




Memorandum

Date: February 22, 2022
To: Mayor and Council Members
From: Michael Rogers, City Manager 
Via: William Dean, Interim Development Services Director
CC: Robert Armijo, P.E., City Engineer
Anju Pillai, P.E., Senior Civil Engineer
Subject: Quiet Zones in Railroad Sections

The purpose of this memorandum is to provide to the City Council an overview of the establishment of quiet zones in railroad sections.

Background

Trains sound their horns to warn motorists and pedestrians that a train is coming. The Federal Railroad Administration (FRA) has very specific requirements as to when, where, how long and how loud a train must sound its horn in railroads. The FRA Train Horn Rule (49 CFR 222) requires the engineer to sound the horn under various circumstances including when a train is approaching and passing through a public highway-rail grade crossing. According to FRA rules, train horns must:

- be within 96 and 110 decibels
- be sounded at least 15 seconds but no more than 20 seconds before reaching a crossing
- be sounded no more than a quarter of a mile from a crossing if the train is traveling faster than 60 mph
- be sounded approaching persons on or near the track

Quiet Zones

The FRA, while committed to reducing the number of collisions at highway-rail grade crossings, has established 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 are prohibited.

A quiet zone 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.

Additional Important Consideration:

It should be noted that establishing a quiet zone does not preclude sounding of horns by the train crews in emergency situations or for other safety measures to comply with FRA rules. 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.”

Establishing Quiet Zones

Under the Train Horn Rule, only public authorities are permitted to establish quiet zones. Only a public agency may request a quiet zone and initiate the establishment process. The FRA has outlined a set of guidelines to establish a quiet zone.

FRA strongly recommends that all crossings in the quiet zone be reviewed by a diagnostic team. A diagnostic team typically consists of representatives from the public authority, railroad, and State agency responsible for crossing safety and FRA grade crossing managers.

Safety Measures

Because the absence of routine horn sounding increases the risk of a crossing collision, a public authority that desires to establish a quiet zone usually will be required to mitigate this additional risk by providing at a minimum, active warning device like flashing lights, gates, constant warning train detection systems and power out indicators.

To create a quiet zone, a rating criterion called the Quiet Zone Risk Index (QZRI) will be considered along with the installation of Supplementary Safety Measures (SSMs) or Alternative Safety Measures (ASMs). SSMs include medians or channelization devices, one-way streets with gates, four quadrant gate systems, and temporary or permanent crossing closures.

ASMs are safety systems, other than SSMs, that are used to reduce risk in a quiet zone. ASMs typically are improvements that do not fully meet the requirements to be SSMs and their risk reduction effectiveness must be submitted in writing and approved by FRA.

Cost Considerations

Public authorities seeking to establish quiet zones should be prepared to finance the installation of SSMs and ASMs used. Costs can vary from \$30,000 per crossing to more than \$1 million (according to the FRA's *Guide to the Quiet Zone Establishment Process – An Information Guide*) depending on the number of crossings and the types of safety improvements required.