuing refunds. Ultimately, with system installation costs as high as a million dollars, the city –not surprisingly– reassessed the initial project and decided that costs were far too high to continue the quiet zone process.

Again, each municipality weighs the importance of safety and quality of life when considering the establishment of quiet zones. Communities vary in their views, and officials may need to assess their community's value of implementing an expensive system before furthering the quiet zone process. That said, some residents and business owners believe that ear plugs can only fix the problem for so long. Even still, municipalities are continuing to uphold the stance that trains are an integral part of their long-term vision and that blow horns are here to stay.

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