

PROJECT 56-316: ALTERNATIVE METHODS TO REDUCE HIGHWAY NOISE FACT SHEET

May 2020 National Cooperative Highway Research Program Project 25-57

[Summary of Noise-Reducing Strategies](#): “Breaking Barriers: Alternative Approaches to Avoiding and Reducing Highway Noise Impacts”

Quieter Bridges

Project 56-316 will be repairing 22 bridges, including the North Mianus Bridge, which is only 100 ft. long.

Inexpensive ways to make quieter bridges:

- Diamond grinding: a pavement preservation technique that corrects a variety of surface imperfections in asphalt concrete pavements costs \$1-\$3 per ft², geographically dependent; reduces noise by 5 to 10dB.
- Quieter bridge joints, while they cost 20-40% more than conventional bridge joints, reduce the noise by 6 to 9dB (p. 9, Noise-Reducing Strategies link above).

Proposal: If only ‘quieter joints’ were used in the 22 bridges, this engineering approach would result in a significant reduction to the noise for the entire length of the project for a relatively modest cost/benefit.

Quieter Rumble Strip Design

- Quieter rumble strips with a sinusoidal pattern reduce noise by 3 to 7 dB (used in MN, CA, TX and WA).

Question: Are quieter rumble strips planned for the 22 bridges?

Quieter Pavement (see Quiet Pavement Fact Sheet)

- Quieter pavement using thin bonded asphalt overlays; reduces noise up to 6 dB; costs \$5.00 to \$15.00 per m² (\$0.50 to \$1.50 per ft²).

Question: Presumably, the concrete base will be restored to good condition, and therefore, will this project incorporate the thin bonded overlay (at least for the bridges)?

Noise Reduction through Operations Management Strategies

- Speed restrictions are an effective means of noise reduction (for heavy vehicles, a 2 dB is achieved for a reduction in speed of 10 mph). Note: reduced speed on I-95 in New Haven
<https://portal.ct.gov/DOT/News-from-the-Connecticut-Department-of-Transportation/2013/Increased-Speed-Enforcement-in-I-95-New-Haven-Corridor#:~:text=The%20Connecticut%20Department%20of%20Transportation.in%20the%20New%20Haven%20area>).

Request: If speed limits are reduced, manual and automated speed monitoring and enforcement should be pursued (this is a logical place to raise revenue) ([Speed Limits – Frequently Asked Questions](#)).