

**Research Problem Statement** 

2019-39-LSRB

Project Title:	Design and Testing of a Thrie-beam System at a Fixed Object
Project Synopsis:	Develop and crash test a thrie-beam system that protects against fixed objects which are close to the roadway. This thrie-beam system requires minimum deflection and blockouts abutting the fixed object. This project will provide the states with a more cost effective alternative for the limited deflection of a concrete barrier.
Project Goal(s):	-Develop designs for a MASH TL-3 limited flexibility thrie-beam roadside system -MASH crash test the newly developed thrie-beam design
Project Background:	States use thrie-beam systems when enhanced protection is needed. One case can be seen when a fixed object is in close proximity to the roadway. Concrete barriers would provide adequate protection, but their cost is much larger than a thrie-beam system. However, the thrie- beam system typically allows more deflection than the concrete barriers. Therefore, this project will develop a "close to rigid" thrie-beam system that can be implemented instead of concrete barriers.
Proposed Work Plan:	<ul> <li>Task 1: Design Development         This task will first review the current literature and previous research related to thriebeam guardrail systems. This task will then develop preliminary design options that provide a "close to rigid" condition. This effort will involve a computer simulation portion which will evaluate the system before full-scale testing.     </li> <li>Task 2: MASH Crash Testing         This task will crash test the roadside systems to MASH TL-3.     </li> </ul>

Deliverables:	-Design for a MASH compliant roadside thrie-beam barrier that provides a "close to rigid" condition -Technical report documenting all of the work completed in this project
Urgency and	Concrete barriers are often used when no deflection of a barrier system is allowed. However,
Expected	these systems are often costly. Therefore, this project will provide a more cost-effective option
Benefit:	by using a thrie-beam design.
Problem Funding and Research Period:	
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