



MEMORANDUM

To: Town Council

From: Theo Holtwijk, Director of Long-Range Planning

Date: April 28, 2014

Re: **Quiet Zone Update**

A **Quiet Zone** is proposed to be established at Woodville and Field Roads by installing FRA-approved Supplemental Safety Measures (SSM).

There are various ways to establish a Quiet Zone, such as:

- a. Installing pre-approved SSM's at all crossings automatically establishes Quiet Zone.
- b. Quiet zones can also be established by calculating the safety risk at crossings. If it is below national threshold, no safety improvements need to be made.
- c. **If safety improvements are made at some, but not all, crossings, the risk calculation must be below either national threshold or risk index with horns.**

SSM = Supplementary Safety Measure

Engineering improvements, which when installed at highway-rail grade crossings within a quiet zone, would reduce the risk of a collision at the crossing. SSMs are installed to reduce the risk level either to the level that would have existed if the train horn were sounded (compensating for the lack of the train horn) or to a level below the Nationwide Significant Risk Threshold.

Pre-approved SSMs include:

- Four quadrant gates
- Gates with medians or channelization devices

NSRT = Nationwide Significant Risk Threshold

Average weighted collision risk for 42,544 crossings nationwide equipped with flashing lights and gates where train horns are routinely sounded. FRA developed the NSRT to serve as a threshold of permissible risk for quiet zones to meet. This number fluctuates over time.

RIWH = Risk Index With Horns

Risk at Woodville and Field crossings with the sounding of train horns

QZRI = Quiet Zone Risk Index

Average risk for Woodville and Field crossings if they are in Quiet Zone

= There is added risk due to lack of train horn and reduced risk due installation of new supplemental safety measure (SSM), channelization, at Woodville and Field Road crossings

Federal Railroad Administration's Quiet Zone Calculator -

- Type of warning device

- Vehicles per day
- Trains per day
- Trains per daylight hours
- Number of tracks
- (Un)paved road
- Max. train speeds
- Number of lanes
- Number of years for accident analysis
- Number of accidents during analysis years

Data must be current within 6 months of establishing Quiet Zone.

	Scenario	NSRT	RIWH	Field	Woodville	QZRI	Qualifies as Quiet Zone?
1	Sept 2013: SSM at Field and Woodville	13,722	9,250	3,533	4,182	3,857	Yes
2	April 2014: SSM at Field and Woodville	14,347	9,250	3,533	4,401	3,967	Yes
3	April 2014: Quad Gates at Field and Woodville	14,347	9,250	2,677	3,169	2,923	Yes, but very expensive
4	<p>April 2014: Install SSM only at Field.</p> <p>Even though the calculation shows it is not required to install additional improvements at Woodville Road to establish a quiet zone, making an alternative safety measure (ASM) improvement with partial channelization at that location is recommended. (ASM improvements do not reduce QZRI.)</p>	14,347	9,250	3,533	17,605	10,569	Yes, but annual recalculation required

Conclusion

Option 4 appears to be a viable option:

- It establishes Quiet Zone,
- It will likely not require any work on private property, and
- It will save some cost (\$30K +/-)

It does appear to have more risk than installing pre-approved SSM at Woodville location as cars will be able to slalom through a channelization gap past a closed gate.