

NCHRP 20-68 – “US Domestic Scan Program”

Domestic Scan 20-01 “Successful Approaches to Utilizing Bridge Management Systems for Strategic Decision Making in Asset Management Plans”

Bridge management systems (BMS), first introduced to help manage bridge inventory and inspection data and to support the National Bridge Inspection Standards (NBIS) In the early 1990s, today continue to provide support for managing bridge inventory and inspection data at both an element level and component level and typically include other functions, such as inspection photo/document management, project tracking, modeling and optimization of maintenance decisions. However, BMS today must operate within the context of the 2012 “Moving Ahead for Progress in the 21st Century” (MAP-21) legislation that requires states to demonstrate that they have pavement and bridge asset management systems as part of more comprehensive Transportation Asset Management Plans. (TAMPs) The legislation defines asset management “as a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the lifecycle of the assets at minimum practicable cost.”

Despite the advances made over time in BMS, many state DOTs face challenges in developing, implementing and maintaining data-driven, risk- and performance-based management at a system level. While most agencies have succeeded in establishing processes to maintain inventory data and manage the inspection process, many still struggle to utilize their BMS to help support decision-making utilizing available data while considering the risk and performance implications of their investment decisions. There are many different bridge management systems at different levels of maturity, and hence significant variability in how states approach bridge management within the context of the TAMP overall. This scan will help identify common features and approaches being used by agencies to successfully use BMS within the overall transportation asset management context. Particular attention will be given to examination of leading practices for predicting future bridge condition and developing deterioration curves. The Scan Team will investigate agency practices and case studies that illuminate such concerns as (1) data collection and management, (2) performance measure tracking and reporting, (3) use of component- and element-level data to track and forecast bridge condition, (4) usage of BMS data to convey condition information, and (5) agencies’ knowledge transfer strategies to sustain staff qualified to operate their BMS.

This scan is anticipated to be conducted as Type 3- Peer Exchange. By documenting and sharing successful practices the scan team will produce a valuable resource for use by agencies in effectively integrating BMS data into their TAMP to successfully improve or preserve the condition of the assets and the performance of their system. The audiences for this information would include AASHTO Committee on Performance-Based Management, Committee on Bridges and Structures, asset management and bridge preservation staff within state, local or other transportation agencies.

Original Scan Proposal Title: Best Practices for Developing, Implementing And Maintaining An Effective Bridge Management System

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Activity	Planning Milestones (minimum months prior to scan)	Tentative Schedule - Scan # 20-01 Successful Approaches to Utilizing Bridge Management Systems for Strategic Decision Making in Asset Management Plans
Chairs and Team Members Identified	D-5.5	March - April 2020
SME Selected	D-5	March - April 2020
Desk Scan Completed	D-3.5	August 2020
Organizational Meeting Held	D-3.5	August 2020
Host States Confirmed	D-3	September 2020
Rough Itinerary Developed	D-2.5	October 2020
Travel Arrangements Made	D-2	November 2020 - February 2021
Draft Agenda for Scan Drafted	D-.75	November 2020 - February 2021
Ground Transport Arrangements Completed	D-.5	February 2021
Briefing Materials Distributed	D-.25	March 2021
Prescan Conference Call Held	D-.25	March 2021
Scan Conducted	D	March 2021
Thank You Letters Sent to Hosts	D+.25	April 2021
Draft PowerPoint submitted by SME	D+.5	April 2021
Final PowerPoint Submitted by SME	D+1	April 2021
Draft Report Delivered to NCHRP and Panel	D+3	June 2021
Final Report Delivered to NCHRP	D+5	August 2021