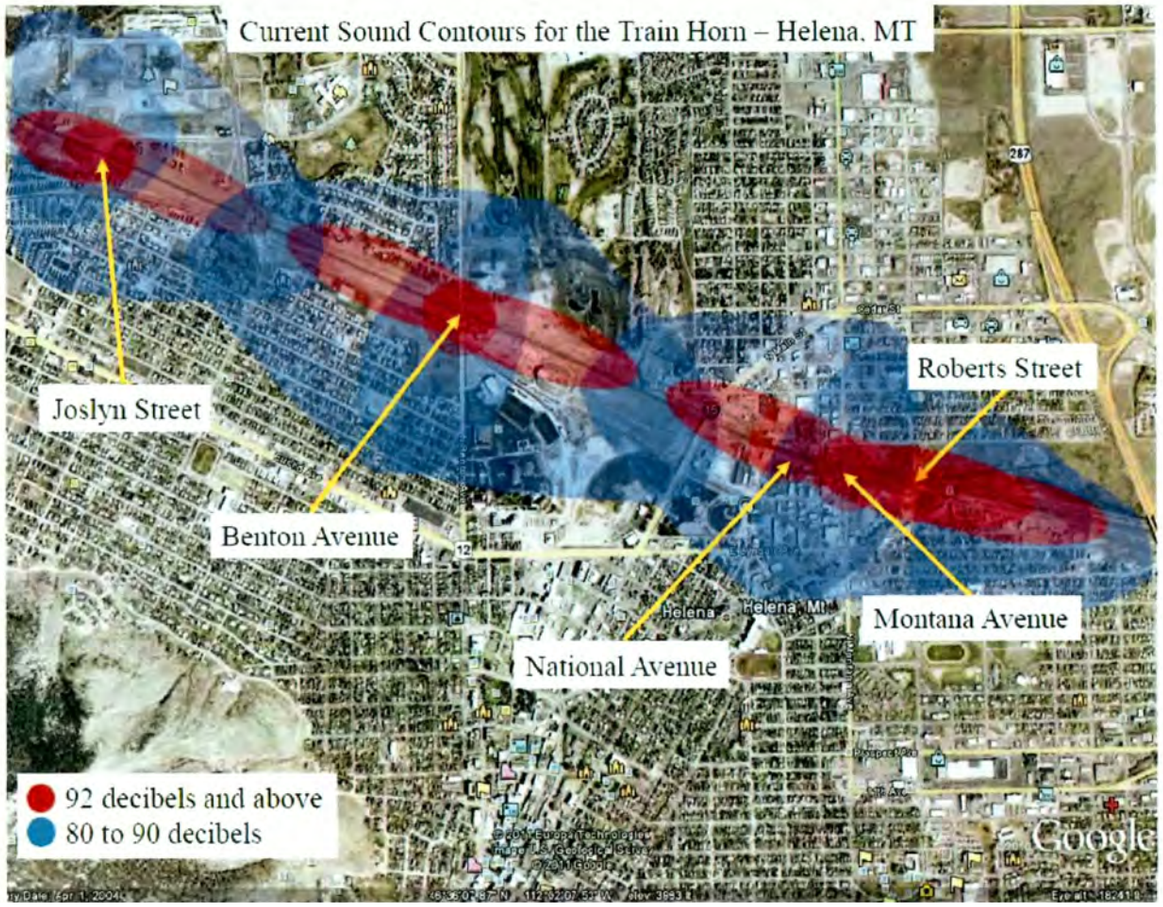
RAILROAD QUIET ZONE

The railroad, and the noise from the railroad horns have been part of Bozeman since they implemented safety standards that required trains to give warning. Various alternative methods of providing safety precautions have been approved by the FRA (Federal Railroad Administration), but any changes can only be implemented by a community that follows FRA guidelines. The process can be long and expensive, but several Montana communities, Billings, Helena, Shelby and and Missoula have already successfully implemented quiet zones.

The NUERB (Northeast Urban Renewal District) has started the process of seeing whether a Quiet Zone can be established in Bozeman, which would not only benefit the neighbors immediately next to the track, but also along the entire corridor along the NE edge of Bozeman. The two images show the decibel level before and after the client zone recently completed in Helena. Several NENA neighbors have indicated to that they are interested in helping on this project as well. We will be having a kick-off informational meeting the last week of October. If you are interested in getting involved, please contact Bobbi Clem, bbiclem@gmail.com or Amy Kelley Hoitsma, NENA President.

HOW MUCH DIFFERENCE WOULD A QUIET ZONE MAKE?



Currently, the train must sound a horn located on the locomotive, 1/4 mile, 15-20 seconds prior to the train arriving at a crossing. When a quiet zone is implemented other safety features are installed, which might allow the train whistle to be reduced to a wayside horn, which keeps the noise much more concentrated to just the immediate crossing area. These two images show the same area of Helena before and after the Quiet Zone. As you can see there is a dramatic reduction in noise levels. Wayside horns, shown on the right impact less than 10% of the area impacted by a conventional horn.

PUTTING NOISE LEVELS INTO PERSPECTIVE

Below is a list of comparative examples of noise levels.

Noise Source	dBL	
Jet take-off, jackhammer, motorcycle	100	8 times as loud as 70 dB
		Serious damage in 8hr exposure
Boeing 737 @ 1 mile, motorcycle @25 ft. newspaper press	90	4 times as loud as 70 dB
		Likely damage in 8hr exposure
Freight train @15 meters, milling machine, average factory	80	2 times as loud as 70 dB
		Possible damage in 8 hr exposure
Passenger car @ 65 mph @ 25', vacuum cleaner	70	Upper 70's - annoyingly loud
Conversation in restaurant, office.	60	Half as loud as 70 dB

Red outline is dB level with locomotive horn 80-92 dB. OSHA max level 60 dB residential area, 65dB commercial area, and 70dB industrial area. Areas close to the tracks are 4 times louder than max allowed by OSHA for Industrial area, and more than that for residential and commercial areas

DETAIL ON WHAT THE QUIET ZONE WOULD ENTAIL?

The Northeast Urban Renewal Board, (NEURB) has received a proposal from KLJ Engineering, which was involved with the engineering for the Helena Quiet Zone Study, which was completed in Dec 2017. This is the 1st step, but should help us determine if a Quiet Zone is possible, and what recommendations would be for each of the 3 crossings in Bozeman. The Helena Quiet Zone was started in 2011, and completed in 2017, so this is not a quick process.

1982 Stadium Drive, Suite 3
Bozeman, MT 59715-0697
406 404 1849
KLJENG.COM

September 1, 2017

Brit Fontenot, Economic Development Director
Northeast Urban Renewal Board (NURB)
PO Box 1230
Bozeman, MT 59771-1230

Re: Bozeman Quiet Zone Cost Proposal

Dear Brit:

Thank you for the opportunity to provide a proposal to help the Northeast Urban Renewal Board (NURB) and the City of Bozeman evaluate the option of establishing a railroad quiet zone. There are currently three at-grade railroad crossings within the Bozeman City limits (North Wallace Avenue, North Rouse Avenue, and West Griffin Drive). We recommend inclusion of all three crossings in this initial evaluation. Then, depending on the results of the analyses, the community may decide which crossings (if any) make sense in moving forward in the Quiet Zone process. We recommend the following approach, which will provide the necessary information to help the NURB make decisions going forward, while also completing necessary components of the project if it is decided to proceed with the project as-a-whole.

Survey Tasks

Some of the most critical pieces of information in determining the feasibility of required improvements at each crossing (Supplemental Safety Measures (SSMs) or Alternative Safety Measures (ASMs)) is the roadway geometry and locations of the existing crossing signals/gates. Our proposal includes completion of a topographic survey at each crossing to obtain this information.

Reconstruction of Wallace Avenue (extending just north of the railroad crossing) was recently completed (last fall). We anticipate that our design files for that project will contain the necessary data at the crossing as well as south of the crossing. Our surveyors will obtain the necessary data north of the crossing. For design and evaluation of the SSMs/ASMs, our survey will include collection of the following data:

- Utilities,
- Railroad alignment,
- Extents of road crossing panels,
- Crossing signal/gate locations and types,
- Topographic data,
- Pavement extents,
- Sign and light pole locations, and
- Pedestrian facilities.

Our surveyors will work with the railroad to obtain the necessary temporary occupancy permit to complete the survey on railroad right-of-way. Upon completion of the survey, a base map will be prepared including the existing conditions at the crossings.

Quiet Zone Analyses

Upon completion of the topographic survey, the following will be completed:

1. Utilize survey data to determine potential SSMs/ASMs.
2. Use the Federal Railroad Administration's (FRA) Quiet Zone Calculator to analyze potential SSMs/ASMs and determine the Quiet Zone Risk Index for the quiet zone.
3. Facilitate an on-site diagnostic review meeting with stakeholders to review the options for improvements at each crossing.
4. Address diagnostic review meeting questions/comments.
5. Finalize the recommendation for improvements at each crossing.
6. Develop construction cost estimates for construction of the recommended SSMs/ASMs.
7. Prepare a memorandum summarizing the Phase I analyses and findings and describe potential next steps.

Project Management Tasks

1. Facilitate coordination with the NURB and participate in two meetings with members of the board.
2. KLJ team coordination.
3. Coordination with railroad personnel.

We propose a lump sum fee of $21,700 to complete the above described items.

Thank you for the opportunity to provide this proposal. Please call me at (406)582-6222 if you have any questions or need additional information.

Sincerely,

KLJ

Shane Strong, PE

WHAT WE PROPOSE - THE QUIET ZONE WOULD ENTAIL?

Railroad Quiet Zone: NENA Committee

1. **Meet and review data available**
2. **Create plan, assign tasks - Potential Tasks**
    1. **Review FRA Guidelines**
    2. **Contact - possibly visit Helena, Missoula, Billings, Shelby that have been successful in creating quiet zones**
        1. **Their experience, recommendations, roadblocks, costs, etc.**
    3. **Contact stakeholders, City Commissioners/Mayor, Planning Department, etc. adjoining property owners?, GVLT, MDT (especially regarding Griffin Drive underpass plans)**
    4. **Determine scope of what we hope to achieve**
    5. **Request revised proposal from KLJ Engineers Helena for initial study (original proposal was dated Dec. 2017 based on Helena engineering.)**

TIMING - HOW LONG WOULD IT TAKE TO THE PUT A QUIET ZONE IN PLACE?

Based on what we have already found out from the communities mentioned about, this will not be fast or quick process. The Helena Quiet Zone was started in 2011, and completed in 2017. Hopefully we can take advantage of their experience to reduce that time frame, but I suspect much of the timing is based on what the engineers recommend, what we want to achieve, and the amount of funding it will take to implement that plan.

I would like to have a preliminary plan ready to present to NENA by the Spring 2019 mtg.