National Bridge Inspection Program
Metrics Introduction

Risk-based, Data-driven FHWA Oversight

National Bridge Management, Inspection and Preservation Conference
St. Louis, Missouri
October 31—November 4, 2011
Overview

• Background: Why are we doing this?
• Differences between past and new
• Metrics process
• Current process status
• Efforts for consistency
• FANBITF
• FHWA Bridge Safety Engineer team
Background:
Why are we doing this?

• Recognition by FHWA of several opportunities for improvement
• NBIP continually identified as high-risk area
• Concerns by States that level of oversight is not consistent across the nation
• OIG & GAO audits
• I-35W bridge collapse – increased interest in bridge performance
• FY 2010 Appropriations Act
OIG Audit Recommendations

Develop and implement

– Minimum requirements
  • Data-driven, risk based bridge oversight during annual NBIS compliance reviews

– Detailed criteria
  • Determine compliance with greater consistency

– A policy
  • Defining procedures Division Offices follow to determine compliance with the NBIS
OIG Audit Recommendations

Develop comprehensive plan

- Routinely conduct systematic, data-driven analyses
  - identify nationwide bridge safety risks
- Prioritize identified risks
- Target higher priority risks
- In implementing the plan:
  - HIBT to prioritize nationwide bridge safety risks
  - Division offices to work with states to remediate higher priority nationwide bridge safety risks
Conference Report to FY 2010 Appropriations Act

Strong direction from Congress…

“The Committee expects the Federal Highway Administration to make more significant progress in improving its oversight of bridge conditions and safety over the course of fiscal year 2010.”
FHWA NBIP Oversight – BEFORE

• Annual NBIS review included variations of:
  o targeted sampling
  o files and documentation review
  o on-site bridge visits
  o NBI data checks
  o interviews
  o procedures review
• General guidance offered
• Single overall assessment of compliance
• Annual national summary report
What does the new NBIP oversight process look like?

• 23 Individual Metrics – each metric is...
  • linked to specific NBIS requirement

• 3 Assessment Levels – each level has...
  • specific criteria to be reviewed

• 4 Levels of Compliance – each level has...
  • specific thresholds to meet for compliance
What does the new NBIP oversight process look like? (cont’d)

• Consistent compliance across the Nation
• Compliance determined based upon statistical sampling
• Compliance status is continuously being assessed and updated
• “Final Summary of Metric Compliance Report” reported annually as of December 31
Assessment Levels

• **Minimum**: Division Bridge Engineer’s general knowledge and awareness of the state’s program in relation to the metric

• **Intermediate**: Review through random sampling of inspection records or files, analysis of NBI data, visits to bridges, interviews of inspectors, and documentation of qualifications

• **In-depth**: Supplementing intermediate review with larger random sample sizes, more interviews, and research of records and/or history
Compliance Definitions

• **Compliance**: Adhering to requirements of the NBIS.
• **Substantial Compliance**: Adhering to the NBIS with minor deficiencies. Deficiencies to be corrected within 12 months, unless most efficient to correct over next inspection cycle.
• **Non-Compliance**: NOT adhering to the NBIS regulation. Deficiencies may adversely affect overall effectiveness of the program. Also, failure to adhere to a previously approved plan of corrective action (PCA).
• **Conditional Compliance**: Taking corrective steps outlined in FHWA approved PCA. Deficiencies may adversely affect the overall effectiveness of the program.
Five (5) Year Cycle

• Year 0 – 2011 – Baseline review
  – All metrics reviewed at intermediate level
  – Develop review strategy for next five years
• Years 1-5 – Annual review
  – At least 1 intermediate review for each metric
  – Remainder at minimum level
• Year 5 is wrap-up with 5-year evaluation
  – Report evaluating program over 5 years
• Cycle repeats
March through Metrics (brief)

- Metric 1 – Organization
  - Policies, procedures
- Metrics 2-5 – Qualifications
  - PM/TL/LR/Diver
- Metrics 6-11 – Inspection Frequency
  - Routine/Rx/UW/UWx/FC/Dam-InDpth-Spec
- Metrics 12-21 – Inspection Procedures
  - Inspt/LR/Post/Files/FC/UW/SC/Complex/QC-QA/CF
- Metrics 22-23 – Inventory
  - Maintain Inv/Update Inv
Effect of Process

• Overhaul of how compliance with the NBIS is monitored and assessed by FHWA including:
  – clear expectations for each State
  – consistent criteria to judge each metric annually
  – compliance based upon criteria listed for each metric rather than unstructured policy

• Procedure for taking non-compliance action
  – clear, consistent guidance provided Divisions
Metrics Process

• New NBIS regulations were not created
• Metrics process intended to:
  – Remove subjectivity... to extent possible
  – Improve consistency nationwide
  – Provide clear expectations/measurements
  – Base oversight on random sampling
Current Metrics Status

- CY 3rd qtr status – 42 Divisions underway on all metrics, others not far behind
- Many metric assessments have been made
  - Many metrics in compliance/substantial compliance
  - Where NC is assessed, Divisions are working with their state to develop PCAs
- December 31 – Final assessment
Process Consistency

• Steps FHWA is taking:
  – Training: Nov ’10 – Jan ’11
  – FHWA National Bridge Inspection Program Oversight Team – NBIPOT
  – Use of data-based reports where applicable
  – Monthly BSE teleconferences
  – Sept/Oct face-to-face meetings
  – Internal Q&As to provide guidance/interpretation
  – PCA guidance
Process Consistency

• Bridge Safety Engineers role:
  – Training of DBEs
  – Develop & provide guidance
  – Work with and assist Divisions
    • Monthly teleconferences with Divisions
    • Some visits with Divisions
  – Biweekly BSE teleconferences
  – NBIPOT
  – Review Division compliance assessments and PCAs
FANBITF

- **Purpose**
  - Discuss 2011 baseline review process and results
  - Discuss ideas AASHTO & FHWA Divisions offer for modifications and improvements
  - Final decisions will rest with FHWA
- Several meetings July – Feb ‘12
- Questionnaire to States & Divisions
  - Gather comments, suggestions, etc
- Results: short term (‘12), long term (‘13+), NBIS Regulation issues
National Bridge Safety Engineers Team

Initial Points of Contact

- Barry Brecht, PE
  360-753-9556
  Olympia, Washington

- Tom Drda, PE
  919-747-7011
  Raleigh, NC

- Jon Nekritz, PE
  708-283-3535
  Matteson, Illinois

- John Thiel, PE
  202-386-9706
  Washington, DC

Notes:
- Washington D.C. and Federal Lands will be covered by John Thiel
- Puerto Rico will be covered by Tom Drda
National Bridge Safety Engineers Team

WEST
Barry Brecto, PE
Olympia, WA
National Bridge Safety Engineers Team

SOUTHEAST

Tom Drda, PE, Raleigh, NC
National Bridge Safety Engineers Team

**NORTHEAST**
John Thiel, PE
Washington, DC

Federal Lands

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NORTH-CENTRAL

Jon Nekritz, PE
Matteson, IL
Thank you

Questions