Description of Scan

Bridge maintenance engineers must employ a decision process to convert performance indicators into a prioritized listing of bridge maintenance and repair needs. Modern materials, equipment, innovations in methods, and new applications of familiar products can increase productivity, provide long-lasting repairs, and minimize traffic disruption. Maintenance forces using these enhancements are able to improve the service life of more bridges with the same or fewer resources.

The decision process, however, is critical, as bridge preservation requires timely intervention with effective treatments to address minor deficiencies before significant problems develop. In most states, the bridge maintenance engineer does the process manually with little or no formal guidelines. A decision support system to assist in determining the prioritized list of bridge needs using appropriate performance indicators would assist the engineer in the development of an effective work plan.

This scan will focus on identifying and visiting states that have developed an automated decision support system for bridge maintenance programming. This scan will address how decisions are being made about routine maintenance and major rehabilitations and reconstructions to minimize traffic disruptions and control agency life-cycle costs. Staff to be interviewed would be bridge engineers responsible for developing the bridge maintenance program.

One objective of the scan would be to identify effective decision support systems already in practice, list the benefits and costs of such a system, document the algorithm logic, and identify the performance indicators used by the system. A second objective of the scan would be to provide a compendium of productivity enhancing techniques, applications, and equipment for activities aimed at maintaining and preserving highway structures. Included in the review would be practices and innovations that minimize disruptions to the mobility needs of highway users during the preservation/maintenance operation without comprising the quality of the activity.

The primary target audience would be state and local bridge maintenance engineers, but structural engineers and asset managers would also be interested. Successful systems could serve as a model for a similar system that would be incorporated into state or national bridge management systems, which in turn would lead to a more robust bridge preservation program. The details on innovations and strategies that can be employed by operations forces to ensure high quality results are achieved in the most productive manner would aid state and contractor preservation and maintenance crews, reduce the cost of the activity, and allow for more work to be accomplished with the same resources. The limited preservation and maintenance program dollar would be stretched.

Successful programs could be detailed in a supplemental manual to the AASHTO Maintenance Manual. The supplemental manual would be valuable for bridge maintenance engineers, managers, technicians, and supervising foremen. Managers involved with specifications for bridge preservation and maintenance would also find the manual helpful.

Original Scan Proposal Title:
1. Best Bridge Management Practices
2. Decision Support System for Bridge Maintenance
3. Productivity Enhancements for Bridge Preservation And Maintenance Activities.

Last Reviewed/Revised October 26, 2010

Scan Team Membership

Peter Weykamp, AASHTO Co-Chair
Bridge Maintenance Program Engineer
New York State Department of
Transportation
50 Wolf Road, POD 5-1
Albany, New York 12232
Office: 518-457-8485
Fax: 518-457-4203
Cell: 518-935-7470
E-mail: pweykamp@dot.state.ny.us

Bruce V. Johnson
State Bridge Engineer
Oregon DOT
Bridge Engineering Section
355 Capitol St., NE, Room 301
Salem, Oregon 97301
Office: 503-986-3344
E-mail: bruce.v.johnson@odot.state.or.us

Keith Ramsey, P.E.
Director of Field Operations
Bridge Division
Texas Department of Transportation
118 E. Riverside Drive
(Mailing: 125 East 11th Street)
Austin, TX 78701
Office: 512-416-2250
Cell: 512-788-4933
Fax: 512-416-2105
E-mail: kramsey@dot.state.tx.us

Wade F. Casey, FHWA Co-Chair
Bridge Management Engineer
Federal Highway Administration (FHWA)
HIAM-10
1200 New Jersey Avenue, SE
Washington, District of Columbia 20590
Office: 202-366-4606
Fax: 202-366-9981
E-mail: wade.casey@dot.gov

Arthur D'Andrea
Bridge Engineer Administrator
Louisiana Department of Transportation and
Development
P.O. Box 94245
Baton Rouge, LA 70804-9245
Phone: 225-379-1319
Cell: 225-505-5455
Fax: 225-379-1786
E-mail: arthurd'andrea@dotd.la.gov

Scot Becker
Development Chief and State Bridge
Engineer
Wisconsin Department of Transportation
4802 Sheboygan Avenue
PO Box 7916
Madison, Wisconsin 53717
Office: 608-266-5161
Fax: 608-266-5166
E-mail: scot.becker@dot.state.wi.us

Dr. George Hearn, SME
University of Colorado at Boulder
428 UCB
Boulder, Colorado 80302
Office: 303-492-6381
E-mail: George.Hearn@colorado.edu

Execution Schedule

Milestone	Anticipated Date
Chairs and Team Members Identified	November, 2008
Desk Scan Completed	January, 2009
Prescan Meeting Held	January, 2009
Scan Conducted	May-June, 2009
Draft PowerPoint submitted by SME	July, 2009
Draft Report Delivered to NCHRP and Panel	September, 2009
Final Report Delivered to NCHRP	August, 2010

Estimated Scan Cost and Funding

Actual cost and duration: $ 133,700; 2 week

Last Reviewed/Revised October 26, 2010