

<b>UTC Project Information</b>	
Project Title	MPC-680 – Minimizing Barriers to Implementing a Risk-Based Inspection Planning Framework in State Departments of Transportation (DOTs)
University	Colorado State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	<p>USDOT, Office of the Assistant Secretary for Research and Technology \$55,000</p> <p>Colorado State University \$66,000</p>
Total Project Cost	\$121,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	December 17, 2021 to July 31, 2022
Brief Description of Research Project	<p>The Federal Highway Administration (FHWA) is looking into allowing a risk-based approach for scheduling bridge inspections. However, diverging from the uniform 2-year cycle used by most state bridge owners to schedule inspections might require significant time and resources to adjust. The risk-based approach proposed by the FHWA is based on expert judgement which could be subjective and inaccurate. Also, the FHWA risk-based model only focuses on determining inspection time, but not inspection type or method. Therefore, in this research project we aim to develop a robust decision framework that will help enhance the risk-based inspection, minimize subjectivity, and streamline the inspection planning process. Bayesian analysis will be used to integrate deterioration models and inspection data with expert judgment to improve the robustness of the decision process. An optimization problem will also be formulated to help determine the inspection method that will help maximize the probability of damage detection before failure and minimize inspection cost. The location and properties of bridges will also be incorporated in the planning process to</p>

	<p>facilitate the logistics of inspection actions. The framework will be applied on low-risk bridges in Colorado, which is expected to lead to most cost-savings.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none"> <li>• Reports</li> <li>• Project Website</li> </ul>	