

Developing Implementation Strategies for Risk Based Inspection  
**Progress Report – 6/30/2023**

**Project Number:** TR201910

**Principal Investigator (PI):** Glenn Washer

**Co-PI(s):** Henry Brown

<b>Award date:</b>	11/1/2018		
<b>Scheduled completion date:</b>	3/30/2023	<b>% of project completed to date:</b>	74%
<b>Total budget:</b>	\$850,000	<b>% of budget expended to date:</b>	73.3%
<b>Draft report due:</b>	8/31/2023	<b>Final report due:</b>	10/31/2023

*Dates should match those listed in the contract. If unsure, contact your MoDOT project manager.*

**Noteworthy items achieved this quarter.** *Provide a 4-5 sentence summary of work completed this quarter. Include meetings, work plan status, significant progress, etc. Additional details can be included in “Additional project information” below.*

Back-casting and updating of risk model spreadsheets were completed for participating states. A sensitivity analysis and examples were developed to illustrate how the models work and be implemented. Weighting of attribute using a multi-objective analysis process was completed. A method to calculate the consequence of a bridge with a numeric scale instead was developed and tested against NBI data. Statistical analysis was performed to analyze potential relationships between condition ratings and condition states based on data from eight states using element level data. Risk models for each state are being summarized and expected to be distributed in the early part of this quarter. See additional notes.

**Anticipated work for next quarter.** *Provide a 4-5 sentence summary of work planned for next quarter.*

The primary focus for the coming quarter is to finalize draft risk models to share with participating states for review and comment. One objective for the quarter is to circulate the draft risk models for comment on the data sources for the revised models. Work on the final report and the handbook for RBI implementation will continue in the coming quarter for submission in draft final report form later in the quarter. Data from the research will be collated for inclusion in the draft final report.

**Identify any circumstances or issues that may need to be addressed.** *Provide a summary of issues that are important for the TAC to know. For example, staffing difficulties or supply chain delays.*

The project was delayed by the pandemic. The research team has been working toward completing work in as timely a manner as possible. There have been staffing issues due a student leaving the project due to unavoidable circumstances. Recent changes in FHWA policy and the SNBI required updates to the analysis that have been more time consuming than expected. A RAP meeting needs to be held for one remaining state. The final report has been initiated and data is being collated. Every effort is being made to complete the final report in a timely manner.

**Deadline for next deliverable.** *For example, quarterly report, draft report, presentation, etc.*

Draft final report      8/31/2023

**Additional project information that MoDOT and technical committee should know.**

An analysis of new FHWA guidance policy to summarize the policy has been developed. The risk models for each state are being summarized for distribution to states which has taken longer than expected. The summary provides an analysis that compares the risk models to the FHWA guidance and suggests changes that may be necessary to implement the risk models. Sources of data for all attributes are also analyzed in the summary. Correlating the risk models with the SNBI update has been completed. A summary of the overall process and the methodology developed for ranking consequence factors is also included in the summary to be distributed. The summary provides an analysis of how the models fit with the FHWA guidance for each state, with suggestions for additional screening criteria needed to match FHWA is being completed. Additional data that will be needed for states to implement the model, such as additional inspection data that may need to be documented, are being assessed for each risk model. The PI has held discussion with FHWA regarding implementation of guidance in an effort to resolve conflicts and identify expectations. These discussions have been beneficial for clarifying expectations and resolving some conflicts, and discussions are ongoing.