

**STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DESIGN**

MEETING SUMMARY

PROJECT: LANCASTER-SHELBURNE 40844
US ROUTE 2 SAFFETY IMPROVEMENTS

DATE OF CONFERENCE: March 27, 2024, 6:00 pm

LOCATION OF CONFERENCE: Shelburne Town Hall (74 Village Road, Shelburne)

SUBJECT: Public Officials/Informational Meeting

ATTENDANCE:

PROJECT TEAM

Corey Spetelunas..... NHDOT Project Manager

Amanda Zatecka NHDOT Project Lead

NOTES ON MEETING:

The New Hampshire Department of Transportation (NHDOT) held a Public Officials/Informational Meeting to present citizens and public officials with information regarding the proposed Lancaster-Shelburne 40844 US Route 2 project. NHDOT solicited community input to aid in the refinement of rumble strip locations to avoid unnecessary nuisance hits that would not provide a significant safety benefit.

Corey Spetelunas began the meeting by presenting the purpose of the project, why rumble strips are being put forward for installation along US Route 2, why they are an effective lane departure countermeasure, and reviewed specific installation locations identified. This presentation can be found at this link: [Lancaster-Shelburne 40844](#). The following is a summary of the questions, concerns, and comments made during the meeting. Comments received subsequent to the meeting that were not otherwise addressed, are also included in this summary. Due to the rapid-fire nature of the discussions during the meeting, names of the individuals who first addressed each topic were not presented and are not included below.

1. In response to the maps available via the presentation, residents wanted to view larger, easier to read maps for review and have the opportunity to provide comment.
 - a. *NHDOT has provided larger plans to the Town Administrator, Noelle Meer, to allow for display at the Shelburne Town Hall during normal business hours. These plans will be available for commenting until May 10th, 2024 before being returned to NHDOT for review and consideration.*

2. There was a general consensus from the residents that rumble strips are not necessary in Shelburne because there is not a strong history of notable centerline crossover crashes or run-off-the-road crashes. Similarly, there was a curiosity of how this project could “save lives” given the recent history of no fatalities.
 - a. *Crash data from July 2017 through December 2022 along US Route 2 was discussed and displayed (refer to the presentation linked above) by town. It was acknowledged that this information was for documented run-off-the-road crashes only (no centerline crossovers) and omitted animal crashes. This data included 15 run-off-the-road crashes in Shelburne, consisting of 21% of the overall crashes in Shelburne during this time period. Two (2) of these 15 crashes resulted in an injury, which accounted for 14% of Shelburne’s crashes that led to an injury.*
 - b. *The NHDOT is working towards implementing proactive safety measures using predictive crash analysis to prioritize safety improvements statewide. This is discussed in depth in the AASHTO Highway Safety Manual and is just one tool to proactively improve safety in New Hampshire. The characteristics of US Route 2, namely in Jefferson, Randolph, and Shelburne, leads to a high expectancy of lane departure crashes due to the posted speed limits, geometry of the roadway, and shoulder widths. These can be centerline crossovers or run-off-the-road crashes.*
 - c. *Corey noted the Crash Modification Factors obtained through the Highway Safety Manual (44%-64% reduction of head-on crashes, and 13%-51% reduction in single-vehicle roadway departure crashes) in conjunction with the available Wakefield sample data, which observed a 45% reduction in single-vehicle roadway departure crashes. A similar level of effectiveness would be expected along US Route 2 upon the installation of rumble strips.*
 - d. *After the meeting, at the suggestion of the residents, NHDOT requested additional crash data from the Shelburne Fire Department. Unfortunately, this data has been difficult to obtain and NHDOT was referred to NH State Police Troop F, Shelburne’s police service, for more detailed information than SFD records contain. Conversely, Shelburne provided the NHDOT with crash data provided by North County Council (NCC). NHDOT had already obtained and evaluated this data, being the provider of the data to NCC initially.*
 - e. *After the meeting, Amanda Zatecka extended the range of crash data evaluated through Shelburne to include 2002 to 2017. This period experienced one centerline crossover fatal crash in 2008, along with 3 serious injury crashes, 18 minor injury crashes, and 4 possible injury crashes. Cumulatively, 26 of the 66 available lane departure crashes resulted in an injury or worse. This generates an injury rate of 39% caused by lane departure crashes during this period. Including the original crash data from 2017 to 2022 (2 injury crashes out of 15 total crashes) lowers this injury rate to 35%.*

3. Several residents noted that some lane departure crashes will occur regardless of rumble strips being present. These can include excessive speed, animals, weather, medical issues, or mechanical failures.
 - a. *Corey agreed that not every lane departure will be prevented by rumble strips, but that doesn't mean that the preventable departures shouldn't be addressed. Rumble strips are highly effective for distracted, drowsy, or inattentive drivers to improve the chances of avoiding impacts with other vehicles, pedestrians, bicyclists, or fixed objects.*
 - b. *Due to the concern about the effectiveness of rumble strips in inclement weather, notably snow, further research was done after the meeting. Federal Highway Administration (FHWA) and the United States Department of Transportation (USDOT) both show that even when rumble strips are covered in snow, the rumble pattern remains discernible and can enhance driver recognition of lane boundaries. Snowplow operators echo these findings.*
 - c. *Additional research was conducted to determine how rumble strips effect speed, if at all. Research suggests that drivers typically reduce their speeds after travelling over rumble strips.*

4. Several times through the presentation, roadway 'tier' was mentioned. After the meeting, residents expressed interest in knowing what tier US Route 2 was classified as.
 - a. *Roadway Tier denotes the category of roadway type based on regional significance, operation, connectivity, and several other considerations. It also helps prioritize when and where roadways get improvements. A document with a more detailed definition can be found here: [Roadway Tier Definitions](#). US Route 2 is defined a Tier 2 Roadway.*

5. Residents were concerned that this meeting will not have an impact on the overall project, and that the NHDOT is only participating to make it look like input is being accepted.
 - a. *Corey led by stating that this systemic project will be occurring, as its purpose is to address safety concerns due to the nature and characteristics of US Route 2 and not due to the previous crash and injury history. The information the NHDOT is looking for from the residents is roadway usage in the individual municipalities that will impact generate "nuisance hits". These are defined as rumble strip encounters that generate noise while not providing a discernible safety benefit. These can include areas where shoulders are used as a deceleration lane for right-turning vehicles, common turning locations such as major driveways or side roads, for example.*
 - b. *Corey also reminded residents that the NHDOT previously conducted a virtual public meeting via ZOOM through North Country Council for this project on December 3, 2020, which satisfied the public outreach requirements established through National Environmental Policy Act (NEPA). NHDOT felt it was in the best interest of both the residents and the project to revisit interested municipalities to rediscuss and address concerns as practicable.*

- c. *NHDOT providing large scale plans for comment (Noted in Bullet #1) allows residents to help influence this project beyond this meeting.*
6. A resident brought up newer technology available in many cars made over the last few years; lane departure detection and correction. It was felt that if cars can do this on their own, rumble strips would not be necessary.
- a. *Corey agreed that this technology is beneficial to keeping vehicles in their lanes, however this feature can be disabled easily. We also cannot assume that every vehicle on the road will have this option.*
 - b. *Even for vehicles with this feature enabled, rumble strips provide very effective insurance at a very affordable cost. It is important to have safety redundancy in our roadway networks to account for mistakes that humans inevitably make.*
 - c. *Further FHWA research suggests that since these features rely on visibility of pavement markings, they may be less reliable when pavement markings are less visible or when inclement weather impedes visibility of the markings.*
7. There were several varying concerns regarding the noise generated by rumble strips during a vehicle impact:
- a. What is the effect of rumble strip noise on the nearby wildlife, notably wildlife relocating away from the roadway? This may negatively affect hunting in the immediate vicinity of the roadway.
 - i. *As part of the NEPA process, project impacts were evaluated for endangered and threatened species, as well as critical habitat and exemplary natural communities. This project was determined to have no impact to these species, although it does not consider other wildlife species.*
 - b. Impacts of rumble strip noise in relation to roadway noise. This is specifically of concern around the two campgrounds in Shelburne, White Birches and Timberland.
 - i. *Previous public outreach has yielded the decision to exclusively utilize sinusoidal rumble strips (also known as mumble strips) to reduce the amount of noise generated when vehicles depart their lane and traverse the strips. Technical Analysis of statewide roadway noise has been performed with the conclusion that sinusoidal rumble strips will provide a noticeable noise reduction over conventional rectangular rumble strips.*
 - ii. *Residents are encouraged to provide input via the maps provided and made available at the Town Hall for site specific concerns.*

- c. A request was made to evaluate the current road noise levels to determine how much noise increase would be expected with the installation of rumble strips.
 - i. *According to the [NHDOT Noise Policy](#), to qualify for noise mitigation, a project must be defined a Tier 1 Project (which is further defined starting on Page 4), to qualify for noise mitigation. Rumble strip projects do not fall under this category, so initial noise levels would not be evaluated as part of this project.*
 - 1. *Due to the number of driveways, side roads, etc. along US Route 2, any structural efforts (berms, walls, etc.) to mitigate noise would prove ineffective due to the gaps that would be required to maintain these access points.*
 - d. Residents voiced concern that the intermittent sounds that rumble strips make when struck will be just as bad as a continuous sound, and possibly worse.
 - i. *Corey noted that while rumble strip noise is a significant spike over silence, compared to normal road noise the increase in decibel level is more manageable. When compared to road noise, the noise increase when a vehicle hits a sinusoidal rumble strip is enough to notice, but still quieter than the rectangular rumble strips often installed along corridors similar to US Route 2.*
 - ii. *US Route 2 carries a large percentage of truck traffic and is a popular route for motorcyclists. Both vehicles produce noise volumes that greatly surpass rumble strips with jake brakes and engine noise, respectively.*
9. Residents requested a lower speed limit along US Route 2 as an alternative to rumble strips.
- a. *While this is a common request, Corey noted that changing the number on the speed limit sign rarely changes driver behavior as it relates to speed. Short of a heavy enforcement effort, drivers will drive at the speed they are comfortable, given the characteristics of the roadway. Even with a concerted police presence, once the focus moves elsewhere, the higher speeds will return.*
 - b. *To effectively reduce speeds along US Route 2, physical changes to the roadway need to take place to warrant a lower speed and give a visual cue to drivers that the road should be driven at a slower speed.*
 - c. *Research suggests that drivers tend to reduce speed when rumble strips are present, as well as increase their attentiveness. These benefits are more prominent after a driver has impacted rumble strips.*
10. During the presentation, it was noted that the daily average volume of traffic along US Route 2 was 5,500 vehicles per day. Given the length of US Route 2, residents requested to know where and when this information was acquired.
- a. *This information is generally collected via permanent traffic counting stations in various locations across the state. The traffic volume included in the presentation appears to have been collected in Gorham, immediately east of the town line with Randolph in 2019.*
 - b. *Shelburne specific traffic counts include the following, all from 2023:*

- i. 4,334 vehicles per day – located at the Gorham/Shelburne Town Line
- ii. 3,995 vehicles per day – located approximately 1700' east of North Road
- iii. 2,894 vehicles per day – located at the New Hampshire/Maine State Line

11. A resident asked why the milled surfaces of the rumble strips cannot be placed further apart, similar to some Western states.

- a. *NHDOT would need to conduct further research into the effectiveness of various rumble strip patterns and layouts. The current design of the rumble strips conforms to the [NHDOT Rumble Strip Guidelines](#), with the exception of sinusoidal rumble strips being used exclusively for this project.*

12. Residents questioned if this project could be postponed until further input could be provided via the larger maps that will be available at the Town Hall.

- a. *Corey indicated that no installation of rumble strips will be constructed for several months. Prior to Construction, a member of the design team is required to conduct a final field review to physically mark the start and end locations of the rumble strips.*
- b. *This provides opportunity for residents to make site specific comments about the proposed rumble strip locations to influence the final rumble strip layout (Noted in Bullet #1).*

13. Residents requested the best way to get information and comments to NHDOT.

- a. *The best way to request more information or provide additional comment is through the Project Manager, Corey Spetelunas. He can be reached at Corey.R.Spetelunas@dot.nh.gov.*

Corey concluded the meeting by thanking everyone for attending and their participation. He provided his contact information and encouraged anyone with further questions or would like to discuss further, to contact him via email or phone.

NOTED BY: C. Spetelunas

cc: File