November 12, 2020

NBI Subscription Service Announcement 20201112

Performance Year 2020 National Bridge Inspection Program (NBIP) Update

The following message is being sent to all members of the NBIS subscription service on behalf of the Federal Highway Administration. The attached document is a brief summary of how well the State of Illinois did on the Performance Year 2020 Metrics Assessments.

The Federal Highway Administration is required by the United States Congress to oversee the implementation of the National Bridge Inspection Program. Through negotiations with the Office of Inspector General (OIG) and the Government Accountability Office (GAO), an agreement was reached to perform risk-based, data-driven annual assessments of each state’s NBIS program. These assessments are conducted in 23 different areas commonly known as the 23 NBIS Metrics. Upon completion of our annual review, a summary report is prepared by our office, which is extensive in content and not very user friendly to read. FHWA collects the annual reports from each state and provides a nationwide summary on the status of the program to Congress. In an effort to communicate the results of this year’s Illinois-specific review, we have produced a briefing that covers the essentials of our findings. The briefing is included as an attachment to this subscription service announcement. Please take some time to read the briefing, as it summarizes our areas of needed emphasis. We know the NBIS program is continuing to improve in Illinois and we look forward to continue working with you as we strive for a top-notch bridge inspection program. Thank you for your continued work to ensure the safety of the traveling public.

Dan Brydl
Illinois Division Bridge Engineer
Federal Highway Administration
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 minimum level, with 7 metrics reviewed at the intermediate level. The proposed rulemaking for the NBIS is ongoing and includes an additional 16 metrics. The proposed NWBS rulemaking will be available for review in Spring 2021.

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.

<table>
<thead>
<tr>
<th>FINDING</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>II.</td>
</tr>
<tr>
<td>Special inspection delays noted</td>
<td>Scour evaluation documentation not available in all bridge files</td>
</tr>
<tr>
<td>Special inspections completed over one month late/not following interval</td>
<td>Bridges on reduced intervals/special inspections are generally higher risk and need to be inspected on-time</td>
</tr>
</tbody>
</table>

I. INSIDE

- Inspection Delays 2
- Load Rating Inspections 2
- Local Bridge Condition 2
- Special Inspections 3
- Inspection Documentation 3
- Efforts Underway 3
- Direct Data Entry 4
- Resources 4

II. INSIDE

- 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%

III. INSIDE

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

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 a 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

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

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.
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.

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.

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

Dan Brydl
Division Bridge Engineer
Phone: 217-492-4632
Email: Dan.Brydl@dot.gov

Curtiss Robinson
Assistant Division Bridge Engineer
Phone: 217-492-4629
Email: curtiss.robinson@dot.gov

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

Have comments or recommendations to improve this publication?
Please let us know!