


<b>Project Title:</b>	Crashworthy Pedestrian/Traffic Signals and Detector Assemblies
<b>Project Synopsis:</b>	<i>MASH Crashworthiness evaluation of Pedestrian and Small Traffic Signals installed on Transformer Bases and Pedestrian Detector/Actuator Assemblies.</i>
<b>Project Goal(s):</b>	Provide MASH Crashworthy designs of breakaway Pedestrian Signals/Actuators and Small Traffic Signals.
<b>Project Background:</b>	<p><i>Pedestrian Signals are needed at many intersections/pedestrian crossings where there is no other post or poles fore which to attach. Additionally, current ADA Guidance recommends separated Pedestrian detector/actuators, which require separate posts. These assemblies need to be evaluated for MASH compliance. Additionally, similar to the Pedestrian Signals, small traffic signals are often mounted to above transformer bases to have a breakaway system in locations such as medians and traffic islands.</i></p> <p><i>Examples of the Pedestrian Assemblies can be viewed on FDOT Standard Plans, Index <a href="#">653-001</a> (Pedestal Mounted Signal) and Index <a href="#">665-001</a>.</i></p>  <p><i>Pictured is an example of a Small Traffic Signal Assembly.</i></p>

<p><b>Proposed Work Plan:</b></p>	<p><i>Crash test worst-case assembly details based on information gathered from the member states and establish guidelines for acceptable mounting hardware (i.e., heights, size, and mass of signal heads). Additionally, bogie test or pendulum test pedestrian detector/actuator posts to establish equivalent breakaway design. Some testing has been done by TTI for TxDOT (Report 0-6946-1) for crash testing Flashing Beacons and Controller Cabinets on post supports mounted on transformer bases.</i></p> <p><b>Task 1. Information Gathering through Members Survey.</b> Develop design details. Conduct finite element simulation as design aid and vehicle impact behavior prediction.</p> <p><b>Task 2. Component Testing.</b> Conduct component testing to investigate worst-case conditions.</p> <p><b>Task 3. System Construction &amp; Full-Scale Crash Testing.</b> Build /Purchase test articles. Conduct full-scale crash testing of worst case(s) (TL-3).</p> <p><b>Task 4. Guidelines.</b> Define guidelines and summarize recommendations for implementation based on crash testing and engineering investigation.</p>
<p><b>Deliverables:</b></p>	<p>Guidelines (i.e., minimum maximum design parameters) for establishing MASH Compliant Pedestrian Signal Assemblies, Small Traffic Signal Supports, and Pedestrian Detector/Actuator Posts.</p>
<p><b>Urgency and Expected Benefit:</b></p>	<p><i>Needed for MASH Implementation of Breakaway Devices. Provide MASH Compliant Pedestrian Signal and Detector/Actuator Assemblies, as well as MASH Compliant Small Signal Assemblies.</i></p>
<p><b>Problem Funding and Research Period:</b></p>	<p><b>Task 1: \$15,617</b>  <b>Task 2: \$52,377</b>  <b>Task 3: \$91,901</b>  <b>Task 4: \$17,477</b>  <b>Total: \$177,372</b>  Research Period: <b>1 year</b></p>

**Developer(s) of  
the Problem  
Statement:**

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