OHIO
HUDSON
CITY COUNCIL ● 1140 Terex Road ● Hudson, Ohio 44236

Date: February 25, 2020

To: Hudson City Council Members

From: Skylar Sutton, Ward 3 Council Member

CC: Craig Shubert, Mayor
Jane Howington, City Manager

Subject: Federal Railroad Administration (FRA) Quiet Zones

I request that City Council add discussion about railroad "Quiet Zones" to a future agenda. I have researched this topic with residents and neighboring municipalities and am providing the following information for your review and research before we have a discussion.

Executive Summary

- 1994 regulation changes mandate 100+ dBA horn blasts when approaching a crossing.
- The FRA allows the establishment of "Quiet Zones" which eliminate the horn requirement.
- To qualify for a Quiet Zone, safety improvements must be made to the crossing.
- Quiet Zones in northeast Ohio communities:
    - Average 40 trains and 7k vehicles per day.
    - Use a mixture of quad gates, concrete medians, and plastic pylons.
- Main line crossings in Hudson:
    - Average 60 trains and 6.9k vehicles per day.
    - Use dual gates and are not currently quiet zones.
- No community in NEO reported unexpected or negative consequences with their QZ.
- There do not appear to be any grants available at the State or Federal level at this time.

Background

In 1994 Congress passed legislation requiring trains to sound a horn on approach to a public crossing. The Federal Railway Administration (FRA) has further clarified the rules to be a 4-blast pattern (long-long-short-long), **beginning at least ¼ mile from the crossing**, and continuing until the train reaches the crossing. The horn must be at least 96 dBA **but may be as high as 114 dBA**. The regulation allows for the establishment of **"Quiet Zones" (QZ)**, which **remove the requirement for a 4-horn blast**. The FRA allows for full (24/7) or partial (7pm-7am) quiet zones, provided the calculated "Quiet Zone Risk Index" is equal to or less than the "Nationwide Significant Risk Threshold". Crossings above the risk threshold can qualify for a QZ by installing "Supplementary Safety Measures" (SSM):

1. Temporary Closure - Closing the crossing during the quiet zone hours
2. Four Quadrant Gates - Gates that block both lanes on both sides of the crossing
3. Channelization - Prevent vehicles from leaving their lane / swerving around a gate
4. Permanent Closure - Removing a crossing or converting to grade separation

"Alternate Safety Measures" (ASM) like post mounted horns, site line improvement, and traffic enforcement can be used to augment the SSM. To qualify for a QZ, public crossings must have flashing lights, gates, and one SSM - but **private crossings (e.g. driveways) only require a crossbuck and a stop sign.**

At Grade Crossings

In Hudson:

Hudson currently has 3 active public, 1 private, and 1 unused at-grade crossings:

FRA #	RR	Cross Street	Vehicles Per Day	Trains Per Day
503034K	NS	Hines Hill	2,380	60
503541T	NS	Stow Road	11,450	60
503542A	NS	Private Residence	Unknown	60
504844F	NS	Barlow Road (Little Tikes)	263	0.3 (2 per week)
503572S	MRTV	Barlow Road (Ellsworth)	2,018	0 (unused)

Nearby:

Crossings in Aurora and Streetsboro can be heard from within Hudson but cannot be addressed by the City.

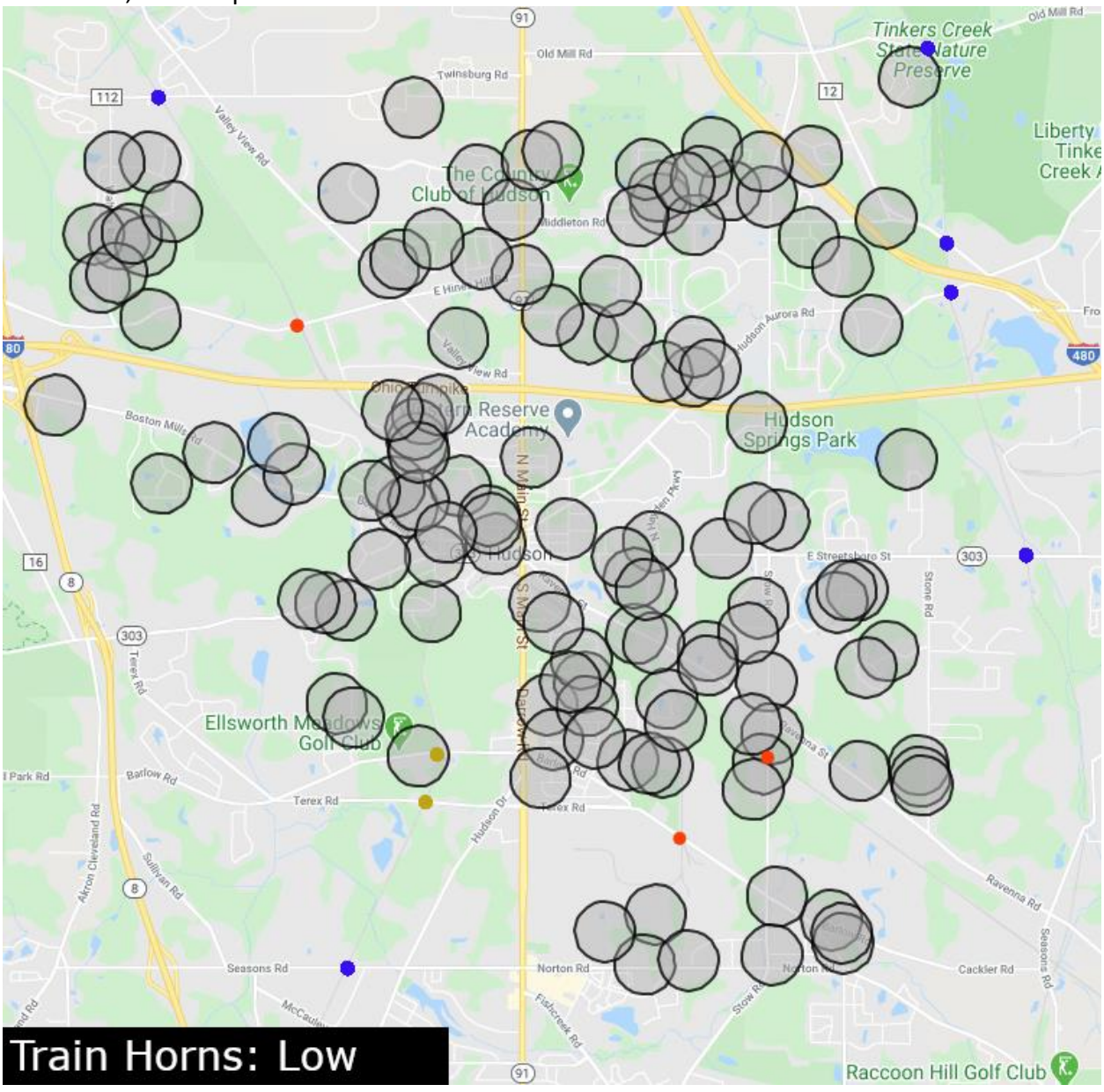
Crossings in Macedonia and Twinsburg have already been converted to QZs.

Train Horns Around Hudson

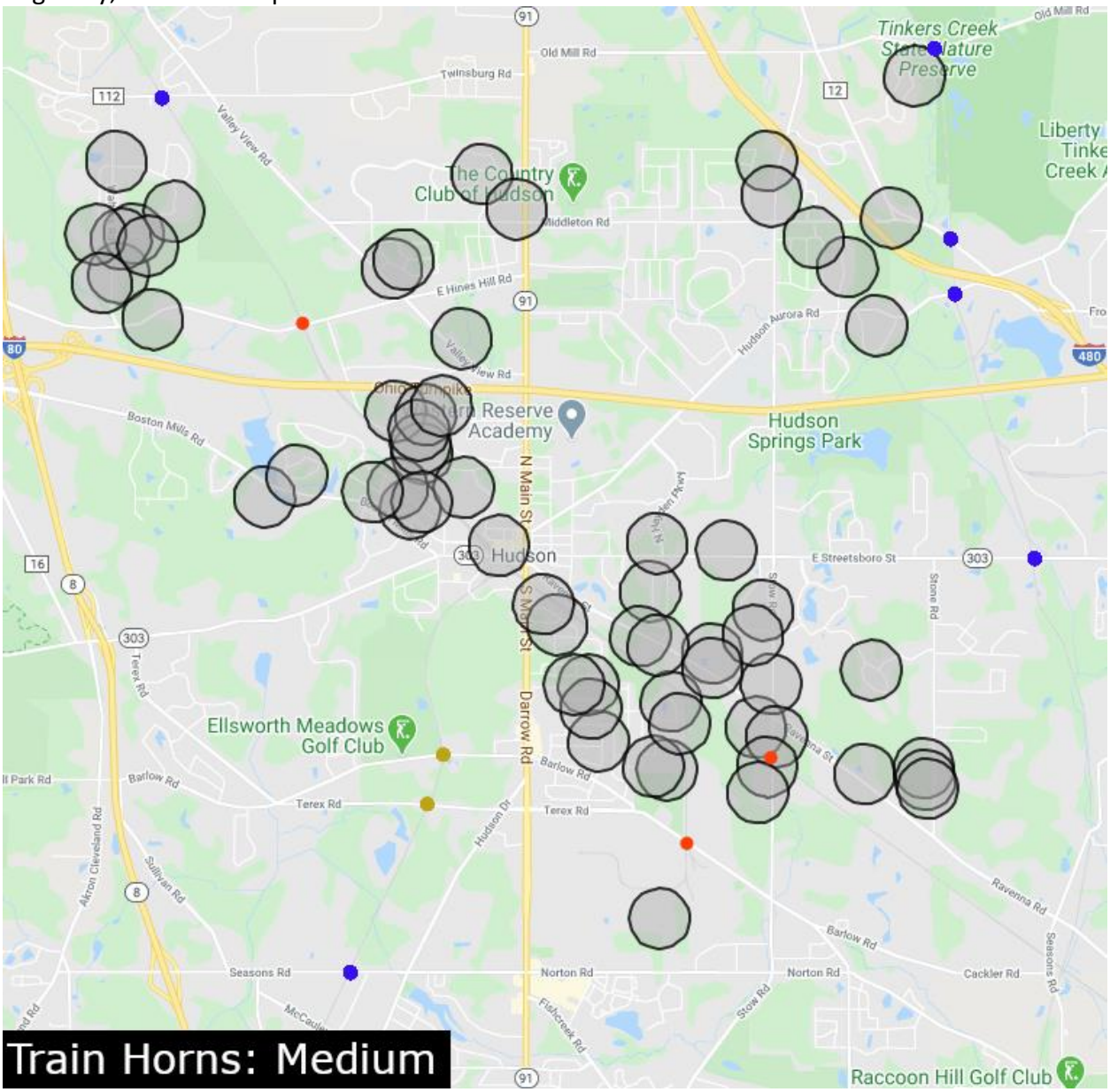
In January 2020, I asked residents if they can hear train horns and at what intensity. I received 213 responses, which have been plotted on the maps below. The data was standardized into three severities: high, medium, and low.
This is self-reported data and was not measured scientifically. That said, it does provide a good overview of how much of Hudson is affected, and how the sound moves through the terrain. Crossings have been marked in blue (external to Hudson), red (internal to Hudson and active), and yellow (internal to Hudson and inactive).

Low Severity

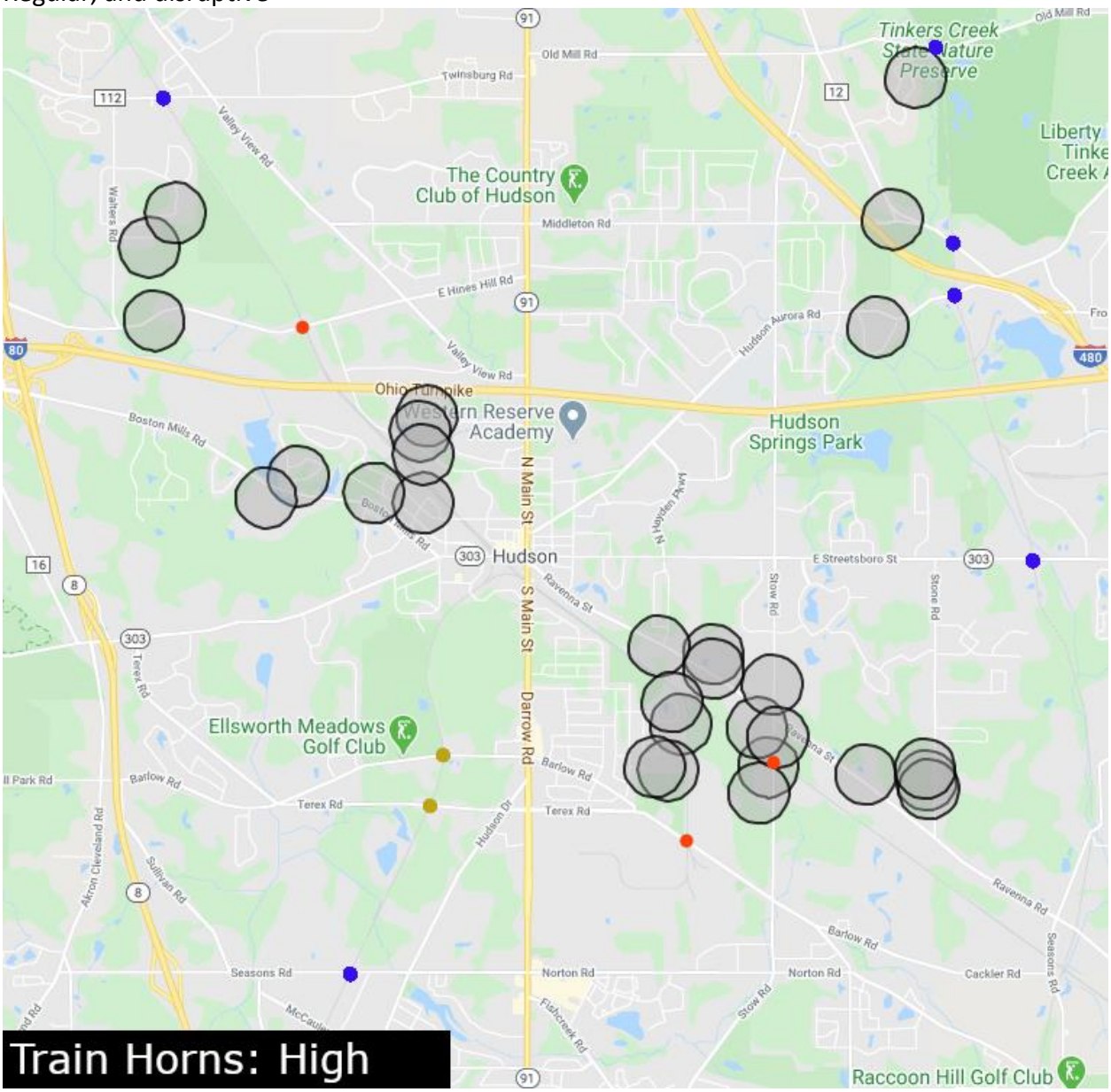
Occasional, or infrequent



Medium Severity
Regularly, but not disruptive



High Severity
Regular, and disruptive



Northeast Ohio Quiet Zones

Seventeen municipalities in Ohio have already established Quiet Zones, **seven of those municipalities are in Northeast Ohio**. In January of 2020, I contacted the seven NEO communities and asked them the following questions:

1. How many QZs do you currently have, and have you converted any back to non-QZs?
2. What types of SSMs do you use at those QZs, and what did the upgrades cost?
3. How were the SSMs funded (e.g. self-funded, grants, etc.)?
4. Have you experienced any unexpected positive or negative outcomes?
5. Have your safety forces experienced any issues or challenges with the changes?

A summary of their responses follows:

City of Twinsburg

- Five quiet zones, all using **plastic pylon** channelization
    - FRA #475950G, WE at Darrow Rd, 2 trains per day, 14k vehicles per day
    - FRA #472689L, WE at E. Aurora Rd, 2 trains per day, 10k vehicles per day
    - FRA #475951N, WE at Glenwood Rd, 2 trains per day, 6k vehicles per day
    - FRA #472691M, WE at Canon Rd, 2 trains per day, 3k vehicles per day
    - FRA #472688E, WE at Herrick, 2 trains per day, 1k vehicles per day
- SSMs were paid for by the city, **at a cost of $6,500 per crossing** ($32k total)
- Several respondents indicated the **plastic pylons require constant repair**.
    - If the railroad decides that too many of the pylons are damaged they will resume blowing horns until they are repaired.
- Engineering preferred 4 quadrant gates but estimated $100k per crossing, next preference was concrete median, but infrastructure prevented it, city settled on plastic pylons.
- Safety forces have not voiced any concerns to engineering since installation.

City of Cuyahoga Falls

- One quiet zone, using **concrete median** channelization and "No Train Horn" signs.
    - FRA #142007P, CSX at Broad Blvd, 24 trains per day, 16k vehicles per day
- SSM upgrades were paid for out of the general fund, at a **cost of $12,800**
    - Project took 10 months start to finish after engaging the FRA and CSX
- Cuyahoga Falls only received partial credit for risk reduction because of the proximity to an intersecting road, but the score was still high enough to obtain a Quiet Zone.
- Safety forces have not had any challenges; however, the road is 4 lanes wide.

City of Macedonia

- *Did not provide a detailed response to my questions*
- One quiet zone, using **plastic pylon** channelization
    - FRA #503033D, NS at Twinsburg Rd, 60 trains per day, 6k vehicles per day

City of Vermillion

- Two quiet zones, both using **four quadrant gates** (4 quad).
    - FRA #524041D, NS at Grand St., 90 trains per day, 1k vehicles per day
    - FRA #524045F, NS at Adams Street, 90 trains per day, 1k vehicles per day
- SSM upgrades were **paid for by grants**, at a cost of about $100k per crossing
    - Grants required permanently closing two lesser used crossings to qualify
- Noted that the closed crossings had an unanticipated benefit of directing traffic / increasing traffic through the commercial district.

City of Mentor

- *Did not respond to my request for information*
- Two quiet zones using **concrete median** channelization
    - FRA #937919Y, CSX at Plaza Blvd, 40 trains per day, 15k vehicles per day
    - FRA #925518P, NS at Plaza Blvd, 18 trains per day, 1k vehicles per day
- According to newspaper articles, they are actively pursuing **additional** QZs

City of Brook Park

- Four crossings using **three or four quadrant gates** (3 quad or 4 quad)
    - FRA #523971H, CSX at Hummel Rd, 38 trains per day, 5k vehicles per day
    - FRA #523973W, CSX at Engle Rd, 38 trains per day, 15k vehicles per day
    - FRA #523975K, CSX at Holland Rd, 35 trains, 4k vehicles per day
    - FRA #141936M, CSX at Holland Rd, 1 train per day, 10k vehicles per day
- SSM upgrades were paid for by the city and the project was executed in 2 phases:
    - Phase 1 (3 crossings) - $205,000 per crossing for 3/4 quadrant gates
    - Phase 2 (1 crossing) - $165,000 per crossing for 4 quadrant gates
- Noted that coordinating the FRA and Railroad was a challenge, and that it took several months before Quiet Zones went into effect after upgrades were made.

City of Olmsted Falls

- *Did not respond to my request for information*
- Five quiet zones, using **concrete median** and **plastic pylon** channelization
    - FRA #524364Y, CSX at West St, 41 trains per day, 2k vehicles per day
    - FRA #523838D, CSX at Mapleway, 90 trains per day, 3k vehicles per day
    - FRA #523837W, CSX at Brookside, 90 trains per day, 3k vehicles per day
    - FRA #523836P, CSX at Columbia, 90 trains per day, 11k vehicles per day
    - FRA #523835H, CSX at Lewis, 90 trains per day, 5k vehicles per day

Grants

I was unable to locate any current grant opportunities for crossing upgrades. The ORDC indicated they *may* have a grant available, but it requires permanently closing another crossing in exchange. I have requested that the offices of Rep. Joyce, Rep. Weinstein, and Sen. Roegner keep an eye out for future grant opportunities.

1. FRA Grants and Loans
   https://cms8.fra.dot.gov/grants-loans/grants-loans

2. Ohio Rail Development Commission
   https://rail.ohio.gov/wps/portal/gov/ordc

Resources

1. FRA Crossing Listings
   https://safetydata.fra.dot.gov/OfficeofSafety/PublicSite/Crossing/XingLocResults.aspx

2. FRA Crossing Details
   https://safetydata.fra.dot.gov/OfficeofSafety/PublicSite/Crossing/Crossing.aspx

3. Federal Regulations
   Title 49 (Transportation) > Subtitle B (Other Regulations Relating to Transportation) > Chapter II (Federal Railroad Administration, Department of Transportation) > Part 222 (Use of Locomotive Horns at Public Highway-Rail Grade Crossings)

4. Train Horn Noise Mitigation - John W. P. Redden, P. E. (Hanson-Wilson, Inc.)
   https://www.arema.org/files/library/2003_Conference_Proceedings/0042.pdf

5. Ohio Quiet Zones - March 2019
   https://www.tippcityohio.gov/DocumentCenter/View/897/Ohio-Quiet-Zone-Locations