Developing Implementation Strategies for Risk Based Inspection

**Progress Report –** 9/30/2022

**Project Number:** TR201910

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

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

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| **Award date:** | 11/1/2018 |
| **Scheduled completion date:** | 6/30/2023 | **% of project completed to date:** | Click here to enter text. |
| **Total budget:** | $850,000 | **% of budget expended to date:** | 61.3% |
| **Draft report due:** | 3/31/2023 | **Final report due:** | 5/31/2023 |

*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.*

Significant progress toward completing the risk models and backcasting for 5 participating states was completed this quarter; an intitial risk model was developed for a 6th state and the backcasting is initiating for that state. Risk models are being updated to reflect recent changes in the SNBI to include additional element ratings where appropriate. The re-analysis of NBI data was completed, and these data are being used to estimate probability of failure data to support the qualititive risk models. A more quantitive consequence analysis based on analysis of key NBI data fields has been developed and is currently being completed and included in the back-casting analysis.

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

In the next quarter, the risk models developed to date need to be reviewed by the participating states to identify any issues and confirm data sources. Also, there remains one partipating state to hold a RAP meeting, and that is planned for the coming quarter. The consequence analysis model will be completed and applied to the back-casting to complete a draft of those data to share with particpating states.

**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 and the research team is working toward completing work in as timely a manner as practical. There have been staffing issues due a student leaving the project temporarily due to unavoidable circumstances. Additonally, the re-analysis of NBI data required a signficant amount of time to identify the errors in the data, notify FHWA, and have the data corrected by the FHWA. The project continues to lag behind schedule due in part to these 3 issues. There remains one state for whom a RAP meeting is planned; several attempts to coordinate the meeting have not yet been successful, in part because of the pandemic and its unpredictable logistics- efforts are being made to complete this task.

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

Quarterly report **12/31/2022**

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

The project is behind schedule and efforts are being made to advance as quickly as possible. A key student experienced an immigratin issues this quarter and this has been an additional challenge. In the coming quarter, the risk models developed as part need to be shared with the participating states to gather comments and consider any changes that may be needed.

As noted in the body of the report, the re-analysis of NBI data consumed a lot of time and contributed to the project falling behind schedule. The issue was that the LTBP bridge portal was providing data that did not match the data being presented on the web site. The web site data had bridge numbering issues corrected; the downloaed data was uncorrected. Identifying this issue was challenging, and a significant amount of work had to be discarded and the models re-completed. Participating states should be aware the there are errors in the analysis of results in the interim report for this project as a result of this issue - revised data is available upon request and will be included in future reports.

Abbreviations

SNBI: Specifications for the National Bridge Inventory

NBI: National Bridge Inventory

RAP: Reliability Assessement Panel

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