

Research Problem Statement

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| Project Title: | LSRB: Development and Evaluation of a Thrie Beam Transition between 31" Median Guardrail and Median Single Slope Concrete Barrier (2024-08-LSRB) |
| Project Synopsis: | This project would develop a MASH transition from two-sided 31" median guardrail to single-slope concrete median barrier using thrie beam rails. Although TTI previously developed and tested a MASH TL-3 median guardrail transition, it uses a stacked W-beam design. This proposal would fund the design and full-scale crash testing a symmetrical thrie beam transition consistent with one-sided MASH approach guardrail transitions. |
| Project Goal(s): | <ol style="list-style-type: none"> 1.) Provide states with a median guardrail transition design that uses the same components and construction methods as a typical MASH one-sided approach guardrail transition (AGT). 2.) Provide a transition design compatible with raised medians (31" median guardrail installed over curb). |
| Project Background: | TTI previously designed and tested a MASH TL-3 median guardrail transition that used stacked W-beam rails (TR No. 0-6990-R1). MwRSF developed a NCHRP 350 TL-3 median guardrail to single slope median barrier transition that used thrie-beam rails (Report No. TRP-03-47-95). TTI evaluated and tested to MASH TL-3 the one-sided TxDOT thrie-beam transition to concrete barrier without end shoe block (TR No. 0-6946-R3). The proposed median transition design would seek to approximately match the materials and construction methods of the one-sided AGT. |
| Proposed Work Plan: | <ol style="list-style-type: none"> 1.) Task 1 – Design development of thrie-beam transition to single-slope concrete barrier. 2.) Task 2 – Finite element analysis to determine critical impact scenarios and design modifications, if necessary. 3.) Task 3 – Full-scale crash testing according MASH TL-3. |
| Deliverables: | Test report with design analysis, design details, and full-scale crash test results. |
| Urgency and Expected Benefit: | States may be reluctant to use the available stacked W-beam median guardrail transition design out of concern that it differs too greatly from one-sided MASH AGT designs, complicating construction and maintenance. |
| Problem Funding and Research Period: | Total Estimated Cost = \$XX,XXX |
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