

## Train Whistle Reduction

### Background

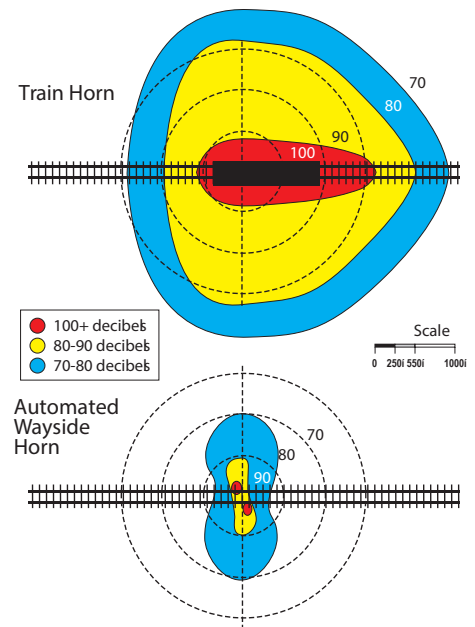
Federal regulations and Alaska Railroad rules require trains to sound their horns when approaching an at-grade road crossing (road and rail are at the same level) and to continue sounding the horn until the crossing is reached. In June 2005, the Federal Railroad Administration (FRA) began enforcing a new rule requiring train locomotive engineers to sound the horn at least 15-20 seconds before the crossing and to continue sounding the horn until the train reaches the crossing. Given significant consequences for not complying (monetary fines to the railroad and suspension of train crews), train engineers have no choice but to blow the horn as required – day and night.

Anticipating potentially greater noise disruption to rail-belt communities, ARRC began testing whistle noise reduction systems at two crossings in Anchorage in 2004. This technology is used in other locations in the United States to reduce noise from the train horn/whistle.

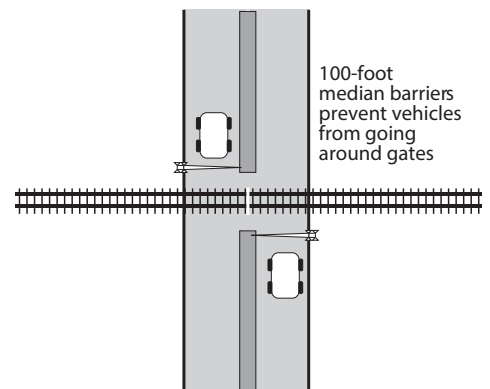
At one test site a stationary automated horn system was installed. When this system senses an approaching train, it sounds a whistle-like warning that is aimed perpendicular to the track, down the road toward oncoming highway traffic. The system uses two stationary horns mounted at the crossing, instead of on the train. By directing the noise into the street, instead of the surrounding area, noise is more focused and less disruptive to the surrounding community.

At the other test site, median barriers were erected down the middle of the street for about 100 feet on either side of the track. Crossing gates close against the median, thereby preventing vehicles from getting around the gates and onto the track. This system eliminates the need for trains to sound their horns for the crossing, making it a good choice for residential areas.

With either of these systems in place, train engineers do not need to sound the train horn/whistle when approaching the crossing. However, an engineer may need to blow the whistle when in the area for other reasons. For example, if the engineer sees a person or animal on the track, he/she would sound the horn as a warning to clear the tracks.



**Figure 1. Wayside Horn Comparison.** Federal regulations and ARRC rules require horns to generate at least 96 decibels at 100 feet. A study conducted in Mundelein, Illinois, by the Northwestern University Center for Public Safety, showed the automated horn reduced noise by 85% compared to train-mounted horns.



**Figure 2. Median Barrier.** Eliminates horn requirement.

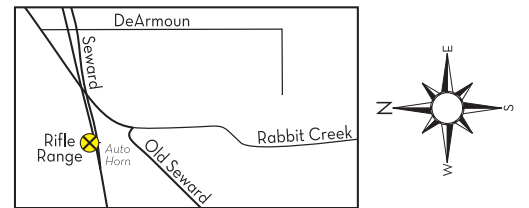
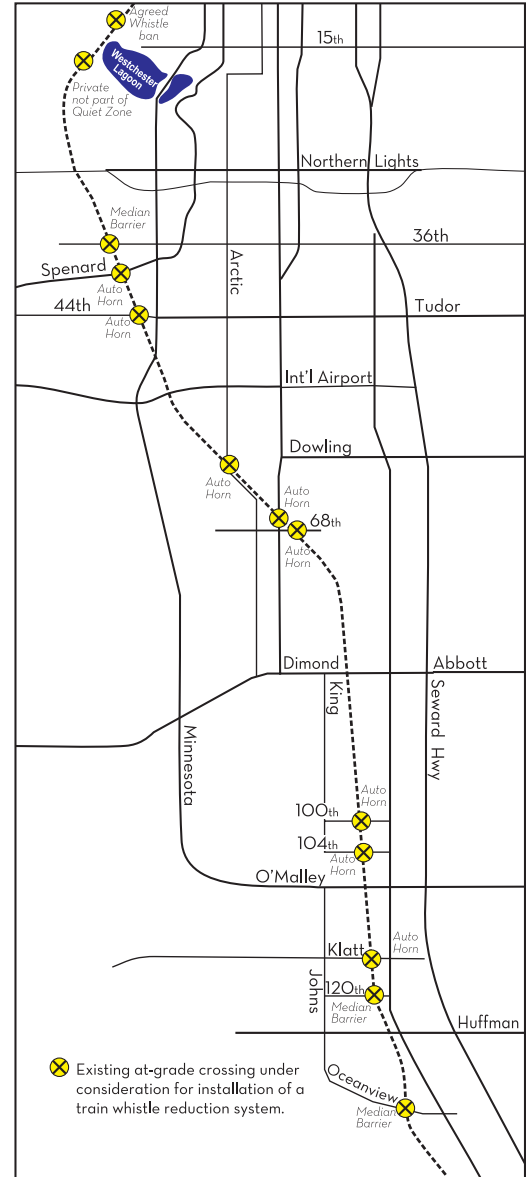
## Status

- 2004:** ARRC coordinated with state and municipal officials regarding whistle reduction system installation at test sites in Anchorage: 1) an automated horn system at Klatt Road crossing, and 2) median barriers at 36th Avenue crossing. ARRC conducted noise studies at the Klatt test site to compare noise levels between typical street noise, locomotive horn whistle and wayside horn whistle. Similar data was obtained for the 36th Avenue crossing. ARRC monitored the test sites for equipment capability and reliability.
- 2005:** Anchorage obtained federal dollars to help create a citywide Quiet Zone, by installing noise reduction systems at most of the 10 remaining at-grade crossings. The railroad continues to work in concert with Municipality of Anchorage (MOA) and State Department of Transportation & Public Facilities (ADOT&PF) traffic engineers to determine the best systems to install within the constraints of available funding.
- 2006-2007:** median barriers and automated horns installed at public at-grade crossings (two private crossings were not eligible) through Anchorage (see map at right).
- 2017-2019:** ARRC is coordinating with FRA, MOA, ADOT&PF, Alaska Dept. of Fish & Game, and the Rabbit Creek community to consider wayside horns as a whistle reduction measure for the crossing at Rabbit Creek Rifle Range (ARRC Milepost 102.9).

## Project Costs & Funding

The initial 2004 test budget was \$221,300, funded by the FRA. The FRA granted an additional \$994,100 in 2005 to establish a Quiet Zone between the Anchorage Rail Yard and Oceanview Drive.

Railbelt communities statewide may determine local crossings that warrant installation of whistle noise reduction systems. Nationwide, these projects are typically pursued at the request of the community, with funding coming from municipal, borough, state and federal sources. Citizens interested in creating a Quiet Zone should first contact their local government transportation and community planning agencies with a request that they fund, or seek funding for, train whistle noise reduction systems.



Automated wayside horns at Klatt Road crossing.



Median barriers at Oceanview crossing.