



Board of Zoning Adjustment
22-MCUP-0001
May 1, 2023



Location of Our Facility



THE LIFE CYCLE OF STEEL



Why Recycle?

- Recycling steel requires 56 percent less energy than producing steel from iron ore.
- Recycling **one car** saves more than 2,500 lbs. of iron ore, 1,400 lbs. of coal, and 120 lbs. of limestone.
 - Reduces greenhouse gas emissions by the equivalent of consuming more than 150 gallons of gasoline.
- Through recycling, the steel industry saves enough energy to supply the annual electricity needs of more than 18 million homes



RMR Overview

- 130 Direct Employees with Local Payroll of \$9.5mm.
- Resulting in \$900,000+ in Louisville Metro Payroll and Property Taxes.
- Over \$50 Million is paid to Louisville Area Businesses.



Continuous Improvement

- We have a detailed CIRP plan:
 1. Enhanced Inspection
 2. Increased tearing open loads
 3. Internal Shredder Improvements
 4. Supplier Education & Training
 5. Supplier Accountability
 6. Continued review of what's working



Inspection Points



86% Success Rate

Combustion Events 2020	47
Combustion Events 2021	48
Combustion Events 2022	53
Combustion Events 2023	30
<u>Total Events</u>	<u>178</u>

Events Prevented 2020	262
Events Prevented 2021	351
Events Prevented 2022	348
Events Prevented 2023	115
<u>Total Events Prevented</u>	<u>1076</u>



Structures Subject to CUP



RMR Timeline – 2011-Present

- February 2011 – RMR requests CUP for new recycling sorting facility. This is located at a different area from the Shredder and does not result in noise complaints.
- March 2011 – RMR agrees to construct a sound barrier by the Shredder as part of the BOZA review of the new structure.
- January-June 2012 – BOZA authorized RMR to not construct the sound barrier with RMR's agreement to include the condition authorizing neighbors to request future hearings.



Conditions 2011-2012

1. The time of construction of the proposed sound barrier wall and building shall commence within 120 days from the approval date.
2. The Applicant/Owner shall implement the Combustion Incident Reduction Plan ("CIRP") last revised on 8/31/10.
3. The requirement to build a sound barrier wall at this time shall be suspended indefinitely as long as the explosions are kept to a minimum level satisfactory to the Louisville Metro Board of Zoning Adjustment ("BOZA").
4. If adjacent property owners or lessees of property owners or any other persons affected by the explosions in the area believes the number of explosions to be excessive, they can request BOZA to hold a public hearing; **a public hearing shall then be scheduled, and the Board shall determine from the evidence whether the sound barrier wall must be constructed.**



Sound Wall Aerial



RMR Timeline – 2011-Present

- 2017 – RMR met with area neighbors to present Hagerty Air Overpressure Study.
- 2017 – Installed Internal Foam Injection System.
- 2017 – Installed thermal camera system.
- 2018 – Installed sound absorptive panels on the shredder
- 2019 – Installed Sound Barrier Wall
- 2022 – Replaced 1,440 sound absorptive panels.
- June 2022-January 2023 – Vibra-Tech Study



Air Overpressure Results

- RMR retained a Geotechnical Consultant through the University of Louisville to review possible impacts of the combustion events in 2017, that research showed:
- At the Spring River Business Park, air overpressure was only about 3.6% of the overpressure usually associated with damage to well-mounted windows.
- On Mellwood Avenue, the highest decibel events amounted to 0.7% of the overpressure required to damage windows poorly mounted in their frames according to FEMA guidance documents.
- The Consultant's results were confirmed by prior owner of Spring River Business Park at time of neighborhood meeting.



Seismic Monitoring Results

- Ground vibrations at the neighborhoods and structures surrounding the RMR property will be less than what was measured at the property boundary, this follows the law of ground vibration attenuation with distance.

Current Results:

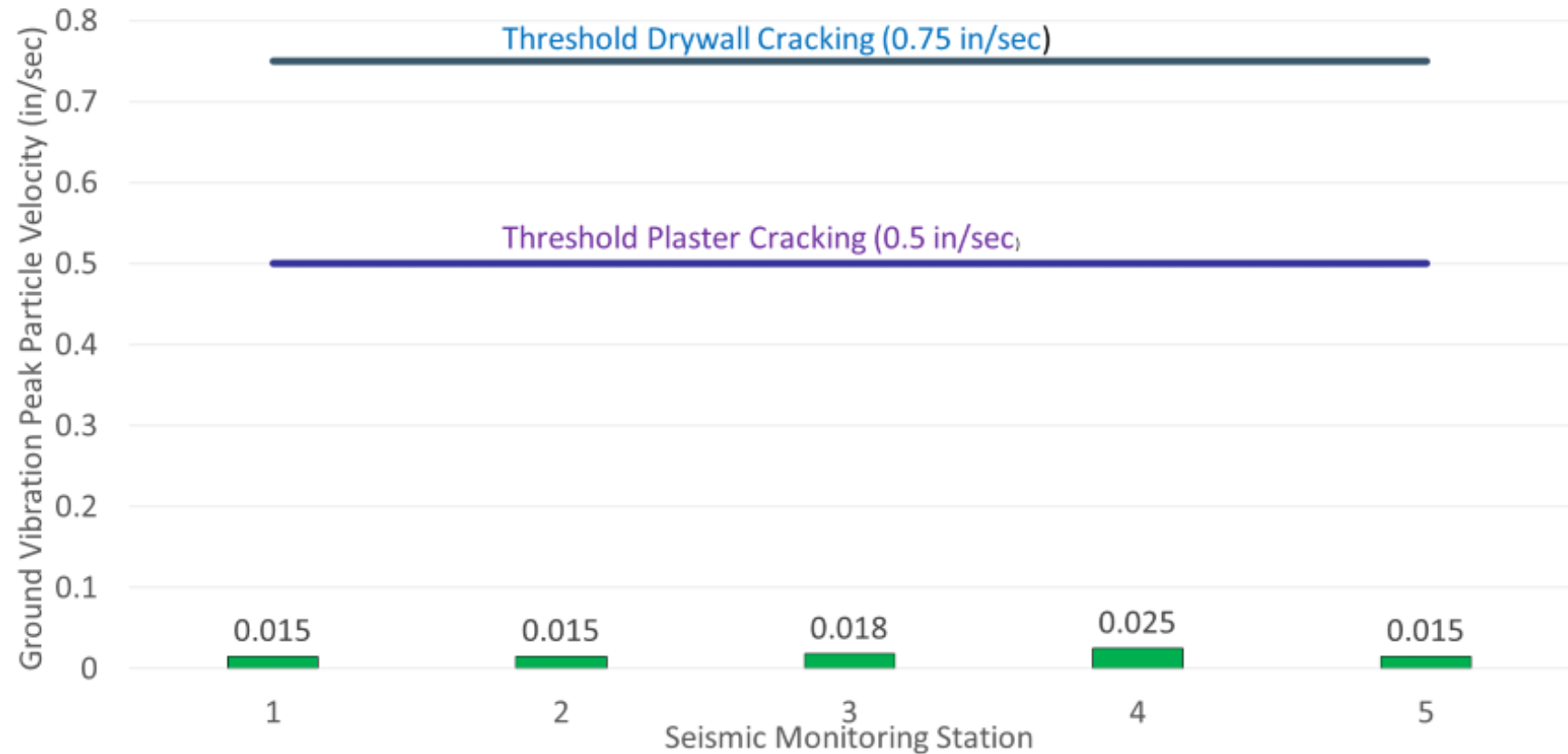
- Vibration levels from the seismic events are approximately **20 times below what is necessary to cause cosmetic cracking and damage to residential structures.**
 - This includes fatigue damage resulting from repeated vibrations.

Future Predictions:

- Based on statistical analysis of the measured ground vibration 99% of all future ground vibrations from the shredder are expected to be 0.027 in/sec or lower at the closest property boundary.
- This amplitude is **19 times below what is necessary to cause cosmetic cracking and damage to residential structures.**



RMR Ground Vibration (June 4, 2022 – January 6, 2023)
Compared to 805 KAR 4:155 and USBM RI-8507 Safe Vibration Limits to Prevent
Damage to Residential Structures



Conclusions

- The Shredder itself has operated since at least 1977 and is not subject to a conditional use permit.
- Other structures, such as the adjacent recycling center, are subject to conditional use permits.
- On average, there is approximately 1 combustion event per week that lasts under a second.
- Previous BOZA reviews of the site have made it clear that these events cannot be entirely eliminated.
- Everything we do is designed around limiting the events occurring, limiting the impact to the neighbors, and following up with the suppliers responsible for the event.



Conclusions

- Air Overpressure Study concluded that the combustion events are not causing damage to the residential neighbors.
- Seismic Monitoring Study concluded that the combustion events are not causing damage to the residential neighbors.
- RMR is in complete compliance with the conditions that govern this site & BOZA maintains authority to ensure future compliance.





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