

2013 NBIS QUALITY ASSURANCE REVIEW

SUMMARY REPORT

Final Report
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Prepared for:

Illinois Department of Transportation
Bureau of Bridges & Structures

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INTRODUCTION

The Illinois Department of Transportation (IDOT) is required to perform Quality Assurance (QA) reviews of its bridge inspection practices in order to comply with the National Bridge Inspection Standard (NBIS). As part of the QA review, IDOT conducts process audits of selected districts and local agencies to document compliance with NBIS requirements.

For 2013, there were 2 IDOT Districts, 4 counties and 2 municipalities selected for review. Interviews of staff and field reviews at bridge sites were conducted from June 17, 2013 through October 10, 2013.

The interviews and site visits were conducted by Oates Associates, Inc. The reviews were attended by the agencies' Program Manager and Team Leaders as well as representatives from the IDOT Bureau of Bridges & Structures (BBS). The local agency reviews were also attended by a representative from the local IDOT District. One district review was attended by a representative from the Federal Highway Administration (FHWA). A report was prepared for each agency that documented the review and noted program deficiencies.

This document summarizes the information gathered during the interviews and the observations made during the subsequent site visits. This report is intended as a summary of the State of Illinois' NBIS program. However, the information and findings are based only on those districts and agencies reviewed and may not be representative of the State's entire NBIS program.

1. PROGRAM MANAGEMENT

1.1 Personnel

All of the agencies had Program Managers and Team Leaders assigned who were approved by IDOT and were current on their required refresher training.

The NBIS program personnel for most agencies consisted of in-house staff. One municipality hired a consultant to act as Program Manager and complete all NBIS inspections.

1.2 Structure Inventory

The agencies had inspection responsibilities for a total of 1,585 NBIS structures under state jurisdiction, 196 NBIS structures under county jurisdiction, 587 NBIS structures under township jurisdiction, and 98 NBIS structures under municipal jurisdiction. For purposes of this report, an NBIS structure is defined as a structure carrying a public roadway and greater than 20.0 feet in length. The inventory numbers presented in this

report do not include non-NBIS structures and are based on data downloaded from the Illinois Structure Information System (ISIS) prior to each agency's interview.

Most agencies maintained an inventory of non-NBIS structures.

1.3 Inspection Scheduling

The agencies had different systems for tracking inspection schedules. The districts tracked inspection schedules in-house using IDOT's Bridge Inspection System (BIS). Four local agencies relied on reports provided by IDOT to track inspection schedules. Two local agencies developed in-house systems to track inspection schedules.

The districts completed inspections year round. The local agencies completed inspections for a portion of the year.

1.4 Quality Control

IDOT Structural Services Manual Section 3.9.3.2 requires that at least once every 24 months, a Program Manager accompany each Team Leader functioning within their area of responsibility to observe their performance of NBIS inspection of at least three structures over the course of a 30 day period. The districts completed and documented these reviews. The local agencies were not completing and documenting these reviews.

All of the Program Managers both reviewed and signed every inspection report.

If an inspection had a critical finding, most agencies contacted the BBS for guidance.

Three local agencies had not reviewed Section 3 of the 2013 IDOT Structural Services Manual.

2. ROUTINE NBIS SAFETY INSPECTIONS

The agencies had a total of 898 NBIS structures with a 48 month routine NBIS inspection interval, 1,482 NBIS structures with a 24 month routine NBIS inspection interval, 86 NBIS structures with a 12 month routine NBIS inspection interval, and no NBIS structures with a less than 12 month routine NBIS inspection interval.

All of the structures were currently in compliance with their respective routine NBIS inspection intervals. There were 112 lower risk structures and 12 higher risk structures that were delinquent for their previous routine NBIS inspection by less than four months (less than 122 days delinquent). There were 26 lower risk structures and 1 higher risk structure that were delinquent for their previous routine NBIS inspection by four months or more (greater than or equal to 122 days delinquent). The delinquencies were typically due to staffing or scheduling issues.

A Team Leader was present during all routine NBIS inspections. All agencies appeared to be completing quality routine NBIS inspections. The inspection teams inspected from 3 to 12 structures in a typical day. One local agency recorded as many as 20 routine NBIS inspections in a single day according to ISIS data.

Inventory data was reviewed during routine NBIS inspections to varying degrees between the agencies. Element level data was collected during routine NBIS inspections by the districts and one local agency.

Routine NBIS inspection documentation was reviewed. In general, the inspection findings were sufficiently documented. Two local agencies did not include new condition ratings in the inspection reports. This appeared to indicate no change in the condition rating but it was not explicitly stated in the reports. One local agency noted that they were previously instructed by District 5 (the agency was recently transferred from District 5 to District 7) to be less thorough on inspection comments.

3. UNDERWATER INSPECTIONS

The agencies had a total of 24 NBIS structures with a 60 month underwater inspection interval, 7 NBIS structures with a 48 month underwater inspection interval, no NBIS structures with a 36 month underwater inspection interval, 34 NBIS structures with a 24 month underwater inspection interval, and 6 NBIS structures with a 12 month underwater inspection interval. Several structures were identified that were not receiving underwater inspections but that likely meet IDOT's Basic Submergence Criteria.

All of the structures were currently in compliance with their respective underwater inspection intervals. There were two lower risk structures and no higher risk structures that were delinquent for their previous underwater inspection by less than four months (less than 122 days delinquent). There were three lower risk structures and no higher risk structures that were delinquent for their previous underwater inspection by four months or more (greater than or equal to 122 days delinquent). The delinquencies were typically due to environmental conditions (documented in the bridge file but more than 30 days overdue) but some agencies were unaware of the delinquencies.

Seven structures required underwater diving inspections which were coordinated by the BBS and completed by a consultant.

A Team Leader was present during all underwater inspections. Most agencies appeared to be completing quality underwater inspections. One local agency did not use a boat to complete underwater inspections.

Underwater inspection documentation was reviewed. With the exception of one local agency, the inspection findings were well documented. IDOT inspection forms were typically supplemented with additional data that documented the streambed elevation.

None of the agencies had detailed documentation describing the underwater inspection procedures of each individual structure.

4. FRACTURE CRITICAL MEMBER INSPECTIONS

The agencies had a total of 29 NBIS structures with a 24 month fracture critical member (FCM) inspection interval, 8 NBIS structures with a 12 month FCM inspection interval, and no NBIS structures with a less than 12 month FCM inspection interval.

All of the structures were currently in compliance with their respective FCM inspection intervals. There were two structures that were delinquent for their previous FCM inspection by less than four months (less than 122 days delinquent). There were two structures that were delinquent for their previous FCM inspection by four months or more (greater than or equal to 122 days delinquent). The delinquencies were typically due to inspections being overlooked and deficiencies in the agencies inspection scheduling system.

A Team Leader was present during all FCM inspections. The districts appeared to be completing quality FCM inspections using non-destructive evaluation (NDE) techniques. The local agencies did not appear to be completing quality FCM inspections. Non-destructive evaluation (NDE) equipment was not used by the local agencies. It did not appear that all local agencies were inspecting all fracture critical members at arm's length.

Fracture critical inspection documentation was reviewed. With the exception of one district, the inspection findings were not well documented. More quantitative data was needed to effectively document the location and magnitude of noted defects. None of the agencies had detailed documentation describing the FCM inspection procedures of each individual structure.

5. SPECIAL INSPECTIONS

The agencies had a total of 35 NBIS structures with a 48 month special inspection interval, 55 NBIS structures with a 24 month special inspection interval, 35 NBIS structures with a 12 month special inspection interval, and 27 NBIS structures with a less than 12 month special inspection interval.

There were two structures that were delinquent for their current special inspection. There were six structures that were delinquent for their previous special inspection. The delinquencies were due to forgetting to complete and submit the inspection forms, the previous inspections being completed early and the current inspections following the previous inspection due dates, misinterpreting the special inspection start dates, and inspection scheduling based on the wrong inspection interval.

The special inspection structures had ISIS Item Number 92C1 (Special Feature Type) coded 'A' (Structural Damage/Deterioration – Steel Superstructure Elements), 'B' (Structural Damage/Deterioration – Concrete Superstructure Elements), 'E' (Structural Damage/Deterioration – Concrete Substructure Elements), 'F' (Structural Damage/Deterioration – Timber Substructure Elements), 'G' (Underwater Condition Inspection – Debris and/or Erodible Soils), 'H' (Underwater Condition Inspection – Flow Restriction/Velocity), 'I' (Underwater Condition Inspection – Spread Footings not adequately keyed into rock or protected from the effects of streambed scour), 'K' (Underwater Condition Inspection – Scour Critical Evaluation Monitoring), 'L' (Existing Streambed Scour Adjacent to Spread Footing), 'M' (Existing Streambed Scour Adjacent to Pile Supported Footing), 'P' (Embankment Movement or Settlement), 'Q' (Substructure Movement or Settlement), 'R' (Pin & Link in Multi-Girder (Redundant) Bridge), and 'Z' (Other).

One district and one local agency appeared to be completing quality special inspections. The other agencies' lack of documentation of inspection findings or inspection procedures suggested that quality special inspections were not being completed.

Special inspection documentation was reviewed. With the exception of one district and one local agency, the inspection findings were not well documented. Several reports had ISIS Item Number 93C1 (Special Feature Condition Status) coded as '2' (No Change in Condition Noted) but quantitative data was not included in the reports or previous reports for comparison. Several bridge files did not include documentation of what feature was being inspected.

6. SCOUR EVALUATIONS

The agencies had a total of 1,967 NBIS structures over waterways of which 614 structures were culverts and 28 structures had unknown foundations. All of these structures had been evaluated for scour.

There were four NBIS structures that were scour critical. A scour plan of action (POA) was completed for each of these structures.

Scour POA documentation was reviewed. Each POA consisted of a completed IDOT form BBS 2680. The contact information provided in each POA was outdated. There had been no field visits required as part of the implementation of any of the scour POAs.

7. LOAD RATING

The agencies had a total of 50 NBIS structure that required load postings and 14 NBIS structures that were closed.

The BBS completed all of the load ratings. Structural members that controlled the load ratings were visually inspected during routine NBIS inspections unless the BBS required a special inspection of the member.

While some agencies notified IDOT of work that would affect the load rating of a structure (repairs, overlays, etc.), it was unlikely that the load ratings were being properly updated in a timely manner.

All of the agencies regularly reviewed posting and closing signage. IDOT also regularly inspected posting and closing signage for local agencies.

Consulting firm HLR completed a review of IDOT's load rating program. The results of this review are included in Attachment A.

8. BRIDGE FILE

Each agency had a bridge file system that was well organized, maintained, and accessible to the inspection team. Most files contained inspection reports, photos, inventory data sheets, and documentation regarding the structure. One local agency was in the process of developing an electronic bridge file using a geographic information system (GIS) database.

9. STRUCTURE MAINTENANCE

All but one local agency had in-house maintenance crews that were able to perform various bridge repair and preventative maintenance tasks. The agencies used routine NBIS inspections as their primary source for determining maintenance needs. Most agencies regularly completed some level of bridge preventative maintenance.

One local agency used a software program to track roadway maintenance needs and programming. They plan on collecting bridge element level data during future inspections to track structure maintenance needs as well.

10. STRUCTURE SITE VISITS

Site visits were made to 74 structures. Condition ratings and inventory data items on the respective Master Structure Reports were compared with conditions observed in the field.

10.1 Structural Condition Ratings

Structural condition ratings were generally within the allowable tolerance of ± 1 . The following are common condition rating discrepancies noted during the site visits:

1. Item Number 58 (Deck Condition):
 - Should be rated less than '9' after the initial inspection.
 - Should be coded as 'N' (Not Applicable) for structures without a structural decking system (i.e. structures with fill).
 - Should be rated for all structures with a structural decking system. ISIS does not appear to allow certain structure types to have a deck condition rating assigned. This issue needs to be addressed by IDOT.
 - For slab bridges, should be rated the same as the superstructure condition rating (Item 59) using the superstructure criteria.
 - For prestressed concrete box beam bridges without a 4" or thicker reinforced concrete overlay, should be rated the same as the superstructure condition rating (Item 59) using the superstructure criteria.
2. Item Number 59 (Superstructure Condition):
 - Should be rated less than '9' after the initial inspection.
 - Should account for minor leakage of keyways.
3. Item Number 60 (Substructure Condition):
 - Should be rated less than '9' after the initial inspection.
 - Should account for piles that are exposed due to scour.
 - Should take into account the condition of any adjacent MSE walls if the walls are an integral part of the structural system.
4. Item Number 61 (Channel & Channel Protection Condition):
 - Should account for stream degradation and its affect on bank protection.

10.2 Inventory Data

The following are common inventory data discrepancies noted during the site visits:

1. Item Number 8A1 (Bridge Remarks (General)):
 - Should note unique or mixed main structure types.
2. Item Number 8E (Proposed Replacement Bridge Number):
 - Should be verified for accuracy.
 - Should be left blank if not programmed for replacement.
3. Item Number 22A (Reporting Agency):
 - Should be verified for accuracy.
4. Item Number 27 (Construction Type Indicator):
 - Should be used to indicate reconstruction when applicable.
5. Item Number 27A (Construction Year):
 - Should identify the year of reconstruction when applicable.

6. Item Number 28 (Number of Lanes):
 - Should be verified for accuracy.
7. Item Number 32 (Approach Roadway Width):
 - Should be verified for accuracy.
8. Item Number 34 (Skew Direction):
 - Should be verified for accuracy.
9. Item Number 34A (Skew Angle):
 - Should be verified for accuracy.
10. Item Number 36A (Railing Appraisal (Bridge Railings)):
 - Should be verified that railings meet current standards.
 - Is not applicable for culverts unless railing is attached to the structure.
11. Item Number 36B (Railing Appraisal (Approach Guardrail Transition)):
 - Should be verified that transitions meet current standards.
 - Is not applicable for most culverts.
12. Item Number 36C (Railing Appraisal (Approach Guardrail)):
 - Should be verified that guardrails meet current standards.
 - Is not applicable for most culverts.
13. Item Number 36D (Railing Appraisal (Approach Guardrail Ends)):
 - Should be verified that ends meet current standards.
 - Is not applicable for most culverts.
14. Item Number 36E/F (Guardrails on Structure Type (Right/Left)):
 - Should only identify guardrail in addition to the structure railing or parapet which is continuous with the guardrails located on the approaches.
 - Should not be used to identify retrofit bridge rail.
 - Needs item description clarified in the IDOT Structure Information and Procedure Manual.
15. Item Number 43A (Main Structure Material):
 - Should be verified for accuracy.
16. Item Number 43B (Main Structure Type):
 - Should be verified for accuracy.
17. Item Number 44AN/AF (Near/Far Approach Span Material):
 - Should be completed for all structures with a different approach span leading up to the main structure span.
 - Should be verified for accuracy.

18. Item Number 44BN/BF (Near/Far Approach Span Type):
 - Should be completed for all structures with a different approach span leading up to the main structure span.
 - Should be verified for accuracy.
19. Item Number 45 (Total Number of Main Spans):
 - Should be verified for accuracy.
20. Item Number 46 (Total Number of Approach Spans):
 - Should be completed for all structures with a different approach span leading up to the main structure span.
 - Should be verified for accuracy.
21. Item Number 48 (Length of Longest Span):
 - Should be verified for accuracy.
 - Should be measured along centerline of roadway.
22. Item Number 49 (Structure Length):
 - Should be verified for accuracy.
 - Should be measured along centerline of roadway.
23. Item Number 50A/B (Sidewalk Width On (Right/Left)):
 - Should be verified for accuracy.
 - Should be left blank for brush or safety curbs less than 18 inches wide from the face of bridge railing.
24. Item Number 50C (Sidewalks Under Structure Indicator):
 - Should be verified for accuracy.
25. Item Number 51 (Total Bridge Roadway Width On):
 - Should be verified for accuracy.
 - Should be coded as '000.0' when the roadway is on fill and headwalls or parapets do not affect the flow of traffic.
26. Item Number 52 (Total Deck Width):
 - Should be verified for accuracy.
 - Should be coded as '000.0' when the roadway is on fill and headwalls or parapets do not affect the flow of traffic.
27. Item Number 55B1 (Railroad Lateral Underclearance):
 - Should be verified for accuracy.
28. Item Number 59C (Utilities Attached to Structure):
 - Should be verified to ensure all utilities attached to the structure are included.

29. Item Number 60A/B (Substructure Material (Abuts./Piers)):
 - Should be completed for all applicable structures.
30. Item Number 62A (Culvert Cells (Count)):
 - Should be completed for all culverts.
31. Item Number 62B (Culvert Cell Width (Ft)):
 - Should be completed for all culverts.
32. Item Number 62D (Culvert Opening Area (Sq Ft)):
 - Should be completed for all culverts.
33. Item Number 62E (Culvert Fill Depth):
 - Should be completed for all culverts with fill.
34. Item Number 70A2 (Posted Single Unit Vehicle Weight Limit):
 - Should be verified for accuracy.
 - Should be blank when signs do not conform to the IDOT Manual on Uniform Traffic Control Devices.
 - Should be coded 'LL' (Legal loads only) when appropriate.
35. Item Number 70B2 (Posted Combination Vehicle Type 3S-1 Weight Limit):
 - Should be verified for accuracy.
 - Should be blank when signs do not conform to the IDOT Manual on Uniform Traffic Control Devices.
36. Item Number 70C2 (Posted Combination Vehicle Type 3S-2 Weight Limit):
 - Should be verified for accuracy.
 - Should be blank when signs do not conform to the IDOT Manual on Uniform Traffic Control Devices.
37. Item Number 72 (Approach Roadway Alignment Appraisal):
 - Should be based on the alignment's affect on operating speed.
38. Item Number 107 (Deck Structure Type):
 - Should be verified for accuracy.
 - Should be coded as 'N' (Not Applicable) for structures without a structural decking system (i.e. structures with fill).
39. Item Number 107A (Deck Structure Thickness):
 - Should be verified for accuracy.
 - Should be the thickness of the predominant deck type.
 - Should be the thickness of the planks for timber decks.
 - Should be the thickness of the concrete overlay for prestressed concrete box beams with structural concrete overlays.

40. Item Number 108A (Type of Wearing Surface):

- Should be verified for accuracy.
- Should be coded as 'N' (Not Applicable) for structures without a structural decking system (i.e. structures with fill).

41. Item Number 108C (Deck Protection):

- Should be verified for accuracy.

42. Item Number 108D (Total Deck Thickness):

- Should be verified for accuracy.
- Should include the Deck Structure Thickness plus wearing surface thickness when applicable.
- Should include the plank plus runner thickness for timber decks.
- Should be the thickness of the predominant deck type.
- Should be measured at the same location as Item Number 107A (Deck Structure Thickness).

43. Item Number 112 (AASHTO Bridge Length):

- Should be verified for accuracy.
- Should be measured along centerline of roadway.

11. CONCLUSIONS

11.1 Summary of Deficiencies

The following is a summary of deficiencies that were identified during this review:

1. Inspection Scheduling:
 - Four local agencies relied on reports provided by IDOT to track inspection schedules
2. Quality Control:
 - None of the local agencies completed and documented quality control field reviews similar to that prescribed in IDOT Structural Services Manual Section 3.9.3.2.
 - Three of the local agencies had not reviewed Section 3 of the 2013 IDOT Structural Services Manual.
3. Routine NBIS Safety Inspections:
 - All of the agencies had routine NBIS inspection delinquencies.
 - Two local agencies needed to improve their inspection documentation.
 - Several common condition rating and inventory data discrepancies were noted.
4. Underwater Inspections:
 - One district and two local agencies had underwater inspection delinquencies.
 - Several structures were identified that required but were not receiving underwater inspections.
 - One local agency needed to improve its underwater inspection procedure.
 - One local agency needed to improve its underwater inspection documentation.
 - All of the agencies needed to include Underwater Inspection Procedures in the bridge files.
5. Fracture Critical Member Inspections:
 - Two local agencies had FCM inspection delinquencies.
 - All of the local agencies needed to improve their FCM inspection procedures.
 - One district and four local agencies needed to improve their FCM inspection documentation.
 - All of the agencies needed to include FCM Inspection Procedures in the bridge files.
6. Special Inspections:
 - Three local agencies had special inspection delinquencies.

- One district and four local agencies needed to improve their special inspection procedures and documentation.
7. Scour Evaluations:
 - Scour POA's needed to be reviewed and updated.
 8. Load Ratings:
 - All of the agencies needed to ensure that load ratings were properly updated following structure work that affected the load rating (repairs, overlays, etc.).

11.2 Recommendations

There are several changes that IDOT should consider to help improve the quality of the State's NBIS programs including:

1. Emphasize the importance of the previously noted deficiencies to all agencies throughout the state.
2. Provide the local agencies with additional tools to help track inspection schedules.
3. Review the catalog of inventory items, remove items that are not used, and clarify items that are commonly coded incorrectly.
4. Provide more training for personnel at IDOT Districts who act as liaisons to the local agency NBIS programs.
5. Encourage all NBIS program personnel to become familiar with Section 3 of the 2013 Structural Services Manual.
6. Increase the number of local agencies reviewed during annual NBIS QA Reviews. This could be accomplished with a similar amount of resources currently used for reviews by limiting the scope of the reviews, combining county and municipality reviews, and reviewing IDOT Districts on longer intervals.
7. Require all local agencies to commit a minimum amount of manpower, based on inventory size and complexity, to their NBIS program each year.
8. Encourage local agencies to pool their resources so that a smaller number of inspection teams are completing a larger number of inspections each year.
9. While no deficiencies were specifically noted during any of the individual reviews, IDOT should consider implementing a system for inspection teams to review the conditions assumed in the scour evaluation with the actual field conditions observed during each routine NBIS inspection.

12. 23 NBIS METRICS

Compliance with the 23 NBIS Metrics was not explicitly part of this review. However, the following are noted deficiencies that should be addressed in order for the State to achieve a higher level of compliance during future FHWA reviews:

Routine Inspection Frequency – Lower Risk Bridges (NBIS Metric 6)

The NBIS requires that each lower risk structure is inspected at regular intervals not to exceed its defined inspection frequencies. Lower risk structures are defined as those with superstructure and substructure, or culvert, condition ratings of fair or better, and not requiring state legal load restriction.

There were 112 lower risk structures that were delinquent for their previous routine NBIS inspection by less than four months (less than 122 days delinquent). There were 26 lower risk structures that were delinquent for their previous routine NBIS inspection by four months or more (greater than or equal to 122 days delinquent).

Routine Inspection Frequency – Higher Risk Bridges (NBIS Metric 7)

The NBIS requires that each higher risk structure is inspected at regular intervals not to exceed its defined inspection frequencies. Higher risk structures are defined as those with superstructure and substructure, or culvert, condition ratings of poor or worse, or are state legal load restricted.

There were 12 higher risk structures that were delinquent for their previous routine NBIS inspection by less than four months (less than 122 days delinquent). There was one higher risk structure that was delinquent for its previous routine NBIS inspection by four months or more (greater than or equal to 122 days delinquent).

Underwater Inspection Frequency – Lower Risk Bridges (NBIS Metric 8)

The NBIS requires that each lower risk structure that cannot be inspected visually at low water by wading or probing is inspected at regular intervals not to exceed their defined inspection frequencies. Lower risk structures are defined as those with substructure or culvert condition ratings of fair or better, and evaluated as not scour critical.

There were two lower risk structures that were delinquent for their previous underwater inspection by less than four months (less than 122 days delinquent). There were three lower risk structures that were delinquent for their previous underwater inspection by four months or more (greater than or equal to 122 days delinquent).

Inspection Frequency – Fracture Critical Member (NBIS Metric 10)

The NBIS requires that all fracture critical members are inspected at regular intervals not to exceed their defined inspection frequencies.

There were two structures that were delinquent for their previous FCM inspection by less than four months (less than 122 days delinquent). There were two structures that were delinquent for their previous FCM inspection by four months or more (greater than or equal to 122 days delinquent).

Inspection Procedures – Quality Inspections (NBIS Metric 12)

The NBIS requires that each bridge is inspected with a nationally recognized acceptable inspection procedure, with the necessary quality of assessment, rating, and documentation.

The procedures for underwater inspections, FCM inspections, and special inspections did not appear to provide a quality assessment of all structures. In addition, routine NBIS inspections, underwater inspections, FCM inspections, and special inspections did not appear to have quality documentation of all of the inspection findings. Not all of the NBIS programs with FCM inspections had personnel who had taken the NHI fracture critical member training course.

Inspection Procedures – Fracture Critical Members (NBIS Metric 16)

The NBIS defines a fracture critical member (FCM) inspection as a hands-on inspection of a FCM or member component that may include visual and other non-destructive evaluation. A hands-on inspection is an inspection within arm's length of the component. The locations of the FCMs must be identified and the FCM inspection frequency and inspection procedures described in the inspection records for each bridge requiring FCM inspections.

The bridge file did not include documentation of the FCM inspection procedures.

Inspection Procedures – Underwater (NBIS Metric 17)

The NBIS requires that the locations of the underwater elements are identified and the underwater inspection frequency and inspection procedures are described in the inspection records for each bridge requiring underwater inspections.

The bridge file did not include documentation of the underwater inspection procedures.

Inspection Procedures – QC/QA (NBIS Metric 20)

The NBIS requires that agencies assure systematic quality control (QC) and quality assurance (QA) procedures are used to maintain a high degree of accuracy and consistency in the inspection program. This includes periodic field reviews of inspection teams and independent reviews of inspection reports.

A formal independent field review program similar to that prescribed in IDOT Structural Services Manual Section 3.9.3.2 was not implemented and documented.

ATTACHMENT A
LOAD RATING QC RESULTS
(Completed by HLR)