

Project Title:	Nonproprietary crashworthy noise wall attached to bridge barrier (2023-02-BR)
Project Synopsis:	<p>Develop details for a structurally integral noise wall attached to a TL-3, TL-4, or TL-5 bridge barrier which retains the crashworthiness of the barrier and meets design and crash metrics for the noise wall, inclusive of hazards to roadway undercrossing.</p> <p>The main focus will be in utilizing the existing TL-5 crash tests for dissemination and extrapolation with a TL-4 system. TL-3 will be kept in the problem statement yet is a lower priority.</p> <p>Two basic configurations will be assessed:</p> <p>Wall integral to the barrier. Wall attached to the barrier.</p> <p>A query for needful noise wall characteristics such as height, either above grade or above barrier, should be a precursor to the barrier tests.</p>
Project Goal(s):	<ol style="list-style-type: none"> 1.) Start with a crashworthy crash tested barrier. 2.) Develop details inclusive of ranges of implementation for a noise wall attached to the barrier. 3.) Provide details for a TL-3, TL-4, and TL-5 configuration.
Project Background:	<p>Often in congested areas there is not room for a 4' setback for a noise wall, and at times geometry necessitates attaching the noise wall to the bridge barrier. Currently what modifications can be made to maintain a crashworthy barrier are left to judgement.</p>
Proposed Work Plan:	<ol style="list-style-type: none"> 1.) Literature Review of non-propriety noise walls designs in practice <ol style="list-style-type: none"> a. Texas tests on a TL-5 system exist. "FHWA/TX-22/0-7086-R4, Mash Test 5-12 Evaluation of TxDOT T80SS barrier with Sound wall, September 2021" b. TTI Publication Catalog Record (tamu.edu) 2.) Survey Member States to determinant most common design, placement, and other parameters such as connectivity to the barrier <ol style="list-style-type: none"> a. Assess integral and attached to barrier. 3.) Develop prototype design of nonproprietary noise wall <ol style="list-style-type: none"> a. Fed by information on needful noise wall characteristics such as height. 4.) Evaluate the design based on simulations with MASH TL-4 and TL-5 tests and TL-3 if warranted 5.) Refine the design based on the simulation outcome and the desired structural performance of the noise wall 6.) Recommendation for testing in Phase II
Deliverables:	<p>A nonproprietary crashworthy noise wall design configuration that can be attached to bridge barrier.</p>
Urgency and Expected Benefit:	<p>Cities, or other areas with limited right of way and desire for noise mitigation, will benefit from the maintained crashworthy safety hardware with a broadened ability to mitigate noise from traffic.</p>

Problem Funding and Research Period:	Total Estimated Cost = \$XX,XXX
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