Roadside Safety Pooled Fund

Research Problem Statement

2021-03-WZ

Project Title:	Acceptable Service Life for Temporary Traffic Control Devices
Project Synopsis:	There is a need for the development of guidelines for acceptable service life for Temporary Traffic Control (TTC) devices to aid in sunsetting TTC devices that may have been previously accepted under NCHRP-350 but, do not meet MASH-16 crashworthiness. This will also provide assistance with state and national guidelines that do not consider age of devices.
Project Goal(s):	Develop a report or study to provide service life guidelines for TTC devices (specifically drums, sign stands, barricades, and vertical panels) (especially those previously accepted under NCRP-350 and do not meet MASH-16 crashworthiness) and consider age in addition to quality.
Project Background:	With AASHTO and FHWA's agreement requiring all traffic control devices manufactured after December 31, 2019 be MASH-16 approved for crashworthiness, many state DOT's are working on establishing appropriate sunsetting dates for all TTC devices purchased or manufactured on or before to this date. This effort includes the following category 2 devices, previously established under NCHRP-350 guidelines: drums, sign stands, barricades, and vertical panels. While the implementation of MASH-16 allows previous NCHRP-350 compliant devices to be used for the remainder of their service life, guidance is lacking in- regards to what service life truly means. ATSSA does provide quality guidelines for acceptable vs. unacceptable TTC devices but, they do not account for the age of the devices. As state DOT's react to the requirements of MASH-16 by establishing sunset dates for NCRHP-350 devices, service life guidelines will help to establish consistency nationally to ensure each state is on the same page and that road users can expect to see the same quality and safety while traversing work zones no matter where they are travelling.
Proposed Work Plan:	Task 1. Literature Review ($12,000, 2 months) Revise existing literature review, and understand the need from the DOTs. Task 2. DOT Survey /Best Practices ($25,000, 6 months) The researchers will develop an online survey form to be shared with appropriately identified contacts from the DOTs agencies. The online survey will collect information regarding any available state guideline /protocol /best practices that is currently used by the DOTs. Specifically, the survey will also request information regarding available guidelines accounting specifically for devices age. It is anticipated that the researchers might have to contact specific contractors /manufacturers to obtain more information regarding their suggested protocol for use of TTCD based on these systems' age. Using the information gained from survey responses, the researchers will select agencies that have developed /adopted guidelines for acceptable service life for

	TTCD considering systems' age. More detailed information will potentially be collected regarding the used protocols, as well as the lessons learned during the development and/or adoption of such guidelines. Task 3. Reporting /Guidelines + Review ($13,000, 4 months) The researchers will prepare a concise and cohesive synthesis report, presenting the research results, summarizing best practices /lessons learned, and discussing opportunities for further research.
Deliverables:	The project's deliverable will be a report that cohesively summaries the findings from the project tasks. The report will also include potential guidelines based on the tasks' findings, mainly related to outcomes from the literature review and the state's survey. The report will also identify need for potential future research projects, targeting specific needs that require additional research /testing.
Urgency and Expected Benefit:	Appropriate service life guidelines for TTC devices will help to ensure save operations within work zones. This will allow for state DOTs to continue a consistent work zone environment for road users as there will be familiarity to the road user with existing and new TTC devices. This will also provide for better decision making to state regional and local DOT's as they consider sunsetting TTC Devices that have been in deployment longer than expected and may not meet MASH-16 crashworthiness.
Problem Funding and Research Period:	Budget: $50,000 Research Timeline: 12 months
Developer(s) of the Problem Statement	Brian Crossley (Pennsylvania Department of Transportation) bcrossley@pa.gov 717-265-7562