



# National Bridge Inspection Program Update

FHWA ILLINOIS DIVISION

2020

## ILLINOIS BRIDGE INVENTORY

- **Total No. of Bridges = 26,809**  
State: 7,853  
Local: 18,956
- **Average Age**  
State: 44 yrs.  
Local: 41 yrs.
- **Load Posted**  
State: 78  
Local: 823
- **Fracture Critical**  
State: 167  
Local: 307
- **Scour Critical**  
State: 26  
Local: 88
- **Percent Poor by Deck Area - NHS**  
2020: 13.6%  
2019: 12.3%  
2018: 11.6%

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## Federal Oversight of the NBIP— Updates

Each year, the Federal Highway Administration (FHWA) completes an annual assessment of Illinois' bridge inspection program. This effort evaluates Illinois' compliance with the [National Bridge Inspection Standards \(NBIS\)](#) regulation, which sets the requirements for all state bridge inspection programs.

In addition to the NBIS, the FHWA also published the "Metrics for the Oversight of the National Bridge Inspection Program", a policy that provides 23 metrics for FHWA to evaluate each year. The FHWA Illinois division office must assess each of the 23 metrics at either a minimum, intermediate, or in-depth level review each year.

During FHWA's most recent metrics review, covering Jan 2019 - Dec 2019, 16 metrics were reviewed at the at minimum assessment level, the remaining 7 metrics were Intermediate level.

### Proposed Rule Making - Revisions to the NBIS

In November 2019, a notice of proposed rulemaking for updating the NBIS was published in the Federal Register. [Notice](#).

Over 1600 comments were received by stakeholders. The effective final rule is currently anticipated in Spring 2021.

Notable potential changes in the rulemaking include:

1. Revised specifications for the NBI (Replaces the 1995 - Federal recording & coding guide)
2. Risk based inspection intervals
3. Load rating/posting requirements
4. Inspection of private bridges
5. Critical findings reporting

### Critical Findings Database (CFD)

The 2012 Moving Ahead for Progress in the 21st Century (MAP-21) Act called for establishment of new reporting and tracking procedure for critical findings found during bridge inspections. Therefore, FHWA has established a national comprehensive Critical Findings Database (CFD).

Reporting to the CFD began July 30th, 2020. The CFD is used to develop and track trends for critical findings across the nation, as well as help inform congress.

### Element Level Data Pilot

Illinois will be completing a second pilot in 2020, that evaluates the quality of element level data collection for NHS bridges.

### Summary

FHWA will continue the NBIS metric assessment annually, with a goal of reaching full compliance on all 23 metrics. An annual summary report is produced each year to document the review; the report is shared with the IDOT Bureau of Bridges and Structures (BBS).

FHWA is available for questions or comments you may have. FHWA also evaluates new ideas to improve the inspection program: this is especially true as standards evolve, equipment improves, and new technologies become available. See contact info on [Page 4](#).

Sincerely,

**Dan Brydl**, Division Bridge Engineer

**Curtiss Robinson**, Assistant Division Bridge Engineer



## New Performance Findings - 2020

Illinois continues to make improvement towards full compliance with NBIS requirements. A summary of the top four findings and activities are presented below. For more information, please contact IDOT BM&I Unit.

	I.	II.	III.	IV.
<b>FINDING</b>	Special inspections completed over one month late/not following interval	Scour evaluation documentation not available in all bridge files	Scour Plan of Actions have outdated contacts or missing minor details	NBI Item 113 rating not being updated based on the routine inspection findings
<b>ACTIVITY</b>	Bridges on reduced intervals/special inspections are generally higher risk and need to be inspected on-time	All bridges over waterways require a scour evaluation in the bridge file	Scour Plan of Actions need to be continuously monitored and updated as needed to be an effective tool	If lower substructure condition codes are based on scour, Item 113 should be reviewed/verified to ensure it matches the field conditions

(90) Inspection Date: 04/08/2014  
 Delinquent Inspection: Y  
 Delinquent Reason: NONE GIVEN

# Inspection Delays

The number of inspections delinquencies continues to decrease for both State and Locally owned bridges. As Illinois moves closer to having zero inspection delinquencies statewide it is critical that all overdue inspections include acceptable delinquency reasons or have an approved delay.

One way to prevent inspection delinquencies is to **request prior approval**, well in advance from the Bridge Management and Inspection (BM&I) Unit for anticipated inspection delays. These approvals are

intended only for rare and unusual circumstances, such as flooding, hazardous bridge site, etc.

Bridge inspection delay requests shall be sent by email by the Agency Designated Program Manager (PM) to:

[DOT.BBS.BridgeMgmt@illinois.gov](mailto:DOT.BBS.BridgeMgmt@illinois.gov)

If an inspection delay occurs, it is imperative to **provide** justification in the “delinquency reason field” on the inspection report. If justification is not provided for even just one bridge, the results in an automatic Substantial Compliance

determination for the entire State for that respective NBIS Metric.

Any bridge inspected over 4 months late, will result in an automatic Non-Compliance for the entire State. Therefore, any extended delays (>1 month) should be well documented and discussed with the IDOT BM&I Unit once a potential delay is discovered.



# Load Rating Inspections



A Load Rating Inspection (LRI) is required when:

- 1) Item 58 drops to "3" or less; or
- 2) Items 59; 60; or 62 drop to "4" or less.

This inspection is only used to perform detailed field measurements for load rating purposes and is not intended to replace the inspection comments on routine inspections. Team Leaders should not rely on any upcoming or pending LRI to thoroughly document inspection findings.

The LRI is often accomplished by in-house staff within IDOT's Bridge

Office or a consultant. Considering how far travel is to some sites, the LRI inspection staff depend on accurate location and descriptions of the distress that triggered the LRI to be documented in the routine inspection report.

If any inspection identifies a critical finding or an immediate safety concern, the inspector should take necessary action to protect the travelling public and notify the Program Manager as soon as possible. Do not wait for the LRI inspection staff to visit the site to determine appropriate course of

action, since scheduling of LRIs could be several months later.

FHWA considers Illinois' LRIs a “best practice” in the country and acts as great supplemental tool to routine inspections.

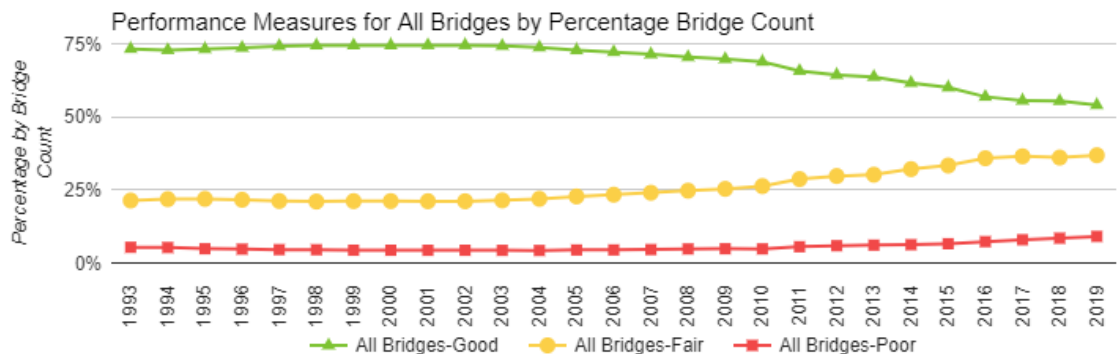
Remember that LRIs can also be requested at any time; however, keep in mind the staff/resources dedicated toward this effort are limited. You should not be using LRIs as a means to avoid your own thorough and complete inspections.

For more information, consult the Structural Service Manual - 2018 or contact [DOT.BBS.BridgeMgmt@illinois.gov](mailto:DOT.BBS.BridgeMgmt@illinois.gov)



# Local Bridge Condition

State - Illinois  
 Item 22 = "3" or "4"  
 2019 - 54% Good, 37% Fair, 9% Poor



# Special Inspections

Special Inspections are an effective tool for managing risk on special details or bridges in poor condition. The most common special inspections include Structural Damage/Deterioration, Underwater Condition/Scour, Special Problematic Details.

Many of the bridges on the special inspection program are only allowed to be open/posted because the established special inspection frequency and procedures are being followed. Otherwise, these bridges would require closure or have significantly reduced load limits.

### Important Notes

- It is **imperative** that personnel performing Special Inspections compare the conditions noted in the field to the previously noted conditions from the latest inspection.
- When a Special Inspection Condition Status code of "1" or "0" is applicable, the IDOT BM&I Unit should be contacted **immediately**.
- **Photographs** and supporting documentation is required to validate Special Inspection Condition Status code of "1" or "0".

### Other Notes

- Special Inspections are typically assigned when temporary measures are in place that keep bridges in service until permanent measures are installed.
- Special Inspections are not intended to replace In-Depth inspections.



Please be sure to **follow the established procedures and frequency** for special inspections. If there are continual issues with delinquencies or inadequate document, IDOT BM&I Unit reserves the authority to remove the Special Inspection requirements and post/close the bridge.

# Scour Monitoring

Per [FHWA-HRT-11-016](#), "**Scour** - the erosion of stream bed material around bridge foundations-is the **leading** cause of bridge failures in the United States."

FHWA's 2019 Metrics assessment included an intermediate review of Metric 18 - Scour Critical Bridges. A sample of 19 structures over waterways, was reviewed to determine if all appropriate scour evaluation documentation was in the bridge file.

### Findings

- 2 of 19 bridges did not have documented scour evaluations (this statistically implies that 10.5% of all bridges over waterways in Illinois do not have scour evaluations)
- All required POA's were developed; however, there were minor issues with out of date content

- Bridge Scour Assessment Procedure (BSAP) is still in use, but is currently being revised by the BM&I Unit.

### Action Items

- Please be sure to **check that your** bridge files have a documented scour evaluation and POA, as applicable. If no scour evaluation documentation, then another evaluation is required (possibly using BSAP)
- **Review** the validity of **Item 113** whenever there is a change in field conditions with observed scour or installation of scour countermeasures.
- Update POA contacts and information on a **regular basis**.

### Scour Monitoring Requirements

Specific triggers for scour monitoring during and after significant rainfall events should be developed for all bridges over waterways that are scour susceptible. BridgeWatch alerts are the most common alert notification/trigger for exceeded rainfall thresholds. If you are a PM, and are not receiving periodic BridgeWatch alerts, please contact the BM&I Unit.

IDOT is currently reviewing BridgeWatch to determine if the functionality is adequate and working as intended. Any feedback on warnings, alerts, thresholds, or any general recommendations to improve BridgeWatch is appreciated, [DOT.BBS.BridgeMgmt@illinois.gov](mailto:DOT.BBS.BridgeMgmt@illinois.gov)

# Efforts Underway

### Channel Cross Sections

Channel Cross-section records are required for all bridges over waterways. If there are no cross sections in the bridge file, inspectors are **required** to develop a channel cross-sections no later than the **next active routine** bridge inspection.

Channel cross-sections are a proven tool to monitor history of stream channels and monitor any changes to the channel's condition and alignment. As a reminder, cross sections are not required during each inspection, but are encouraged for those waterways that are relatively unstable.

### Inspection Comments

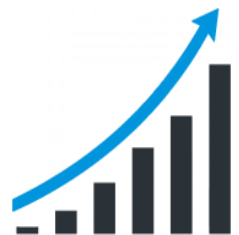
Proper documentation is a critical component of a high-quality bridge inspection.

Starting in 2019, the Illinois Structure Information System (ISIS) **will no longer** allow submittal of blank inspection notes for primary condition ratings of "5" or less. Please work with your District Bridge Liaison for more information regarding this change.

### Postings

FHWA has now set the requirement that bridges requiring load posting must be posted as soon as possible, but no later than **30 days**.

When required, IDOT retains the authority to post/close local structures if owners are unwilling or unable to meet the 30 day requirement. Owners will then be provided an invoice for the services provided.





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**“Working with Our Partners to  
Improve Bridge Safety in  
Illinois, and the Nation”**

## Direct Data Entry

The IDOT BM&I Unit is ramping up efforts for direct entry of bridge inspection data and uploading of bridge files into the Bridge Inspection System (BIS) for all Non-IDOT entities. By allowing owners to enter their own bridge inspection information, IDOT expects quicker data entry, enhanced quality assurance, and improved delinquency tracking.

As early as 2021, the IDOT BM&I Unit may have a full rollout of this direct data entry for all owners. If you are interested in using the BIS for inspection entry and file uploading, please contact the IDOT BM&I Unit.



*Have comments or recommendations  
to improve this publication?*

*Please let us know!*

## Reminders

- If not using the Bridge Inspection System (BIS) for the entry of inspections, please continue to use the Inspection Date Notification (IDN) system to document **when inspections are completed**, unless inspection information is submitted to IDOT for entry within thirty (30) days of the inspection. This allows the BM&I Unit to accurately track inspection progress.
- Occasional minor delinquencies are **allowed** (up to one month) as long as there are well documented and acceptable reasons for those delinquencies. The BM&I Unit must be **notified** as soon as it is known an inspection will be delinquent more than thirty (30) days.
- The Bureau of Bridges and Structures has an on-call consultant under contract and will deploy to perform inspections to ensure delinquencies do not approach 120 days.
- For new bridges and those with minimal change to the streambed, channel cross-sections shall be recorded at a maximum interval equal to the bridges In-Depth Inspection interval. See IDOT NBI Subscription Service Announcement 20190717 for more information.

## Training

- A comprehensive overview of the National Bridge Inspection Standards (NBIS) is located on the FHWA website, at the following [link](#). This module is one of several training modules designed to help Local Public agency professionals navigate the NBIS and other Federal-aid programs.
- IDOT developed short training videos on proper bridge inspection documentation, critical findings, and calculating section loss in steel members. [Link](#)
- IDOT Sponsored Bridge Inspection classes, under the “Training” tab. [Link](#)
- NHI Bridge Inspection related training. [Link](#)
- The Technology Transfer program also offers classes and seminars relating to design, construction, and maintenance. [Link](#)

## Resources

- FHWA resources pertaining to the NBIS, including inspection manuals, policy and guidance, etc. are located on the FHWA website, at the following [link](#).
- The IDOT Bureau of Bridges and Structures website contains the resources required to properly administer a Local Public Agency Bridge Inspection Program. The BM&I Unit’s website, located at the following [link](#), contains tabs for Resources; Training; Webinars and Videos; Forms and NBI Subscription Service Announcement Archives.

### Must haves!

1. IDOT *Structural Services Manual*, Official IDOT Bridge Inspection Policy
2. IDOT Structure Information and Procedure Manual (SIP)
3. Structure Information Management System (SIMS) databases
4. NBI Subscription Service Registration. Send a blank e-mail to the following: subscribe-dot-nbi@lists.illinois.gov

The BM&I Unit can be contacted at the following email address:  
[DOT.BBS.BridgeMgmt@illinois.gov](mailto:DOT.BBS.BridgeMgmt@illinois.gov)

**THANK YOU FOR READING...**