LOCAL BRIDGE INSPECTIONS

2024 Road School

Anthony Marino, Bridge Inspection State Program Manager
Anne Rearick, Director of Bridge Management
PRESENTATION AGENDA

- Central Office Bridge Inspection
- Importance of LPA Bridge Inspections
- Bridge Inspection 23 Metrics Review
- SNBI Implementation
- LPA Bridge Inspection Contracting
- Bridge Weight Limits
- Critical Findings
IMPORTANCE OF LPA BRIDGE INSPECTIONS
IMPORTANCE OF LPA BRIDGE INSPECTIONS

- **INDIANA BRIDGES: APPROXIMATELY 19,300**
  - 5,800 State owned/maintained – *State Bridge Inspectors*
  - 330 Indiana Tollway
  - 13,170 LPA owned/maintained – *Prequalified Bridge Inspection Consultants*

- **INSPECTION COSTS (2023):** Approximately $12.2 million
  - *Approximately $8.5 million for LPA Bridge Inspections!*

- **CRITICAL FINDINGS (2023):** 163 Incidents reported
  - Several required bridge closures
IMPORTANCE OF LPA BRIDGE INSPECTIONS

Fern Hollow Bridge:
The bridge collapsed on January 28, 2022 at 6:37 a.m.

10 people were seriously injured.

NTSB is finalizing the report.

The cause of the collapse was extensive corrosion and section loss of fracture critical members.

For more information, see the NTSB February 21, 2024 Board Meeting.
Fern Hollow Bridge Collapse takeaways:
Adequate maintenance records were not kept which lead to inaccurate load ratings.
Maintenance recommendations from the bridge inspections were not followed.
Concerns with the adequacy of the inspections
  • Failure to clean corrosion prior to measuring
  • Failure to accurately quantify remaining material
  • Failure to accurately rate the super structure
  • Failure to accurately identify fracture critical (NSTM) members
IMPORTANCE OF LPA BRIDGE INSPECTIONS

Federal-Aid Highway Act of 1968:
“…required the Secretary to establish the NBIS to ensure the safety of the traveling public on highway bridges, and directed the States to maintain an inventory of Federal-aid highway system bridges.”

Federal-Aid Highway Act of 1970 limited the NBIS to bridges on the Federal aid highway system.

The Surface Transportation Assistance Act of 1978 extended the NBIS requirements to bridges on all public roads.
IMPORTANCE OF LPA BRIDGE INSPECTIONS

23 USC § 144

National Bridge and Tunnel Inventory and Inspection Standards

- Inventory of *all* highway bridges on *public roads*.
- Minimum Requirements of Inspection Standards.
- Requires States’ Compliance with Minimum Inspection Standards.
  - Bridge and Tunnel Inspection Metrics
  - FHWA Reviews of States’ Compliance
IMPORTANCE OF LPA BRIDGE INSPECTIONS

23 USC § 144(h)(5)(A) – Penalties for Noncompliance

If a State fails to satisfy the requirements of paragraph (4)(B) by August 1 of the calendar year following the year of finding of noncompliance, the Secretary shall, on October 1 of that year, and each year thereafter as may be necessary, require the State to dedicate funds apportioned to the State under sections 119 and 133 after the date of enactment of the MAP-21 to correct the noncompliance with the minimum inspection standards established under this subsection.
BRIDGE INSPECTION 23 METRICS REVIEW
BRIDGE INSPECTION 23 METRICS REVIEW

BRIDGE INSPECTIONS: 23 METRICS

- Metric 1: Bridge Inspection Organization
- Metrics 2 to 5: Qualifications of Personnel
- Metrics 6 to 11: Inspection Frequency (or Intervals)
  - Routine, NSTM, Underwater, and Special Details
- Metrics 12 to 21: Inspection Procedures
  - Quality Inspections, Load Ratings, Post or Restrict, Bridge Files
  - NSTM, UW, Scour, and Complex Features
  - Quality Control and Assurance, Critical Findings
- Metrics 22 and 23: Inventory
BRIDGE INSPECTION 23 METRICS REVIEW

BRIDGE INSPECTIONS: 23 METRICS

- All metrics are reviewed every calendar year
- Results are reported annually to FHWA
- Three Assessment Levels
  - Minimum
  - Intermediate
  - In-Depth
BRIDGE INSPECTION 23 METRICS REVIEW

BRIDGE INSPECTIONS: 23 METRICS

- Compliance
- Substantial Compliance
  - “Close, but not quite there”
  - Agency typically enacts an Improvement Plan (IP)
- Non-Compliance
  - Not meeting the minimum requirements
  - Agency must execute Plan of Corrective Action (PCA)
- Conditional Compliance
  - PCA in place with measurable and reportable action items for execution
  - PCA approved by FHWA
ACTION ITEMS THAT ARE IMPLEMENTED AS PART OF ALL PAST COMPLETED IMPROVEMENT PLANS OR PLANS OF CORRECTIVE ACTION BECOME PERMANENT INDOT BRIDGE INSPECTION REQUIREMENTS THAT WILL BE ENFORCED.
BRIDGE INSPECTION 23 METRICS REVIEW

LAST YEAR’S FHWA REVIEW RESULTS

- NONE FOUND TO BE NON-COMPLIANT
- EIGHT METRICS ARE **CONDITIONALLY** COMPLIANT
- TWO METRICS ARE **SUBSTANTIALLY** COMPLIANT
EIGHT METRICS ARE CONDITIONALLY COMPLIANT

- METRICS 6, 7, 9, 10, AND 11: INSPECTION INTERVAL
- METRIC 13: INSPECTION PROCEDURES – LOAD RATINGS
- METRIC 18: INSPECTION PROCEDURES – SCOUR
- METRIC 23: TIMELY UPDATING OF DATA

ALL ARE UNDER APPROVED PLANS OF CORRECTIVE ACTION
BRIDGE INSPECTION 23 METRICS REVIEW

METRICS 6, 7, 9, 10, AND 11: INSPECTION INTERVAL

- **CURRENT**: Must meet frequency intervals; one month allowance for *DOCUMENTED UNUSUAL CIRCUMSTANCES*.

- **INTERIM NBIP**: Must meet frequency intervals plus acceptable tolerance up to 3 months.
  - Exceptions to inspection interval only for *rare and unusual* circumstances and must be *approved by FHWA in advance*.

**INDOT POSITION**: INSPECTIONS MUST MEET FREQUENCY INTERVALS AND INDOT IS NOT ADOPTING 3 MONTH TOLERANCE AT THIS TIME.
TIMELY EXECUTION OF ALL INSPECTIONS

- INDOT has contract in place for **ON-CALL BRIDGE INSPECTORS**.

- Earlier coordination done when LPA Contract could be late. **GOAL IS TO NOT BE PUNITIVE**.

- If timely Notice-to-Proceed cannot be secured within 30-Days prior to the First Calendar Day of the Compliance Month, INDOT will notify the LPA in advance that On-Call Bridge Inspectors will be mobilized.
BRIDGE INSPECTION 23 METRICS REVIEW

IF ON-CALL BRIDGE INSPECTORS ARE MOBILIZED:

- Inspectors will execute all field inspections, report any Critical Findings, and complete Inspection Reports in iTAMS **ON BEHALF OF INDOT**.

- **WILL NOT PUBLISH** Inspection Books, Inspection Reports, or the LPA Summary Reports.

- LPA will **STILL BE BILLED** by INDOT for 20% of this work.

- Contracts must be amended to remove the affected Inspection Phase.
BRIDGE INSPECTION 23 METRICS REVIEW

TWO METRICS ARE **SUBSTANTIALLY** COMPLIANT

- METRIC 12: PROCEDURES – QUALITY OF INSPECTIONS
- METRIC 21: PROCEDURES – CRITICAL FINDINGS **

**ISSUES ADDRESSED WITH BIM MEMORANDUM 24-01**
BRIDGE INSPECTION 23 METRICS REVIEW

METRIC 12: PROCEDURES – QUALITY OF INSPECTIONS

- Expectation is that as the condition ratings go down, the inspection report shall have greater level of details (photos, sketches, narratives).
- Reporting Defects: **TYPE, SIZE, LOCATION, SEVERITY**
- INDOT Quality Assurance – more bridges will be reviewed.
- Last Year’s Findings: INDOT QA Review (PY 2022)

https://www.in.gov/indot/div/pubs/QA%20Review%20of%202022%20Inspections.mp4
SNBI IMPLEMENTATION
SNBI IMPLEMENTATION

FHWA IMPLEMENTATION SCHEDULE

- April 2023 – FHWA Transition Tool made available.
- October 2024 – NBI NextGen Tool available for data validation.
  - INDOT using to pre-populate as many fields as possible in advance.
- March 15, 2025 – LAST DATA SUBMITTAL USING OLD CODE.
  - Calendar Year 2024: last year of collecting NBI data!
- 2026 & 2027 – March 15\textsuperscript{th} Submittals – Transition/Hybrid Data.
- March 15, 2028 – First Complete SNBI Dataset with \textit{Collected} and \textit{Verified} SNBI data for all bridges.
  - Calendar Year 2027 Bridge Inspection Field Operations.
SNBI IMPLEMENTATION

INDOT ACTIONS:

- Updating Qualification Requirements **
- Defining Inspection and Report Types **
- Updating Inspection Frequencies and Risk-Based Assessment Criteria **
- Sixense Developers creating SNBI Fields in iTAMS
- INDOT training and outreach efforts

** INDOT Revising BIM Part 1 and Part 2 by June 6, 2024.**
SNBI IMPLEMENTATION

PART 1 – ADMINISTRATION

- Revising Titles, Qualifications, and Responsibilities to meet new rules.
- Requires cumulative total of 18 hours of FHWA-approved bridge inspection refresher training over each 60-month period.

PART 2 – TYPES OF INSPECTIONS

- Inspection types.
- Bridge file requirements to meet AASHTO Manual for Bridge Evaluation.
- Re-writing inspection frequencies to meet new rules and defining INDOT’s risk-based inspection interval rules.
  - Method 1 = 48, 24, and 12 months
  - Method 2 = Same as Method 1 but allows a 72-month inspection interval.
SNBI IMPLEMENTATION

- PART 3 – LOAD RATING
  - Revising as needed to meet new rules.
  - Ensuring that all actions related to resolve PCAs are included.

- PART 4 – QUALITY CONTROL AND QUALITY ASSURANCE
  - Revising as needed to meet new rules.
  - SNBI Item IDs B.IE.08 and B.IE.09 will require data entries for Quality Control and Quality Assurance Dates.
  - Re-evaluating DISQUALIFICATION and REQUALIFICATION Protocols.

- OTHER PARTS AS REQUIRED – INCLUDING PCA IMPLEMENTATIONS.
SNBI IMPLEMENTATION

- Maintenance Record Documentation (part of Metric 15):
  - § 650.313 (n): Bridge files. Prepare and maintain in accordance with Section 2.2, AASHTO Manual.
  - AASHTO Manual for Bridge Evaluation (MBE) is part of the federal bridge inspection regulations by reference.
  - Article 2.2 requires bridge files to “Maintain relevant maintenance and inspection data…”
  - Article 2.3.7 – Maintenance and Repair History: “Include a chronological record documenting he maintenance and repairs to the bridge since its initial construction.”

*Maintenance/History Section is part of all assets in iTAMS and is where maintenance requests and records shall be maintained.*
EVERYTHING STARTS HERE:

INDOT Local Public Agency Program

https://www.in.gov/indot/doing-business-with-indot/local-public-agency-programs/
LPA BRIDGE INSPECTION CONTRACTING
LPA BRIDGE INSPECTION CONTRACTING

For all 92 Indiana Counties...
INDOT provides guidance and support in all steps of the Countywide Bridge Inspection Contracting Process

- Assisting Employees of Responsible Charge (ERCs)
- Obtaining your DES Numbers and DBE requirements
- Posting your Request For Proposal (RFP)
- Facilitating your LPA/Consultant and INDOT-LPA Contracts
- Assisting with FMIS requests
- Issuing your Bridge Inspection Notices to Proceed (NTP)
- And anything else that could go wrong when you are dealing with multiple State and Federal Agencies...

INDOT wants to help make your job easier!
INDOT must have contract compliance that satisfies federal regulations.

Regarding processing NTP early: INDOT can only receive FMIS 8 weeks maximum before the compliance month. Consultants will not get reimbursed for doing inspections early without INDOT authorization.

Consultants are urged to work closely with your counties to ensure that all contract steps and requirements are completed timely so that NTPs can be issued without needing to mobilize On-Call Inspection Consultant.
## LPA BRIDGE INSPECTION CONTRACTING

<table>
<thead>
<tr>
<th>Activity</th>
<th>Start Date</th>
<th>End Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request ES number</td>
<td>11/15/2024</td>
<td>11/29/2024</td>
<td>ERC to request and receive ES number for new contract from INDOT (14 DAYS)</td>
</tr>
<tr>
<td>Request ES goal</td>
<td>11/29/2024</td>
<td>12/13/2024</td>
<td>ERC to request and receive ES goal for new contract from INDOT (120 DAYS)</td>
</tr>
<tr>
<td>Submit RFP for posting</td>
<td>12/13/2024</td>
<td>12/27/2024</td>
<td>ERC to submit RFP for approval and subsequent posting to INDOT, while requesting a BIA check run confirmation (14 DAYS)</td>
</tr>
<tr>
<td>RFP requested to be advertised</td>
<td>12/27/2024</td>
<td>1/3/2025</td>
<td>INDOT internal activity (7 DAYS)</td>
</tr>
<tr>
<td>RFP advertised</td>
<td>1/3/2025</td>
<td>2/2/2025</td>
<td>INDOT internal activity (90 DAYS)</td>
</tr>
<tr>
<td>ERC team to score LOIs</td>
<td>2/2/2025</td>
<td>3/19/2025</td>
<td>ERC internal activity (90 DAYS)</td>
</tr>
<tr>
<td>Submit LOI scoring results</td>
<td>3/19/2025</td>
<td>3/22/2025</td>
<td>ERC to submit scoring results and contract selection to INDOT for approval (5 DAYS)</td>
</tr>
<tr>
<td>Approved to negotiate LPA/Consultant Contract</td>
<td>3/22/2025</td>
<td>3/29/2025</td>
<td>ERC to negotiate LPA/Consultant Contract (7 DAYS)</td>
</tr>
<tr>
<td>ERC to negotiate LPA/Consultant Contract</td>
<td>3/29/2025</td>
<td>4/2/2025</td>
<td>ERC internal activity (60 DAYS)</td>
</tr>
<tr>
<td>Submit LPA/Consultant Contract for approval</td>
<td>4/2/2025</td>
<td>4/14/2025</td>
<td>ERC to submit LPA/Consultant Contract to INDOT for approval (8 DAYS)</td>
</tr>
<tr>
<td>Approved to execute LPA/Consultant Contract</td>
<td>4/14/2025</td>
<td>4/24/2025</td>
<td>INDOT review of LPA/Consultant Contract and approval to execute notification to ERC via email (90 DAYS)</td>
</tr>
<tr>
<td>LPA/Consultant Contract executed</td>
<td>4/24/2025</td>
<td>5/15/2025</td>
<td>ERC to submit LPA/Consultant Contract to INDOT for approval (5 DAYS)</td>
</tr>
<tr>
<td>Submit FMIS request</td>
<td>5/15/2025</td>
<td>5/23/2025</td>
<td>ERC to prepare and submit FMIS request to INDOT (90 DAYS)</td>
</tr>
<tr>
<td>Request TIP/STIP for Amendment</td>
<td>6/23/2025</td>
<td>6/30/2025</td>
<td>INDOT to prepare and request combined TIP/STIP for amendment (INDOT internal activity (90 DAYS)</td>
</tr>
<tr>
<td>TIP/STIP approval</td>
<td>6/30/2025</td>
<td>7/25/2025</td>
<td>TIP/STIP approval is processed concurrently with INDOT/LPA contract step (160 DAYS)</td>
</tr>
<tr>
<td>INDOT/LPA contract prepared</td>
<td>7/25/2025</td>
<td>8/29/2025</td>
<td>INDOT/LPA contract prepared by INDOT (10 DAYS)</td>
</tr>
</tbody>
</table>

### Notes:
- All documents should be submitted to email BRIDGE INSPECTION CONTRACTS@INDOT.IN.GOV unless otherwise noted.
- For June and July contracts subtract one month from dates shown to account for potential fiscal year end delays.
- For dates falling on weekends or holidays, move target date back to the next full working day.

### Supplemental Contracts (Amendments):
The timeline activities for a supplement to the contract requiring additional funds would be: 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, and 26. Using the time periods for these activities yields a total of 298 days. Items 12 and 14 can be greatly reduced by clear communication between the ERC and INDOT Bridge Inspection Manager.


Relevant Forms: LPA Bridge Inspection Contract Timeline

Enter compliance date and spreadsheet provides deadline dates for timely NTP.
LPA BRIDGE INSPECTION CONTRACTING

What is needed to meet your compliance date without issues:

- Up-to-date ERC certifications
- Accurate LQRs
- If applicable, MPO coordination with current bridge inspection cycles.
- DES numbers included in TIP
- Timely submittals
- Notify INDOT of changes in county management structure
- Make sure all signatures are in place
  - Single signers: cell phone number and email address
- Contracts are accurate (start & end dates, signature dates)
BRIDGE WEIGHT LIMITS
QUESTIONS AND ANSWERS

Load Rating for the FAST Act’s Emergency Vehicles

REVISION R01
March 16, 2018

Office of Bridges and Structures
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

52. (Revision R01, March 16, 2018) A State has historically posted gross weight and not axle weight. In lieu of utilizing the recommended posting sign R12-7 or R12-7aP for emergency vehicles, can the State use the regular posting signs (such as R12-1, R12-5) to restrict all vehicles that exceed those posted weights?

Yes, it is acceptable to use a weight posting sign in lieu of R12-7 and R12-7aP with the following two conditions: 1) the posting limits on the sign are justified to be appropriate (generally conservative) in restricting the passage of the EVs; and 2) State law does not exempt the EVs from obeying the weight posting signs. However, for consistency and uniformity, it is strongly recommended that R12-7 or R12-7aP be utilized for bridges on the Interstate or within reasonable access.

Indiana Code § 9-20-1-1

Section 9-20-1-1 - Operation of vehicles exceeding size and weight limitations; prohibition

Except as otherwise provided in this article, a person, including a transport operator, may not operate or move upon a highway a vehicle or combination of vehicles of a size or weight exceeding the limitations provided in this article.

IC 9-20-1-1
Pre-1991 Recodification Citations: 9-1-6-18 part; 9-8-1-1 part.
Amended by P.L. 198-2016, SEC. 336, eff. 7/1/2016.

Indiana Code § 9-20-2-2

Section 9-20-2-2 - "Farm vehicle loaded with a farm product" defined; application of article

(a) As used in this section, "farm vehicle loaded with a farm product" includes a truck hauling unprocessed leaf tobacco.

(b) Except for interstate highway travel, this article does not apply to the following:

1. Machinery or equipment used in highway construction or maintenance by the Indiana department of transportation, counties, or municipalities.

2. Implements of agriculture when used during farming operations or when constructed so that the implements can be moved without material damage to the highways.

3. Farm drainage machinery.

(c) This article does not apply to firefighting apparatus owned or operated by a political subdivision or volunteer fire department (as defined in IC 36-8-12-2).

(d) Except for interstate highway travel, this article does not limit the width or height of a farm vehicle loaded with a farm product.

IC 9-20-2-2
Pre-1991 Recodification Citation: 9-8-1-18.8(a) part.

Indiana Code defines Size and Weight Limitations.

Indiana Code Allowance for Exceptions.
BRIDGE WEIGHT LIMIT SIGNS

Indiana Code comparison to FAST Act for Emergency Vehicles (EV)

**INDOT Bridge Inspection Manual previously allowed posting single tonnage GVW signs in lieu of requiring a separate EV sign. However:**

1. Is the posting limit on the sign justified to be appropriate (generally conservative) in restricting EV passage?  
   -  

2. Does State Law NOT EXEMPT EV from obeying weight posting signs at bridges?  
   -
Regulatory signs shall conform to the Indiana Manual on Uniform Traffic Control Devices (IMUTCD). INDOT has developed additional word message signs for bridge weight limits (safe posting load). These signs have a sign code prefix of R12-Y5. The sign details, including specific emergency vehicle signs, have been added to the INDOT Supplemental Sign Catalog and Appendix D of this document until such time as they are incorporated into the IMUTCD. The emergency vehicle signs are R12-7 and R12-7aP.

**Posting Signage for Emergency Vehicles.** For posting required due to emergency vehicle (FAST Act EVs) safe posting load, signs showing weight limits for emergency vehicles with single rear axle, tandem rear axle, and gross vehicle weight must be placed. The R12-7 sign may only be used when placed as a standalone sign. The R12-7aP plaque may only be used when placed below a commercial vehicle posting sign on the same post.
BRIDGE WEIGHT LIMIT SIGNS

INDOT Bridge Inspection Manual Part 3

- Since INDOT could not answer YES to both requirements, the Manual required the following revision for compliance.
CRITICAL FINDINGS
CRITICAL FINDINGS

FHWA wrote that “Missing or illegible signs are a public safety issue, and must be replaced according to the owner’s posting procedure. FHWA acknowledges that owners have a wide range of processes for addressing missing or damaged load posting signage.”

Continuing… FHWA wrote that “a 30-day maximum timeframe, from when the need is identified, to replace missing or damaged load posting signs is in the final rule.”
CRITICAL FINDINGS

From FINAL RULE in LOAD POSTING
§ 650.313 (l)(3) Missing or illegible posting signs shall be corrected as soon as possible but **not later than 30 days** after inspection or other notification determines a need.

From FINAL RULE in CRITICAL FINDINGS
§ 650.313 (Q)(i) Deficiencies include, but are not limited to ... any condition posing an imminent **threat to public safety**. At a minimum, include findings which warrant the following:

(E) Immediate load restriction or posting ... in order to remain open.
DISCOVERED MISSING LOAD RESTRICTION SIGNS – AT BRIDGE ENDS AND ADVANCED WARNINGS – SHALL BE REPORTED AS A CRITICAL FINDING.
If missing signage discovered by bridge inspectors – critical finding required.

If need for signage (new or more restrictive) resulting from any load rating analysis done – critical finding required.

If discovered by county/local forces – must be dealt with as a high-priority maintenance fix that must be corrected within 30-days. However, does not require a formal critical finding incident report.
QUESTIONS?
THANK YOU!

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