



National Bridge Inspection Program Update – Illinois



ILLINOIS BRIDGE INVENTORY

FHWA ILLINOIS DIVISION

JANUARY, 2016

- **Total No. of Bridges = 26,540**
State: 7,805
Local: 18,735
- **Average Age**
State: 42 yrs.
Local: 39 yrs.
- **Load Posted**
State: 9
Local: 841
- **Fracture Critical**
State: 191
Local: 315
- **Scour Critical**
State: 62
Local: 87
- **Structurally Deficient**
State: 617
Local: 1,574

INSIDE:

Inspection Documentation	2
Inspection Frequency	2
Critical Findings	2
Inspection Procedures	3
Delinquent Inspections	3
Scour Critical POA's	3
2016 Look Ahead	4

Federal Oversight of the NBIP

As the 2016 inspection season is upon us, we have recognized the need to quickly inform bridge owners on past year's National Bridge Inspection Standards (NBIS) review observations. So, we created a new report format focused on informing Local bridge owners, Team Leaders, and Delegated Program Manager's of the program's major highlights. Most of you are familiar with the NBIS regulations which require an annual assessment of IDOT's Bridge Inspection Program. However, you may ask why FHWA is always changing the requirements? To answer this question, let's examine the history of the program.

In the past, FHWA issued a single compliance determination for the overall NBIS program in Illinois. The old process was often criticized as inconsistent and too subjective. In addition, several high-profile structural failures in other states brought bridge safety to the national forefront, prompting Congress to make recommendations for FHWA to develop a data-driven, risk-based oversight program. A few years later, the 23 NBIS Metrics were born!

Created in 2011, the new review process covers 23 distinct aspects of the NBIS and is focused on **consistency**.

2015 Metric Performance

Since national implementation of the 23 NBIS Metrics, the state of Illinois has seen many benefits. In 2012, only 43% of the metrics were in Compliance or Substantial Compliance. Today, with your hard work and assistance, that number has increased to nearly 80%.

While a small number of changes have occurred, IDOT has responded by making process improvements, most of which take a few inspection cycles to implement and fine tune. Rest assured,



the process is now well-defined and no major changes are anticipated.

As a NBIS Delegated PM, Here's What You Need to Know:

Each metric is assessed annually and determined as either: **Compliant, Substantially Compliant, Conditionally Compliant, or Non-Compliant.**

Major deficiencies which hinder the overall effectiveness of the program must be resolved by Dec. 31st. By this date, IDOT must develop a **Plan of Corrective Action (PCA)** outlining the process to correct noncompliant issues. At this point, a metric becomes

Additionally, the IDOT Bureau of Bridges and Structures (BBS) now has the Bridge Management Unit, which has been crucial in ensuring a high quality and uniform inspection program in Illinois, and also an updated inspection policy, which can be found in the IDOT Structural Services Manual Chapter 3.

Conditionally Compliant.

The inability to reach an agreement on acceptable corrective actions or to adhere to milestones documented in an approved PCA will result in **Non-Compliance for Illinois** for that metric, and may subject **bridge owners** to the MAP-21 penalty provision. The penalty requires IDOT to dedicate a portion of their federal funds normally used for bridge improvement projects to correct noncompliance. Of course, imposing penalties is a **last** resort to ensure compliance with the NBIS. IDOT continues to be very cooperative and proactive in working towards NBIS compliance.

It is very important to note that Illinois' overall compliance determinations are based on the **cumulative efforts of all agencies** (state and local) that have bridges subject to the NBIS. Compliance deficiencies in only one local agency can directly and negatively affect the entire state's compliance status.

If you have any questions, please don't hesitate to contact us. We look forward to another great inspection year!

Sincerely,

Dan Brydl, Division Bridge Engineer

Micah Loesch, Assistant Bridge Engineer

Areas which are still being improved are:

1. **Inspection Frequency**
2. **Inspection Quality**
3. **Documented Inspection Procedures for Fracture Critical, Underwater, and Complex bridges.**

See inside for more information.

Inspection Frequencies

Illinois has continued to struggle with timely bridge inspections. In 2014, 14% of all bridge inspections were delinquent, though improvement has been made as this number has been decreased to 7% in 2015. (However many continue to be excessively delinquent; exceeding 4 months past the due date.)



We recognize the challenges due to the size and complexity of the bridge program in Illinois. Ever decreasing staffing and funding, with ever increasing responsibilities, only seem to exasperate this issue.

IDOT is working to improve this and has made several changes, including the development of a **Bridge Inspection Date Tracking Website** to help monitor delinquencies and ensure bridges are being inspected on time.

[Click here to learn more!](#)

Also, remember that delayed bridge inspections are allowed in rare and unusual circumstances (see the article on the next page).

Please let us know if you have any questions—we are striving to assist everyone with meeting bridge inspection program responsibilities!

Inspection Documentation

Proper documentation is crucial when completing a high quality bridge inspection.

Generally, Illinois inspectors do an excellent job. However, deficiencies still existed during the past several years.

One of the ways IDOT has worked to increase quality and consistency throughout Illinois was by developing a short training video on proper

bridge inspection documentation.

Everyone is highly encouraged to watch this short video!

[Click here to watch it!](#)

Also, when completing an inspection report, a good way to check your notes is to ask the following questions:

1. Are all defects documented with their description, severity, and location?
2. Are photos or sketches included if needed?
3. Is section loss properly documented?
4. Is there enough information to assess change of condition over time?

When in doubt, be as specific as possible! More information is always better!

Critical Findings

The recent revision to IDOT bridge inspection policy, Structural Services Manual Chapter 3, included the complete re-write of Section 3.3.12: Critical Findings. The reason for this was to align IDOT policy with national recommendations.

Therefore, the new definition of a Critical Finding in Illinois is defined as a **safety or structural**

related deficiency that may pose an imminent threat to the safety of the traveling public.

Therefore, if a critical finding is identified, the appropriate Program Manager must be **immediately** notified.

Once the structure is secured and after consultation with the IDOT BBS, a critical finding form

(IDOT Form BBS-CF-1) will need to be submitted within 7 days of the event. The IDOT BBS will then notify FHWA as appropriate.

Nationally, FHWA Divisions receive heavy scrutiny for the proper handling and documentation of critical findings. Therefore, we greatly appreciate your assistance with this matter!

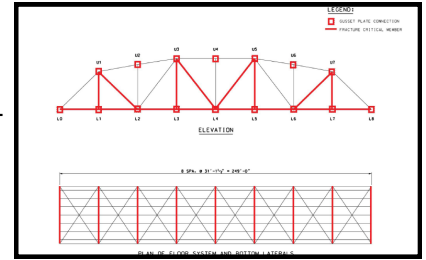


Inspection Procedures

Written inspection procedures **specific** to the bridge are required for all Underwater (UW), Fracture Critical Member (FCM), and Complex (Moveable, Cable-Stayed, Suspension) bridge inspections. In recent reviews, there was a lot of inconsistency and confusion on what constitutes acceptable inspection procedures. To help, IDOT has developed forms and templates to assist bridge owners with developing these procedures.

1. IDOT Form BBS UIP, **Underwater Inspection Plan**, must be developed for all bridges requiring an underwater inspection, in addition to required cross sections, etc.
2. A **Fracture Critical Member Inspection Plan** must be developed for all bridges with Fracture Critical members. Find a template in the Structural Services Manual.

We are pleased to report all **complex bridges** have had specialized procedures recently developed thanks to the hard work of several program managers around the state.



Here are some important points to consider regarding inspection procedures:

- The intent is to communicate specific items (special procedures, access equipment, problematic details, etc.) to the Team Leader *ahead of time* to ensure a quality inspection
- The *inspection report* documents what an inspector found. Procedures lay out *what should be done*
- They describe **Risk Factors** unique to the bridge

The important next step is to **inspect each bridge according to those procedures**, and to properly document those actions in the report!

Documenting Delinquent Inspections

The NBIS allows for **one-month** delayed inspections provided **documentation exists for rare and unusual circumstances**. Unusual circumstances can be severe weather, concern for inspector safety or inspection quality, the need to optimize scheduling with other bridges, or other *unique situations*. **Justifications which are vague or a result of poor planning are unacceptable.**

Unacceptable Reasons:

- “Previous inspector retired”
- “County Engineer departure”
- “Heavy workload”
- “Lack of personnel”
- “Delay in consultant contract”
- “Other”

Acceptable Reasons:

- “High water due to recent heavy rains in the region prevented timely inspection”
- “Severe weather prevented proper inspection”
- “Railroad unresponsive for obtaining proper permit”
- “Unable to obtain lane closure for snooker due to adjacent road construction project traffic staging”

Scour Plans of Action (POAs)

As the majority of all bridge failures in the nation are related to scour, this issue has been on the national forefront for many years.

As you probably know, all Scour Critical bridges require a POA. More importantly these structures should be monitored when a triggering event has occurred, **in accordance with that POA**. (Which is why keeping it updated is so important).



A few years ago, IDOT initiated BridgeWatch®, which notifies owners when threshold rain events occur. With the exception of minor issues, including

recent cases of false triggers, we believe BridgeWatch® has been a very effective and useful tool.

Through our recent reviews, it has been evident that bridge owners are monitoring scour events properly and taking due diligence in ensuring their bridges are safe.

Keep up the good work!



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FHWA Focus Areas for 2016

- Field reviews to occur in the southern half of the state; IDOT Regions 4 and 5.
- Routine and special inspection frequencies and documentation for late inspections.
- Inspection quality, condition ratings, and documentation of defects
- Inspection in accordance with procedures developed for Underwater, Fracture Critical, and Complex bridges
- QC/QA procedures

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

Resources for Local Public Agencies

If you are looking for a comprehensive overview of the National Bridge Inspection Program (NBIP), be sure to visit Federal-aid Essentials for Local Public Agencies: <http://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?id=87>. This module is one of several training modules designed to help Local agency professionals navigate the NBIP. The site is structured for busy agency staff who want further understanding of Federal policies, procedures, and practices. You will find quick answers, straight to the point, and presented in plain language to help you make the right decisions in successfully complying with the NBIS.

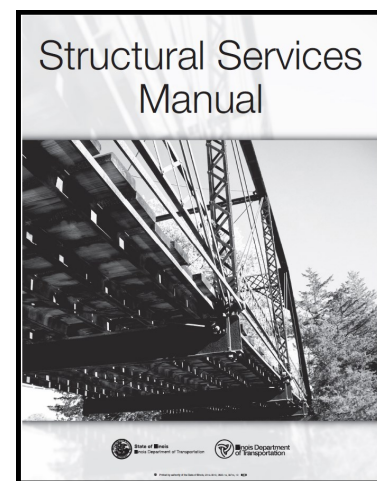
The Federal-aid Essentials Web site also contains a resource library of informational videos regarding the Federal-aid Highway Program.

Additionally, IDOT has many excellent resources available online, such as updated policies, inspection forms, and available training, to ensure compliance with the NBIS. (Click the link below; proceed to “Consultant Services”, “Bridges & Structures”, and “Inspection”)

<http://www.idot.illinois.gov/doing-business/procurements/engineering-architectural-professional-services/Consultants-Resources/index>

Be sure to stay updated by subscribing to the IDOT BBS NBI subscription service.

Also, don't forget to read Chapter 3 of the Structural Services Manual. It is a great resource for all bridge inspection related policy and procedures in Illinois.



For more information, please contact:

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