



# LRRB Research Need Statement

LRRB-5

Date: March 8, 2021

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<b>Submitted by:</b>	LRRB via Priority Process			
<b>Originated from:</b>	LRRB Idea Solicitation Process (Pre-Screen Board Mtgs)			

**Select Type:**

Research    OR     Implementation

**Need Statement Title:**

Minnesota’s State and Local Bridge Safety Inspection Program - Evaluation

**Need Statement:** Describe the problem or the opportunity. Include background and objective.

**Background**

Minnesota’s cities, counties, and MnDOT Districts are required by state and federal regulation to conduct bridge safety inspections. Compliance (and or lack of) the Federal requirements has implications of federal bridge funding. To assist with completing the inspections, annually, MnDOT offers a one-day refresher workshop on use of the Bridge and Structure Inspection Program Manual (BSIPM) and the accompanying Field Manual along with any changes and best practices to ensure compliance with the National Bridge Inspection System (NBIS).

Recently there have been changes to the federal inspection process, the proposed 2019 FHWA NBIS rule changes for Bridge Safety Inspection and the FHWA new Specifications for the National Bridge Inventory (SNBI) coding guide will result in changes in process and documentation requirements. Thus, state policies and procedures identified in the BSIPM will need to be modified to ensure compliance with the new NBIS/SNBI requirements and to promote consistent and uniform methods of inspection and documentation.

The FHWA goal in updating the program is to maintain safe bridges without disruption to the users. Bridge safety issues create potential economic hardship but more importantly, can result in loss of life. With scheduled inspections and sound management of all the data collected as part of those inspections, bridge owners can plan necessary preventative maintenance and schedule rehabilitation or replacement work more effectively.

MnDOT has been a leader in adopting technologies that create a more informed and less disruptive inspection and as new technology continues to evolve (i.e., the use of drones, underwater inspection using sonar, etc.) new process and procedures must be developed.. **One concerning issues is that, cities and counties do not always have the necessary resources and staff training to conduct highly technological inspections;** and although MnDOT has the tools and the knowledge they may not have the capacity to provide those services on the local system?



**What is needed:**

The focus of this project should be to review the MnDOT Bridge Safety Inspection program and answer the following questions:

- There are various approaches a local agency may use to fulfill their bridge inspection needs. Some agencies use in-house trained staff, some use bridge consultants, and some use MnDOT District assistance. What are the pros, cons and cost to these different approaches?
- What improvements can be made to ensure inspections are done accurately, timely and cost effectively?
- Does MnDOT's current policies and procedures result in an effective bridge safety program statewide?
- What bridge data and information is being generated that **is not** being used to its full potential for better investment decision making?
- Does the time investment and resources meet the bridge inspection safety goals?
- Is there a level of effort that is not resulting in improved inspections or better management of the critical assets the bridge program represents?
- What are the technological advancements that Minnesota should fully embrace for improving our bridge safety knowledge during an inspection; how should they be deployed and implemented?

**Suggested Deliverables:**

Review and analysis of Minnesota's Bridge Safety Inspection Program including a road map to improve the process (Report)

**How does this project build upon previous research (include title or reference to a completed research effort)?**

[BRIDGE SAFETY INSPECTION AND NBIS BRIDGE INSPECTION PROGRAM ADMINISTRATION – TRS 1308, published June 2013](#)

**Provide names to consider for a Technical Advisory Panel:**

Minnesota County Engineers Bridge Committee, Brian Pogodzinski (Houston County) - Chair; MnDOT Bridge Office designees; Jennifer Wells-fracture critical /drone inspection, David Hedeem- bridge inventory management, Tom Miles-D6 Bridge Inspection, Dave Conkel-State Aid Bridge, Ed Lutgen-State Program Manager, Bruce Hasbargen-Beltrami County, Sam Muntean-Lac Qui Parle, Tim Stahl-Jackson County; Mark LeBrun, Pine County; Rachel Gregg (St. Louis County Bridge Engineer) Brent Christian- City of St Paul, FHWA: Tim Anderson (MN); Consultants: Ron Benson- (Stonebrooke), Barritt Lovelace (Collins Engineers), Jon Siiter (LHB)