National Bridge Management and Preservation Initiatives

Northeast Bridge Preservation Partnership Meeting
September 28, 2010
Hartford, CT

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Director, Office of Asset Management
Federal Highway Administration
Presentation Scope

- Asset Management:
  - What is it and why is it important
- National Perspective:
  - Factors
  - Needs
- National Initiatives:
  - Bridge Management
  - Bridge Preservation
What is Transportation Asset Management?

“Transportation Asset Management is a strategic and systematic process of operating, maintaining, upgrading and expanding physical assets effectively throughout their lifecycle. It focuses on business and engineering practices for resource allocation and utilization, with the objective of better decision making based upon quality information and well defined objectives.”

AASHTO Subcommittee on Asset Management
What is Transportation Asset Management?

- Knowing What You Have
- Knowing What You Need
- Making Money Go Far as Possible
Why Transportation Asset Management?

“As government providers and operators of transportation systems, we face an increasingly complex challenge of improving safety, mobility and the aesthetics of our highway system in an environment of constrained resources. **Implementing an asset management approach is essential** to ensure that we invest the public funding entrusted to us wisely, and that we minimize long-term costs in achieving our desired service level objectives.”

*Neil J. Pedersen, Administrator, Maryland State Highway Administration and Vice-Chair, AASHTO Subcommittee on Asset Management*
Why Transportation Asset Management?

Do the Right Thing…

At the Right Time…

In the Right Place…

At the Right Price!!!
National Perspective, Factors

Concern regarding a number of factors:

- Rising traffic demand, heavier loads
- Continued bridge aging and deterioration
- Limited funds for rehabilitation and replacement
- Inadequately funded maintenance and preservation programs
National Perspective, Factors

States are experiencing:
- Reduced revenue streams
- Diminished buying power
- Competing cross-asset demands for available funds
Cross-Asset Demands

RESOURCES

- Preservation
- Operations, Safety
- Capital Improvement
- Schools, EMS, Fire, Police
National Perspective, Needs

There is a need to:

1. Assess the effectiveness of current preservation and maintenance strategies

2. Maximize the benefits of systematic preventive maintenance

3. Examine preservation procedures that lead to improved operational performance
Also, there is a need to:

4. Examine strategies, innovations and technologies

5. Support Research and Development

6. Protect the investment
Number and Status of Bridges in the U.S.

603,245 NBI Bridges

11.7% Structurally Deficient
13.3% Functionally Obsolete

2009 NBI Data
What is Bridge Preservation

...activities performed on bridge elements or components that *aim to prevent, delay, or reduce deterioration*. Bridge preservation activities does not entail structural or operational improvements of an existing bridge asset beyond its originally designed strength or capacity.

Source: AASHTO Subcommittee on Maintenance Bridge Technical Working Group draft definition
What is the Goal of Bridge Preservation?

...increase the service life of bridge(s) using cost-effective, timely strategies, forestall major reconstruction.
National Bridge Preservation Workshop

- April 17 – 18, 2007 in St. Louis

- Theme: *Sharing Bridge Preservation Strategies*

- 170 Attendees

- Attendees suggested a workshop every 2 Years
National Bridge Management, Inspection, and Preservation Workshop

• 2011

• Location: TBD

• Includes bridge management, inspection and preservation tracks
TSP Bridge Preservation Research, Development & Implementation Roadmap Workshop

• May 22 - 23, 2007 in Dallas, TX

• 5 Years of Bridge Preservation Research Needs

• 6 Breakout groups wrote some 25 Research Needs Statements

• $13 M total estimated research needs
AASHTO Transportation System Preservation Technical Services Program (TSP²)

- Supports Bridge and Pavement preservation program
- Strategic Collaborative Approach
- Oversight Panel
- AASHTO Voluntary Fund Account
AASHTO TSP^2 (cont’d)

• Sets Preservation Policy for AASHTO
• Will Support Regional Bridge Working Groups
• Will Provide on-call technical support
• Technology Sharing via Website: www.tsp2.org
Bridge Management Peer Exchanges

- **Purpose:** To exchange State Transportation Department policies and procedures, identify commendable practices that enhance quality and improve effectiveness in bridge management, and identify bridge management issues for future resolution.

- **Objectives:** Enhance quality and improve effectiveness of bridge management.
Bridge Management Peer Exchanges

• Two Planned for FY 2010:
  – Midwest States: MN, IA, WI, IL, MI, IN, OH and MO
  – Pacific Northwest States: WY, ND, ID, HI, MT, OR, AK, SD, NE and WA

• One Planned for FY 2011:
  – Northeast States: MA, MD, ME, NH, NJ, NY, RI, and VT
OIG Phase I Report Released 1/12/09

Memorandum

U.S. Department of Transportation
Office of the Secretary of Transportation
Office of Inspector General

Subject: Action: National Bridge Inspection Program: Assessment of FHWA’s Implementation of Data-Driven, Risk-Based Oversight
Federal Highway Administration
Report Number MH-2009-013

Date: January 12, 2009

From: Joseph W. Comé
Assistant Inspector General
for Highway and Transit Audits

To: Federal Highway Administrator

This report provides the results of our audit of the Federal Highway Administration’s (FHWA) actions to address recommendations made in our March 2006 report to improve its oversight of states’ bridge inspections, load ratings, and maximum weight postings (postings). We also reported that FHWA should encourage states to use more detailed data to manage their bridge programs.

The safety risks of the Nation’s nearly 600,000 bridges were underscored when the Interstate 35W Bridge (I-35W) in Minneapolis, Minnesota, collapsed on August 1, 2007, killing 13 people. According to the American Association of State Highway and Transportation Officials (AASHTO), the average bridge in the United States is 43 years old and almost one in four bridges either has major deterioration, cracks, or other deficiencies in its structural components or is functionally obsolete. Further, despite a 16-percent increase in funding for the Federal Highway Bridge Program, from $4.3 billion in fiscal year 2001 to $5.0 billion in fiscal year 2007, FHWA recently estimated that $65 billion could be invested immediately to address current bridge deficiencies.

Shortly after the I-35W bridge collapse, the Secretary of Transportation asked us to determine whether FHWA’s National Bridge Inspection Program delivered the...

OIG report: recommendations (excerpts)

• Require NBI Data errors be corrected

• Increase FHWA’s use of *element level data*
  – Coordinate with AASHTO to update current CoRe standards, incorporate into the NBIS, and develop plan to collect the element level data

• Identify states most in need of *targeted assistance* with their BMS
Action Plan: Highlights (excerpts)

• Bridge Management
  – Perform a *national survey* of the FHWA Divisions regarding bridge management system implementation
  – Based on the survey, develop a *targeted assistance* plan
  – Provide assistance based on that plan
NCHRP U. S. Domestic Scan Project 07-05: Best Practices in Bridge Management Decision Making

- Completed June 2009
- Visited States of: WA, CA, MI, OH, FL, DE and VA
- Focus on State practices for identification, prioritization and execution of programs for maintenance of Highway Bridges.
- Webinar Held on November 19th CA, MI featured states
- Webinar Held on December 17th, featured states of OH, WA, VA
NCHRP 20-24(37)E Measuring Performance Among State DOTs. Sharing Best Practices

- Completed August 2010
- Bridge Condition from NBI (2009)
- Kansas, Georgia, New York, and Utah
- Making the Case for Bridge Management
- Emphasizing Bridge Preservation
- Construct Maintainable Bridges

- Future Direction
- Use current NBI data
- Transition to element level data
- Focus on Deck Area
- Good, Fair and Poor
New FHWA Staffing

• Focus on Safety:
  – Recent hires – 4 safety, 1 BM
  – Goal to improve National Bridge Inspection process
  – Levels of Compliance – 23 indices
  – Risk-based, data-driven
  – Update “Recording and Coding Guide”
  – Work Plan on collecting element level data
  – NPRM for Tunnel Inspection Standards
Bridge Preservation Expert Task Group

- Goal:
  - To advance Bridge Preservation and Maintenance Practices,
  - Identify gaps
  - Take action to eliminate gaps
- State DOT, Industry, Academia membership
- BPETG will meet once or twice a year
- Initial meeting held in June 2010.
Bridge Preservation Association

- BPA planning meeting at TRB, Washington, DC on January 14, 2010
- BPA Webinar held on January 28, 2010
- www.bridgepreservationassociation.org
Congress

- H.R. 3999 and S. 3338 – identical
  - Expired once 111th Congress took over
- Both had potential to significantly change the bridge program
- Action by 111th Congress is uncertain
- Concepts included in next highway act authorization
111th Congress Activity

- March 24, 2009: H.R. 1682
  - Introduced and referred to House Committee on Transportation and Infrastructure

- Purpose: *To amend title 23, United States Code, to require States to develop and implement highway bridge management systems*
The FHWA is directed to …

- complete its initiatives to use a more **risk-based, data-driven** approach to its bridge oversight,
- take steps to address holes in the bridge oversight process,
- move forward with this process expeditiously, and
- to provide semi-annual updates to the House and Senate on the progress toward improving its oversight of bridge safety.
Closing Thoughts

- Bridge Management will play an increasingly important role in future years.
- Level of sophistication of BMS’s to increase, data will improve the accuracy, availability, and usefulness.
- Emphasis of the use of performance measures.
Closing Thoughts (cont’d)

- FHWA will continue to emphasize and support bridge management and preservation initiatives through:
  - Regional Work Groups,
  - AASHTO TSP2,
  - National Workshops,
  - Bridge Management Peer Exchanges,
  - Bridge Expert Task Group
  - Research
  - AASHTO AM, SCOM and SCOBS
  - Bridge Preservation Association
Thanks for your Time and Attention!
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