



# CITY OF SAN MATEO

City Hall  
330 W. 20th Avenue  
San Mateo CA 94403  
[www.cityofsanmateo.org](http://www.cityofsanmateo.org)

## Agenda Report

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**TO:** City Council  
**FROM:** Drew Corbett, City Manager  
**PREPARED BY:** Public Works Department  
**MEETING DATE:** January 06, 2020

**SUBJECT:**  
Train Horn Noise Progress Update

**RECOMMENDATION:**  
Receive a status update on efforts to minimize train horn noise impacts.

**BACKGROUND:**  
Noise generated by train horns along the Caltrain rail corridor has been a concern to San Mateo residents for some time and a cause of frequent resident complaints. The Federal Railroad Administration (FRA) regulations require trains to sound horns when approaching an at-grade crossing, construction zones, and when trespassers are seen in the right of way. San Mateo currently has nine at-grade crossings, and the 25th Ave Grade Separation Project will eliminate one existing at-grade crossing upon completion, which is currently expected to be early 2021.

In 2009, the City requested that rail operators reduce train horn volumes when passing through San Mateo. In response, Caltrain relocated their horns beneath their trains to reduce the range of sound, but Union Pacific stated they could not make the same modification because their trains may be used in other regions with different sound requirements. In 2013, the Public Works Department retained a consultant to perform a train horn noise assessment, which concluded that the sounding of train horns generally complies with applicable federal regulations.

Regulations governing the sounding of train horns are established in the Code of Federal Regulations, Title 49, Part 222, titled "Use of Locomotive Horns at Public Highway-Rail Grade Crossings," also known as the "Train Horn Rule." The Train Horn Rule includes allowance for an exception to the requirements for sounding train horns when safety measures fully compensate for the absence of the warning provided by the train horn. Communities that qualify for this exception may create "quiet zones" where train horns would not be routinely sounded by demonstrating that silencing train horns does not present a significant risk of loss of life or serious injury.

Staff investigated the possibility of establishing a quiet zone within San Mateo city limits. Information on possible approaches for pursuing a quiet zone was presented to City Council in August 2018. The general approach to achieving a quiet zone is to reduce risk to less than the national average or to less than the risk that would be anticipated with train horns routinely sounded. There are three main criteria used in establishing a quiet zone.

- A Quiet Zone Risk Index (QZRI) is a calculation of aggregate risk of collision and is used to compare anticipated risk under different conditions and scenarios.
- The Nationwide Significant Risk Threshold (NSRT) is a numerical representation of the national average level of risk of collision at railroad crossings equipped with standard flashing lights and gates and at which horns are sounded.
- The Risk Index with Horns (RIWH) is a measure of risk when train horns are routinely sounded at every grade crossing within a segment of rail being considered for a quiet zone.

A segment of rail may qualify for a quiet zone if it is at least ½ mile in length and if the calculated Quiet Zone Risk Index after installation of safety measures within that length is less than the Nationwide Significant Risk Threshold or less than the Risk Index with Horns for that segment. Based on current data, the calculated Quiet Zone Risk Index for San Mateo is 67% greater than the Risk Index with Horns threshold and does not qualify for a quiet zone.

Supplemental safety measures (SSMs) are FRA pre-approved risk reduction engineering treatments installed at public highway-rail crossings that have been determined to be effective in reducing collision risk. A rail segment may qualify for a quiet zone if at least one SSM is installed at each crossing or if one or more SSMs are implemented within the segment to sufficiently reduce the risk index below the applicable threshold. SSMs can include medians or channelization devices, one-way streets with gates, four quadrant gate systems, and temporary or permanent crossing closures. Currently, San Mateo does not have grade crossings with qualifying SSMs.

The FRA will annually calculate the risk index for established quiet zones based on current conditions and crossing data. Depending on the method by which a quiet zone was originally established, changes in conditions since the previous risk index calculation (e.g., changes in traffic volumes or collisions within the segment) may result in termination of the quiet zone.

There are various approaches and scenarios under which San Mateo can qualify for a quiet zone. Progress is being made on multiple approaches toward implementing grade crossing safety improvements that will reduce the risk of collisions and incrementally get San Mateo closer to the goal of a quiet zone. The staff presentation to Council will highlight various scenarios and combinations of improvements and the anticipated effect on the risk index.

One scenario expected to achieve a quiet zone is by installation of four-quadrant gates at grade crossings. Another approach that would also reduce risk is to close roads at the grade crossings to eliminate crossing traffic. Based on Quiet Zone Risk Index calculations, installing four-quadrant gates at 4th and 5th Avenue crossings in conjunction with closure of both Villa Terrace and Bellevue Avenue would bring the calculated risk index to approximately 78% of the Risk Index with Horns threshold based on current FRA data and would qualify San Mateo for a quiet zone. Public Works is performing a traffic impact analysis to evaluate potential closure of Villa Terrace and/or Bellevue Avenue.

The California Public Utilities Commission recently recommended a scope for safety improvements at the 4th Avenue and 5th Avenue railroad crossings consisting of four-quadrant gates to be funded per the Railroad-Highway Grade Crossing Program – Section 130 Guidelines (Section 130 Guidelines). Caltrans Division of Rail and Mass Transportation administers the Section 130 Guidelines and will enter into agreements individually with Peninsula Corridor Joint Powers Board (Caltrain) and the City of San Mateo to provide reimbursement funding for construction of improvements to be completed by each agency. The four-quadrant gate improvements at 4<sup>th</sup> and 5th Avenues will not by themselves qualify San Mateo for a quiet zone; however, they will reduce the calculated risk index and get us closer to the target threshold.

There are many challenges to achieving a quiet zone, notably that all railroad safety improvements must be designed and constructed by Caltrain, the improvements are costly, and there are minimal opportunities for grant funding.

#### **BUDGET IMPACT:**

These planning efforts are being funded by the Train Quiet Zone Project (#462205). Budget for City share of improvements at the 4th and 5th Avenue crossings will be established during this year's budget cycle and will be reimbursed through the RHGCP program via funding agreement with Caltrans.

#### **ENVIRONMENTAL DETERMINATION:**

This item is presented for informational purposes only and is not a project subject to CEQA, because it can be seen with certainty that it will not cause a physical change in the environment. (Public Resources Code Section 21065.)

#### **NOTICE PROVIDED**

All meeting noticing requirements were met.

**ATTACHMENTS**

None

**STAFF CONTACT**

Cathi Zammit, Engineering Manager  
czammit@cityofsanmateo.org  
(650) 522-7306