

**2023-06-LSRB**

<b>Project Title:</b>	Effect of Electric Vehicle Implementation on Currently Available Roadside Safety Hardware
<b>Project Synopsis:</b>	Electric vehicles are becoming more prevalent on roadways across the nation. These vehicles typically differ from their fossil fuel alternatives by both weight and weight distribution. Therefore, there is a need to evaluate the performance of roadside safety hardware with electric vehicle impacts. This project will first select electric vehicles which correspond to the current fossil fuel MASH vehicles. Subsequently, the research team will perform the otherwise MASH compliant crash tests on the currently available and MASH compliant hardware.
<b>Project Goal(s):</b>	Evaluate currently available MASH compliant roadside hardware with electric vehicle impacts.
<b>Project Background:</b>	<p>Electric vehicles are becoming more prevalent on roadways across the nation. Current outlooks on the automobile industry show a strong direction toward electric vehicles in the near future. Many major vehicle manufacturers are producing electric alternatives in the current or near future model years.</p> <p>Electric vehicles typically differ from their fossil fuel alternatives by both weight and weight distribution. Electric vehicles tend to be heavier than their fossil fuel alternatives, mostly arising from the incorporation of large batteries. Furthermore, the weight distributions typically differ as well. The heavy batteries are commonly located near the floorboard of the vehicles, which is much different than the weight distribution of current MASH vehicles.</p> <p>Heavier electric SUVs or trucks may cause strength and containment concerns on current barriers, as some of the contemporary MASH compliant systems are at the upper limit of their capacities. Furthermore, the smaller electric cars may cause an underride concern because of the lower weight distribution. Therefore, there is a need to begin investigating these concerns through this project.</p>
<b>Proposed Work Plan:</b>	<p><b><u>Tasks:</u></b></p> <ol style="list-style-type: none"> <li>1. Vehicle Review and Protection</li> <li>2. Barrier Prioritization Survey and Selection</li> <li>3. MASH TL-3 Full-Scale Crash Testing and Reporting</li> </ol>

<b>Deliverables:</b>	Compile summary report to document research effort, including vehicle and barrier selection, CAD details, crash testing, and recommendations for further research.
<b>Urgency and Expected Benefit:</b>	Electric vehicles are becoming more prevalent on roadways across the nation, and current outlooks on the automobile industry show a strong direction toward electric vehicles in the near future. These vehicles typically differ from their fossil fuel alternatives by both weight and weight distribution. Therefore, there is a need to evaluate the impact performance of roadside safety hardware with electric vehicle impacts.
<b>Problem Funding and Research Period:</b>	
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