


<p>Project Title:</p>	<p>MASH Testing of Sign Posts with Flashing Beacon Equipment (2023-01-BD)</p>
<p>Project Synopsis:</p>	<p>Flashing beacons are regularly added to standard roadside sign installations for various reasons. The installation of this equipment alters both the weight and the wind loading of the sign structure, which may affect the performance of any installed breakaway device or interactions with a colliding vehicle.</p> <p>The purpose of this research is to determine if standard breakaway features continue to function as designed and previously tested when flashing beacon equipment is added to a standard roadside sign installation.</p> 
<p>Project Goal(s):</p>	<ol style="list-style-type: none"> 1.) Determine crashworthiness of a standard sign support system when flashing beacon equipment is added. 2.) Determine threshold of sign support sizes/types that retain crashworthiness, such as sign supports over a certain size or specific types of breakaway bases.
<p>Project Background:</p>	<p>Flashing beacon systems are frequently added to signs to provided additional emphasis, stronger alerts to drivers, or perform a specific function related to a “when flashing” message. Sign supports that have been proven to meet MASH requirements may no longer do so when flashing beacon equipment is installed.</p>

<p>Proposed Work Plan:</p>	<ol style="list-style-type: none"> 1.) Task 1 – Literature review <ol style="list-style-type: none"> a. Review previous and ongoing research related to the evaluation of sign support systems with flashing beacon attachments. b. Investigate installation conditions for flashing beacons on standard sign supports. Determine a few basic types of beacon installations, such as: hard wired with compact control box, solar with separate panel and control box, and self-contained solar (“post-topper” type) for evaluation. c. Review current state standards for sign support systems with flashing beacon attachments. If additional information is needed, conduct a survey of state DOTs to collect additional information on sign support types, sizes, and other installation details. Based on this information, identify most common or highest priority support type (i.e., round or square tube). 2.) Task 2 – Engineering analysis <ol style="list-style-type: none"> a. Identify and select critical (worst case) sign support assembly (i.e., base, support type, support size, sign panel, flashing beacon, etc.) configuration for full-scale crash testing. Other less critical configurations would be considered acceptable. 3.) Task 3 – Drawings and system construction 4.) Task 4 – Full scale crash testing 5.) Task 5 – Report and recommendations
<p>Deliverables:</p>	<p>Final report documenting research and testing performed and conclusions reached. Documentation of MASH compliance for applicable installation types.</p>
<p>Urgency and Expected Benefit:</p>	<p>Moderate urgency, as these configurations are already in use in the field but there is no repository of information on collision outcomes.</p> <p>Benefit is to provide FHWA and State DOTs with more concrete information regarding the crashworthiness of sign supports when flashing beacon equipment is added, and which support configurations should not be used for flashing beacon installations.</p>
<p>Problem Funding and Research Period:</p>	<p>Total Estimated Cost = \$130,000</p> <p>Research Period: 18 months</p>
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