

To: Mayor and City Council

CC: Steve Schainker, City Manager
Damion Pregitzer, P.E.; Traffic Engineer

From: John C. Joiner, P.E.; Public Works Director

Date: March 22, 2024

Subject: Train Noise Concerns Near Ames High School

BACKGROUND:

This memo is to address a concern raised by a resident regarding train activity on the Union Pacific line near Ames High School and the resultant noise from train horn usage. The resident requested the exploration of noise mitigation measures similar to those implemented for the East-West line, which benefits from a Quiet Zone designation.

Staff researched train volumes using the Federal Railroad Administration (FRA) inventory database and found that **crossings near Ames High School experience an average daily train volume of one train per day**. Considering the North-South rail line through Ames is an agricultural line, it **mainly sees activity following harvest during the fall/winter months**. The FRA database will not report less than one train per day. Therefore, the **approximately 40 trains per year that travel along this line** can fluctuate and not be reflected well in daily counts.

QUIET ZONE POTENTIAL ALONG THE NORTH-SOUTH LINE:

Staff also researched the most current FRA requirements for establishing a Quiet Zone (QZ), which have been listed below:

Quiet Zone Designation Requirements:

- 1. Each public crossing within a New Quiet Zone must at a minimum be equipped with gates. Each public crossing within a Pre-Rule Quiet Zone may retain, but may not downgrade the warning systems in place.*

2. *A Quiet Zone must be at least one half of a mile in length, although Pre-Rule Quiet Zones may remain unchanged.*
3. *A Quiet Zone may be designated if Supplementary Safety Measures (SSMs) are applied to every public at-grade crossing within the Quiet Zone.*
4. *A Quiet Zone may be designated if the Quiet Zone Risk Index (QZRI) is below the Nationwide Significant Risk Threshold (NSRT).*
5. *A Quiet Zone may be designated if Supplementary Safety Measures (SSMs) are instituted which reduce the Quiet Zone Risk Index (QZRI) to a level below the Nationwide Significant Risk Threshold (NSRT), or to the risk level which would exist if locomotive horns sounded at all crossings within the zone.*
6. *A Pre-Rule Quiet Zone may also be designated if the Quiet Zone Risk Index (QZRI) is less than twice the Nationwide Significant Risk Threshold (NSRT) or if there have not been any relevant collisions at the public crossings within the Quiet Zone for the past five years.*

In 2006, staff conducted a study that established the QZ along the East-West main line and studied the feasibility of establishing a QZ along the North-South rail line (which includes crossing near Ames High School). **In short, the study found establishing the North-South line QZ to be infeasible, both logistically and financially.**

The two main issues preventing the establishment of a QZ are related to items 1 and 5 in the criteria above.

- 1) The study found that although each crossing has lights and gates, they did not have a modern pre-emption system with "Constant Warning Time". This system considers the train's speed when activating the rail crossing gate arms. Each system was estimated to cost \$150,000-175,000 (2006 USD) per crossing. Those upgrades would be for Union Pacific Railroad (UPRR) equipment that must be designed and installed by UPRR but solely at the City's cost.
- 2) After the technology at each crossing was upgraded, the City would still need to implement Supplementary Safety Measures (SSM) to bring the Risk Index With Horns (RIWH - this is the risk score based on current conditions) below the Quiet Zone Risk Index (QZRI - this is the risk score after all the improvements have been made). The primary SSMs to be implemented would require eight-inch-high medians with a minimum width of four feet. To get full points towards the QZRI score, the median must be at least 100 feet long; partial credit was allowed to a minimum of 50-foot median length. Each crossing along the North-South rail line has significant road width and drive access issues, making the construction of the SSMs (medians) infeasible.

RECOMMENDATION:

Given the unchanged criteria since the initial 2006 assessment and considering the financial and logistical infeasibility, Staff recommends not pursuing a Quiet Zone designation for the North-South line. The situation has remained largely consistent over the years, with no significant changes that would warrant a different approach or expectation of successful implementation.

Original e-mail, below:

Hall, Renee

From: Janell Eby <jceby95@gmail.com>

Sent: Wednesday, March 13, 2024, 7:37 PM

To: City Council and Mayor

Subject: Union Pacific crossing at Ames High School

[External Email]

I live 3/4 mile from the high school. The Union Pacific line there has had a great increase in trains on this line. I believe this line used to only take grain but now it also hauls ethanol. Can steps be taken so they don't have to blow their whistles?