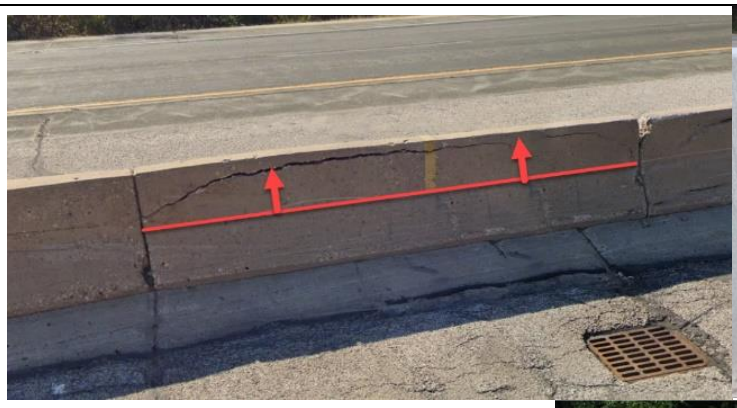
Roadside Safety Pooled Fund

Research Problem Statement

Project Title:	**Spot Repairs to Permanent Concrete Barrier Phase I – 2023-03-LCB**
Project Synopsis:	    There are miles of existing barrier that has degraded due to environmental conditions, poor concrete quality, cracking, or from vehicle impacts. Although it is possible to fully replace segments of concrete barrier, are there other ways to remediate these barriers using less expensive repair methods? Are there methods or materials that could be used in initial barrier construction to prolong barrier life?
Project Goal(s):	1.) Survey the State DOT's to determine the current state of practice and the most cost effective means for repairing damaged concrete barrier in the field without impacting crash performance of the barrier systems with the repairs. Damage from environmental conditions, cracking, and crash impacts will be considered as part of this study.
Project Background:	States have many miles of existing concrete barrier that has been degraded due to environmental conditions, poor concrete quality, or impacts. Although fully replacing concrete barrier is possible, are there other cost-effective repair methods to consider for concrete barrier systems damaged from environmental conditions, cracking, and crash impacts? This study will focus on these three damage cases for concrete barrier systems.
Proposed Work Plan:	1.) Task 1 – Survey States on their current practice of repair of concrete barrier. 2.) Task 2 - Review the best possible concrete repair techniques, methods, and procedures from the survey. 3.) Prepare Brief Letter Report of Findings from Task 1 & 2.
Deliverables:	Prepare a Brief Letter Report that Summarizes our findings from Tasks 1 & 2

Urgency and Expected Benefit:	There are various repair techniques that could be used to perform spot repairs. However, many of these repair techniques have not been used on concrete barriers. It is not known how well some of these repair techniques will perform during an impact. Some examples could be: 1. Injecting an epoxy to seal cracks. What epoxies perform best? 2. A sealant could be applied to small cracks to reduce degradation. Are sealants effective and do these change the friction/crash properties of the barrier? 3. A survey will be developed as part of this project to determine if this is a problem among the states. Several questions will be developed to address the best means and methods for repairing concrete barriers in the field due to environmental effects, poor concrete quality, damage from vehicle impacts.
Problem Funding and Research Period:	**Total Estimated Cost = $53,600** **Project Duration: 12 Months**
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