

Noise and the Gold Line: Frequently Asked Questions

What will create noise on the Gold Line?

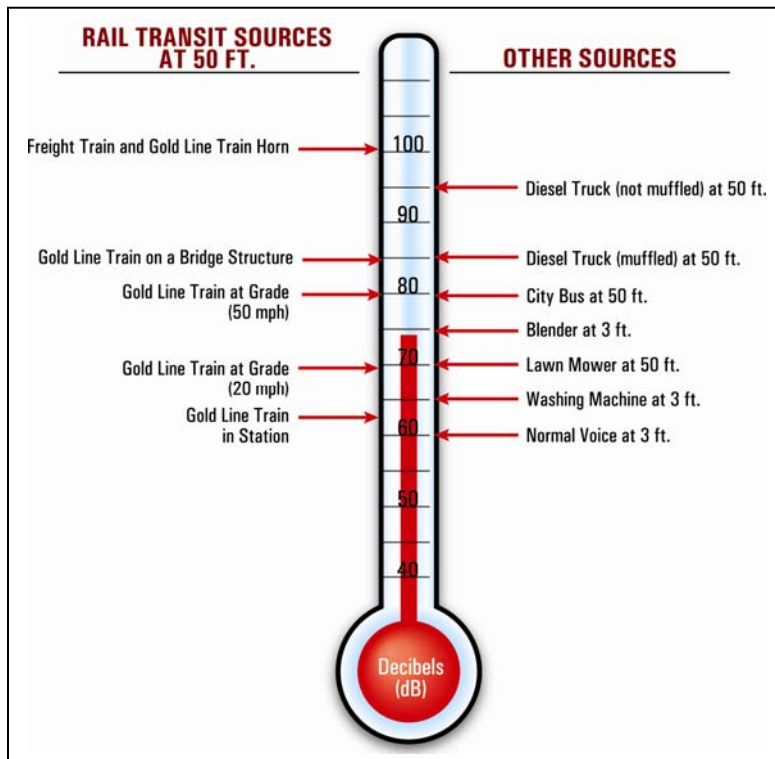
Train horns, wheel-rail interaction and vehicle cooling fans all contribute to train noise, although the horns typically cause the most significant noise impacts.

Why are train horns necessary?

Federal Railroad Administration (FRA) safety standards require trains to sound their horns at 110 decibels as they approach every railroad crossing. Additionally, horns must be sounded 15-20 seconds before the train reaches a crossing, but not beyond a quarter of a mile away.

How does RTD analyze noise impacts?

During their environmental analysis, the Gold Line team took existing noise measurements throughout the corridor, at proposed station areas and at other potentially sensitive locations (e.g. schools, hospitals, etc.). They then identified how much additional noise would be created by the project. The difference between existing noise levels and added noise levels allows RTD to determine whether the project's impacts are mild, moderate or severe. RTD used adopted Federal Transit Administration (FTA) guidance regarding how to assess noise impacts from transit projects.



How will the study determine whether noise is mild, moderate or severe?

FTA has specific criteria to determine whether a transit project's noise impacts are considered mild, moderate or severe. The degree of impact is based on comparing the predicted noise from the project with the existing (baseline) noise levels at sensitive locations.

Are the noise measurements taken several times or are they a one-time measurement?

In residential areas, noise is typically measured and assessed over a full 24-hour period at representative locations. At locations with primarily daytime use (e.g. schools, businesses, churches, and parks), noise is typically measured and assessed over a one-hour period during the day.

Do the noise measurements take land contours into account?

Yes. The noise analysis accounts for the elevations of the source (trains) and receiver (homes, businesses, etc.), as well as the ground in between. These factors affect sound transmission, resulting in greater noise levels where the sound travels in an unobstructed path high above the ground and in lower noise levels where the sound path is shielded by intervening structures or topography.

How will RTD mitigate noise impacts on the Gold Line?

The Gold Line Team will develop avoidance, minimization and/or mitigation measures for severe, and in some cases moderate, noise impacts. Because noise mitigation is very site-specific, not every situation will result in the same standard recommended mitigation measure. Recommended noise mitigation measures for the Gold Line may include establishing Quiet Zones, altering the track design to reduce sounds from wheel-rail interaction, relocating or changing the direction of train horns or installing horns at the crossings instead of on the trains themselves (called wayside horns).

What is a Quiet Zone?

Quiet Zones are segments of railroad lines where train crews (for both freight and commuter rail trains) are exempt from sounding their horn at grade crossings. All train crossings within the Quiet Zone must meet certain safety criteria in order to qualify for a Federal Railroad Administration (FRA) Quiet Zone designation. It should be noted that train crews are still permitted to sound the horn within a Quiet Zone for railroad or safety reasons.

How much would noise impacts be minimized with the implementation of a Quiet Zone?

Not only would a Quiet Zone eliminate the project's moderate and severe noise impacts, but noise levels in the Gold Line corridor would actually be less than they are today – even with the addition of the project.

What is needed to qualify for a Quiet Zone?

To establish a Quiet Zone, all crossings must have physical safety improvements that compensate for the loss of the train horn as a warning device. In other words, the safety at railroad crossings must meet the level at which the FRA will no longer require trains to sound their horns. For this reason, all crossings must have – at a minimum – advance warning devices with both flashing lights and crossing gates. Additional safety measures may be required, which are determined during an on-site analysis of each crossing.

What is RTD doing to help sections of the Gold Line qualify for Quiet Zone status?

In October 2007, the RTD Board adopted the *Responsible Rail Amendment*, which calls for RTD to work with railroads and local communities to address noise concerns. The amendment states that RTD will assist the communities in the Quiet Zone application process. That assistance has included developing inventories, reviews and cost estimates for all railroad crossings along the Gold Line, coordinating safety meetings with the regulatory agencies who will make the decisions about Quiet Zones and working with local communities to determine a Quiet Zone implementation approach for each individual crossing. However it's important to note that federal regulation requires that the cities and counties file the Quiet Zone application. While RTD may assist in the process, it cannot submit the application.

How much does it cost to implement the safety measures required for Quiet Zones?

The cost to meet the minimum safety requirements of a Quiet Zone depends on the existing infrastructure at each crossing and what infrastructure improvements are needed. The average cost to upgrade a crossing without any existing Quiet Zone requirements can range from \$300,000 to \$500,000. However, because each crossing is unique, the total cost to implement a Quiet Zone will vary.

What is a Wayside Horn?

A wayside horn is another alternative to a train-mounted horn. Wayside horns are mounted at a railroad crossing, rather than to the train itself, and focus noise toward approaching vehicles and nearby pedestrians. This type of mitigation limits the amount of noise exposure for noise-sensitive areas along the tracks and near crossings where trains sound their horns.



A Wayside Horn