

### **EPG 753.8: Inspection Program Quality Measures**

An important part of an inspection program is being able to maintain accuracy and consistency in the inventory, inspection and the load rating processes for bridges. This is handled by having Quality Control (QC) and Quality Assurance (QA) procedures in place. The Bridge Management Engineer (BME), Supervising Bridge Inspection Engineer (SBIE), Structural Project Management Engineer (SPME), and the Bridge Rating and Inventory Engineer (BRIE) will primarily be responsible for the QC/QA program at MoDOT and will work as a team to ensure that the bridge inventory and inspection program in Missouri is compliant with the requirements defined in the National Bridge Inspection Standards (NBIS).

EPG 753.1 provides an overview of the general organization and responsibilities for the bridge inventory, inspection, and load rating program in Missouri. It should be noted that the BME serves as the Program Manager for bridge inspections in Missouri. This section provides details on the various QC/QA procedures that may be used in differing degrees for evaluating the inventory, inspection, and load rating programs.

Quality control is generally done as part of the inspection process. The inspect team members will be reviewing the inspection reports and other information and compare that to the observed conditions during the inspection process. The inspection team will then update the inspection reports to accurately reflect the field conditions observed for later input into the computer system for bridge inspections. The inspection team may also observe other information on an inspection report that is incorrect and either make those updates in the inspection system or notify the appropriate person of the need to review/update specific items on a structure.

Quality assurance is generally done at a higher level and involves an independent evaluation of the inventory, inspection, and load rating programs to ensure that the program is effective and complies with the state and national standards for the programs. Quality assurance may be generally focused on the program, or it may be focused on specific areas of the program where there are known or suspected deficiencies. Quality assurance will typically involve random sampling of the entire bridge inventory to pick a subset of structures for review but may also include a non-random sampling of a specific set of structures to evaluate program compliance.

This section provides details on the various QC/QA procedures that may be used in differing degrees for evaluating the inventory, inspection, and load rating programs.

### **EPG 753.8.1: QC Procedures for Inspections**

QC procedures are necessary to maintain a desired level of quality in bridge inspections. These procedures are performed on a continual basis as part of the normal day-to-day inspection processes. The procedures include defining qualifications for various individuals involved in the inspection program; review and validation of inspection reports and data; and identification and resolution of data issues/problems found during inspections.

#### **EPG 753.8.1.1: Qualifications of Personnel**

An important part of a QC program is ensuring that the individuals involved in the various aspects of the program meet the appropriate qualifications as defined in NBIS regulations. NBIS regulations define specific qualifications and requirements for the following individuals: Program Manager, Load Rating Engineer, Team Leader for fracture critical inspections, Team Leader for all other inspections, and Divers on underwater inspections classified as Dives or Deep Wades. The requirements include initial education and experience requirements, licensing requirements, initial inspection training requirements, inspection refresher training requirements, other training requirements, and other state requirements that may be specifically designated. These requirements ensure that individuals involved in the inspection program are initially trained and then kept up to date on advancements in technology and general knowledge.

The Program Manager will primarily be responsible for ensuring that the individuals involved in the inspection program meet the appropriate qualifications for the work they are performing. EPG 753.4.1 provides details on all the education, experience, and continuing training requirements for the individuals involved in the inspection program.

#### **EPG 753.8.1.2: Review/Validation of Inspection Reports/Data**

The goal of a QC program for inspections is to have quality inspections performed on structures, including data entry, and to have consistency from bridge to bridge as well as consistency from year to year on the same structure. The following sections provide various tools that may be used to maintain the quality and consistency of the inspection program.

##### **EPG 753.8.1.2.1: Inspector Rotation**

Repetitive inspection of the same bridges by an inspector can be beneficial because the inspector will develop a broader knowledge and understanding of the existence and progression of deterioration issues on structures after having inspected them for many years. The risk of the same person inspecting a structure from year to year is that they may miss the importance of a subtle change in the condition of a structure. Rotation of the inspector on structures is also beneficial because it results in better quality on the inspections for structures and provides for the opportunity for a differing viewpoint on

the significance of deterioration or defects that may be present on a structure. As part of the QC for the inspection program in Missouri, it is recommended that the inspection Team Leader for a structure be rotated with other available personnel at least every four (4) years, when possible. For areas that have insufficient staffing levels, rotation of the Team Leader over different inspection cycles may not be possible.

#### **EPG 753.8.1.2.2: Quality Control Inspection**

As part of the QC program on inspections, the District Bridge Engineer (DBE) or a Bridge Division inspector may assist district staff with a portion of the inspections on state and non-state structures within the district. The general goal for these QC inspections will be for DBE or Bridge Division inspectors to participate on at least 5 state and 5 non-state structures that are assigned to each district inspector for structures that are due for inspection in the district each year. The counties that this assistance is provided in should be rotated on a yearly basis. These QC inspections will serve as a means for reviewing the techniques and rating skills of the district inspection staff and to help promote uniformity in the assignment of condition ratings and the completion of reports during inspections. General feedback will be provided to the district staff during the course of these inspections. When these inspections are completed, the DBE or Bridge Division inspector should document the occurrence of the inspection thru an email to the BME or SBIE.

For inspections performed by local agencies on the non-state system, a Team Leader from the district or Bridge Division may accompany the inspector of record for the local agency for one day during the inspection season or on a subset of structures determined by the QC person from the district or Bridge Division. When this is done for a subset of structures, it is recommended that the QC be focused on poor condition structures. Instantaneous feedback should be provided in a similar manner as for state and non-state inspections performed by the district. The QC person should document that this has happened thru an email to the BME or SBIE.

#### **EPG 753.8.1.2.3: State System Annual Expectations Meeting**

For state structures, the bridge inspections conducted by the districts are generally performed from July thru February. Each year in the spring, Bridge Division will provide information on goals and objectives for the upcoming state inspection season and will host a meeting for discussion of issues and questions that various district inspection staff may have. This meeting will give directives as to emphasis areas for the upcoming inspection cycle and remind inspectors of the general practices and procedures that should be used.

#### **EPG 753.8.1.2.4: Nonstate System Pre-Inspection Meetings**

Most of the inspections for nonstate structures are done from the late fall into the early spring. When significant statewide issues exist, the Bridge Division may either schedule

a general meeting of inspectors at some point during the year or visit districts to go over those issues. When no significant statewide issues exist, the DBE should schedule some type of pre-inspection meeting to provide inspection assignments to the inspectors and go over important issues that need to be communicated to the inspectors. The BME or other Bridge Division inspection staff are generally available to attend these meetings to assist with discussing issues and concerns with the inspectors.

### **EPG 753.8.1.3: Identification/Resolution of Data Issues**

As structures are inspected, inspectors will be marking up inspection reports and other records with the changes that were observed during the inspection. After the inspections are completed, the field notes will be used to electronically update the inventory record for the structure in TMS. Timely and accurate entry of field notes in TMS is important so that the NBI records for each structure can be kept up to date. To facilitate keeping at least the minimal amount of critical data as current as possible, it is recommended that the inspection date, inspector names, rating changes, and element condition states be updated in TMS within 30 days of the inspection. The NBIS regulation requires that all inspection data be entered within 90 days of the inspection date.

#### **EPG 753.8.1.3.1: Data Checks**

The TMS system has data checks that are programmed into the TMS system. These include data checks developed by FHWA as well as data checks developed by MoDOT. As an additional quality control tool when the inspections in a county are completed, the districts may request that the data analysts in Bridge Division run the edit program on that county and provide the district with any issues that require resolution by the inspector.

#### **EPG 753.8.1.3.2: Inspection Frequency Compliance Reports**

As part of the QC process on inspections, the Team Leader needs to ensure that inspections are performed in compliance with the timelines designated in the NBIS regulations. EPG 753.4.2 provides the expectations for timeliness on various inspections. Because of the large number of structures needing inspections over a short period of time, custom reports have been developed to track the inspections that are past due as well as project ahead the inspections that are coming due.

On a monthly basis (at the end of the month), Bridge Division will generate reports that lists state and nonstate routine inspections, fracture critical inspections, underwater inspections, and in-depth inspections that are either overdue or are required to be completed within the next 60 days. These reports will be provided to Bridge Division inspection staff as well as the DBE and other district inspection staff. The DBE should be reviewing these reports each month to track the inspection progress within their district for inspections that are district and local agency responsibility and following up with their inspectors or local agency contacts to verify that inspections are getting

completed in a timely manner. The DBE is also encouraged to run these compliance reports more frequently on their own to project ahead on inspections coming due beyond the 60-day look ahead period. For inspections that are the responsibility of Bridge Division, the BME, SBIE, or Bridge Inspection Engineer (BIE) should be reviewing the monthly compliance reports for inspections that are past due or are coming due within the next 60 days.

A monthly report will also be generated to identify state structures that are due for in-depth, fracture critical, underwater, and special bridge inspections that are the responsibility of Bridge Division, Dive Team, or Consultants. This report will be provided to the SBIE and the BIE who will be responsible for reviewing the list and making the necessary changes to ensure compliance with inspection frequency requirements. Periodic reports for these inspections on the nonstate system will be provided to the BME, as requested, for scheduling these inspections that will be done by consultants.

Frequent reports on posting compliance will also be generated by Bridge Division and provided to the DBE and the SBIE. The DBE should be reviewing this report and following up with district staff and local agencies to ensure that posting problems are being addressed in accordance with the requirements provided in EPG 753.4.5.

Monthly reports on structures that are coded as under construction will be provided with the compliance reports. These reports should be reviewed by district and Bridge Division inspection staff to determine structures that have been opened to traffic and need to be inspected to capture changes from the construction project. All new or rehabilitated structures are required to have routine inspections completed within 90 days of the structure opening to traffic. For fracture critical structures and structures requiring an underwater deep wade or dive inspection, the window for completion of these specific inspection types is within 12 months of the structure opening to traffic.

### **EPG 753.8.2: QC Procedures for Load Ratings**

The goal of the QC program for load ratings is to ensure that load ratings performed on structures have a high degree of quality and consistency and comply with state and federal requirements for load ratings. The BME has the overall responsibility of ensuring that QC procedures are in place for load ratings performed in Missouri on NBI structures. The SPME and the BRIE will have the day-to-day responsibility for the QC procedures utilized on load ratings that are performed.

QC will be achieved through a variety of means, with the primary procedure being general and detailed reviews of rating results by the BME, SPME, or BRIE. QC will also be achieved thru independent checking of ratings calculations on structures that are load rated. The degree and extent of review and checking of rating results may vary between structures and will be determined by the BME, SPME, or the BRIE on a case-by-case basis.

### **EPG 753.8.3: QC Procedures for Inventory Data**

The goal of the QC program for inventory data is to ensure that the appropriate inventory data is entered on structures to facilitate our bridge inspection and load rating programs and to ensure that the inventory data is compliant with the current requirements in the National Bridge Inspection Standards (NBIS). The BME has the overall responsibility of ensuring that QC procedures are in place for inventory data that is collected and stored on structures in Missouri. The BME, SBIE, SPME, and the BRIE will share day-to-day responsibilities for ensuring that added/updated inventory data complies with the requirements specified in the BIRM or other guides/manuals. The QC program is achieved thru multiple processes within MoDOT.

As an initial process, a data entry person will enter new/updated data and do their own checks of the data entry work to look for obvious errors. In conjunction with this initial process, supervisors and/or coworkers may review various aspects of the data entry for accuracy and consistency, as warranted. Manuals and/or other guidelines are provided to data entry people to assist them with the data entry process.

The second process involves the structure of the computer system for storing bridge inventory data in Missouri. The bridge data in the computer system is stored in a large relational database. The database has a code table structure setup to eliminate data entry errors, where possible, and to significantly reduce the chance for data entry errors when multiple data options may be available. The test of time has shown that this database structure has a huge contribution on the overall quality of the NBI data in Missouri.

The third process involves the edit program that exists in the computer system for bridge data. FHWA has published different data checks that are done on NBI data to look for problems or issues. MoDOT has also developed a lot of more complex data checks and correlations on NBI data. The MoDOT data checks are based on common issues or themes identified over the years as NBI data is processed and reviewed. After updates are done on a structure, the computer system status of the bridge is changed from an “Approved” status to a “Pending” status. All structures in a “Pending” status must be run thru the edit check program at some point prior to the NBI data submittal each year. The edit check program includes the FHWA data checks as well as the MoDOT developed data checks and forces the user to address any critical data issues before the structure can be switched to an “Approved” status for the NBI data submittal. The edit checks and subsequent cleanup are done by Bridge Division data analysts who are specifically assigned to maintain the bridge inventory data at MoDOT.

### **EPG 753.8.4: QC Procedures for Scour Critical Structures**

The goal of the QC program for scour critical structures is to ensure structures that are identified as being vulnerable to scour issues have the appropriate level of oversight to ensure the safety of the structures during flood events that may make a structure more

susceptible to scour. For structures that have been identified as being scour critical, the goal of the QC program is to ensure that scour action plans (SAP) are developed for all scour critical structures and that the plans include the appropriate actions for the potential risks that may exist at a site.

QC is achieved thru the BME or SBIE. All newly scour critical structures require that a scour action plan is developed and submitted to the BME for review. The BME may delegate review of scour action plans to the SBIE in some cases, but ultimately the BME will be responsible for final approval of all scour action plans. A similar process would be followed for any existing scour action plan that is updated when field conditions have changed.

### **EPG 753.8.5: QA Program for Inspections**

A QA program is vital in maintaining a consistent degree of accuracy as well as uniformity in the inspection and program in Missouri. The QA program for inspections will include field review of structures, independent review of inspection reports, data entry reviews/checks, periodic review of the UBI crews, and the reporting of findings at the end of the review period to the various parties involved. The following sections define the various aspects of the QA program that is in place at MoDOT.

#### **EPG 753.8.5.1: Field Inspection QA on District Inspections**

The QA process for routine field inspections on structures inspected by district staff will be achieved with the Field Verification Model as described in the following section. The general responsibility of administering the overall QA program falls to the SBIE, with assistance provided as necessary by the BME and other inspection staff. It is important to understand that the QA process is intended to achieve consistency and uniformity in the inspection process and the assigning of condition ratings or condition states during inspections. It is not intended to be a process for criticizing individual inspectors. The QA process also helps the PM to identify trends that may need to be addressed with additional training or guidance documents.

When doing field reviews that are focused on verification of the previous inspection, it is desirable to complete these reviews within 6 months of the inspection date to minimize the possibility of significant changes on the structure since the inspection. When these inspections are not completed within 6 months of the inspection date and significant differences exist between the field review findings and the previous inspection report, the field review inspector needs to consider the possibility that these differences may have developed since the last inspection.

##### **EPG 753.8.5.1.1: Field Verification Model (FVM)**

An independent Team Leader qualified inspector will take the previous inspection report into the field and complete a QA inspection on the structure to verify the thoroughness

and accuracy of the inspection report along with the assigned condition ratings, condition states, and appraisal ratings for the various parts of the structure that are rated.

**EPG 753.8.5.1.2: Field Review of Routine Bridge Inspections**

Each year, the SBIE or a designee will select a sample of structures in each district for the purpose of reviewing the most recent routine inspection for the structure. This sample will include state and nonstate structures. Also, the SBIE should consult with the BME to determine if there are any known issues or concerns that should influence the selection of the sample within a district.

The developed sample should strive to include structures of various ages, ADT, route classification, structure types, and condition. QA inspections should be done for the sample bridges using the FVM. The findings will be conveyed to the DBE at the end of each review period in a district.

The following are the recommended sample sizes for doing the yearly field reviews of routine inspections. The sample sizes may be adjusted based on resource availability. Counties selected for review will be random.

DISTRICT	State Structures		Nonstate Structures		Total Structures
	# of Counties	# of Structures per County	# of Counties	# of Structures per County	
NW	2	≥5	3	≥5	≥25
NE	2	≥5	3	≥5	≥25
KC	2	≥5	2*	≥5	≥20
CD	2	≥5	3	≥5	≥25
SL	1	≥10	1*	≥10	≥20
SW	2	≥5	3*	≥5	≥25
SE	3	≥5	3	≥5	≥30
<b>Totals</b>	14	≥75	18	≥95	≥170

\*Review may include some structures inspected by local agencies

**EPG 753.8.5.2: Field Inspection QA on Bridge Division Inspections**

The SBIE shall have the overall responsibility for the QA program on inspections done by Bridge Division personnel. This shall be accomplished by both field reviews and checking that data entry into TMS is accurate and consistent. The SBIE may delegate, as needed, various portions of the administration of the QA program to other Bridge

Division inspection staff. When possible, all QA field reviews should be completed within six months of the inspection date.

#### **EPG 753.8.5.2.1: Semi-Annual Site Reviews (In-Depth)**

Semi-annually, an in-depth bridge inspection conducted by each under bridge inspection (UBI) team will be independently reviewed by the SBIE, BIE, or other designated bridge inspection staff. This will be done in the form of a site visit to cross-check the most recent inspection report and any added or deleted comments as well as a review of the assigned condition ratings, condition states, and appraisal ratings for the structure. This site investigation may be performed with or without access equipment with the purpose of looking for thoroughness in the TMS report documentation from a general level. The field findings will be checked against the inspection documentation, including a review that all data and photos have been properly recorded and entered in TMS. The findings will be discussed with the supervisor of the UBI team that performed the inspection.

#### **EPG 753.8.5.2.2: Semi-Annual Site Reviews (Fracture Critical)**

Semi-annually, a fracture critical bridge inspection conducted by each UBI team will be independently reviewed by the SBIE, BIE, or other designated bridge inspection staff. This will be done in the form of a site visit to cross-check the most recent inspection report, fracture critical tables, and any added or deleted comments as well as a review of the assigned condition ratings, condition states, and appraisal ratings for the structure. This site investigation may be performed with or without access equipment, with the purpose of looking for thoroughness in the TMS report documentation from a general level. The field findings will be checked against the inspection documentation, including a review that all data and photos have been properly recorded and entered in TMS. The findings will be discussed with the supervisor of the UBI team that performed the inspection.

#### **EPG 753.8.5.2.3: Unannounced Site Visit**

At least one (1) independent (unannounced) site review of each UBI team will be conducted each calendar year by the SBIE or a designee. Objectives of the review include a thorough review of the logistics of the inspection, adherence to safety guidelines, traffic control set up, inspection techniques, the use of personal protective equipment, and the documentation processes. The review should include spot checks of the inspection findings at the site during the inspection. The findings will be discussed with the supervisor of the UBI team that is performing the inspection.

#### **EPG 753.8.5.2.4: Underwater Inspection Review**

The SBIE or a designee will accompany the Bridge Division dive team at least one week per year and each consultant dive team one day per year while they are performing underwater inspections on a group of structures. The purpose of this visit will be to

verify that inspection procedures are generally being followed and that findings are being properly documented. For dive team inspections, the visit should also confirm that the *MoDOT Manual of Safe Diving Procedures* is being followed.

#### **EPG 753.8.5.2.5: Nonstate Fracture Critical Inspection Review**

As part of the QA review of routine inspections on nonstate structures, a review of fracture critical inspections should be completed. When determining the sample counties and structures in accordance with EPG 753.8.5.1.2, the sample should include one fracture critical bridge in each sampled county, when they exist. If none of the sampled counties include fracture critical bridges, the SBIE should find a fracture critical bridge in another county for review. The field review should be conducted in similar manners as specified in EPG 753.8.5.2.2 and the results of that field review communicated to the District Bridge Engineer.

For nonstate fracture critical bridges that are being inspected by consultants, the SBIE or a designee should coordinate with the BME on the schedule for consultant fracture critical inspections to determine if a field review of the inspections is warranted. Field review will consist of spending time on site with different consultants to observe the inspection process to determine if it is being done in accordance with the appropriate processes and procedures. Field review of consultant inspections is not required each year but should be completed every other year. Results of field review of consultant inspections should be communicated in an email to the BME.

#### **EPG 753.8.5.3: Inspection Report Review**

The SBIE will designate bridge inspection staff to be assigned liaison responsibilities for state inspections in various districts each year. During the inspection season, the designated staff will be responsible for performing a cursory review of the inspection reports for the routine inspections conducted by that district. The primary purpose of this review will be to look for consistency in the recording of inspection findings on the reports. The review may also include a check to see if any additional guidance provided in the annual spring bridge inspector meeting is being followed. This review should also include spot checks of the data entry by the district to verify the accuracy of the data entry in TMS, verify that appropriate photos are on file to document conditions, and make note of conditions that might warrant follow-up or further investigation and documentation. The BIE, or a designee, will perform similar oversight for inspection reports that are completed by the UBI crews. The SBIE or a designee will perform this review for underwater inspection reports from the dive team.

The nonstate system inspection reports are more streamlined when compared to the inspection reports for state bridges. Nonstate inspection reports are submitted to the Bridge Division along with a cover letter summarizing various findings from the inspection of the structures within that local agency. The Bridge Inventory Analysts (BIA) will perform a review of the inspection reports on each structure as part of their

review of the inspection packet that was submitted for that local agency. This review may also include data queries, as needed, to check for coding inconsistencies or errors.

#### **EPG 753.8.5.4: Field Review of Load Posting Compliance**

Spot checks on load postings will be done as part of QA inspections on structures during the QA review for each district. Load posting problems that are found during these spot checks will be immediately forwarded to the DBE to be addressed in accordance with the requirements provided in EPG 753.4.5.

#### **EPG 753.8.5.5: Review of Poor Condition Structures**

The sample of structures in various districts that are reviewed as part of the QA process will include some state and nonstate structures that have the deck, superstructure, substructure, or culvert condition rated as being in Poor condition (Condition 3 or 4). When this review is being done on inspection reports it will serve as a means for verifying that there is an appropriate level of documentation of the poor condition findings on the structure. When this review is being done as part of a field review it will serve as a means for determining if the inspectors are properly flagging structures that may need a load rating review.

For the nonstate system, the BIA will flag poor condition structures and structures with the scour rating of 4 or below for further review as part of the review of the inspection packet submitted for each local agency. The BIA will create a listing of these structures along with some general summary information and provide that to the BME. The BME or a designee will review each structure to determine if any additional action is needed and that any load postings in place are appropriate for the documented conditions on a structure. Issues and questions related to these structures will be communicated to the DBE or other district inspection staff for further review and discussion.

#### **EPG 753.8.5.6: QA End of Review Period Summary**

At the end of each review period, the SBIE (or designee) will produce a summary of the QA findings from the previous year. This summary report will be provided individually to each DBE. The goal will be to have this summary report completed and submitted by September 1 of each year. As requested by the BME, the SBIE should prepare a generalized summary of the statewide findings for presentation at the annual bridge inspector meeting in the spring.

#### **EPG 753.8.6: QA for Load Rating Data**

For state system structures, load ratings completed by MoDOT staff for new and rehabilitated structures are independently checked by Bridge Division staff. Structures that have the load ratings updated because of significant changes on the structure will be reviewed by the SPME, BRIE, or a designee, to assess the quality of the rating data,

determine load posting needs, determine overweight permit restrictions, and determine the appropriate TMS inventory data updates that are needed. Load ratings that have been completed by a consultant will follow a similar process with the extent of the review determined by the BME, SPME, or BRIE on a case by case basis.

For nonstate structures, load ratings that are completed by Bridge Division staff will be reviewed by the BME, SPME, or BRIE for quality and accuracy. Ratings completed by consultants or local agency engineers will be reviewed for quality and accuracy by the BME, SPME, BRIE or other designated Bridge Division staff. The extent of the review required for nonstate load ratings on a structure will be determined by the BME, SPME, or BRIE and may include some independent checking of load rating calculations, when warranted. Load posting changes and the appropriate updates for NBI data will be determined by the BME, SPME, BRIE or other designated staff as appropriate.

When common issues or trends are identified for load ratings, custom queries may be used to assist in quality assurance tasks for load rating review. The custom queries will typically be completed by the BME (or a designee). The purpose of these queries would be to identify structures that may need data cleanup or further review of the load rating results.

### **EPG 753.8.7: QA for Inventory Data**

QA for inventory data input into TMS is predominately done thru the edit checks that are programmed into the TMS system. As part of their daily work or as part of a review of an inspection submittal package, the BIA will run system edit checks on structures to look for errors and data inconsistencies. Additional custom data queries may also be run to look for data inconsistencies or identify trends in inventory data. These edit checks and queries will be used to address issues on specific structures and identify common themes or problems that may need additional guidance developed for inspectors or data entry personnel.

As part of the QA process, the SBIE should discuss with the BME the need for a sampling of structures to do field verification of various inventory data items coded on a structure in the TMS System. This field review would focus on data items that are known to be commonly miscoded. This field review may be done on an independent sample of structures, or it may be done on the same structures that were used in the inspection review. Coding errors are the most common on the nonstate system, so this process may be focused on this subset of structures.

### **EPG 753.8.8: QA for Scour Critical Structures**

As part of QA, the SIBE or a designee should pick a sample of scour critical structures in each district for review. The review should look at the most recent information on the conditions at the structure related to the scour critical status. The scour action plans for the sample of structures should be reviewed for accuracy and to determine if any updates

are needed. Any issues or concerns on scour critical structures should be discussed with the BME.

For structures newly classified as scour critical as the result of a recently completed inspection, the BIA should determine if a scour action plan has been developed for that structure. Any developed scour action plans should be provided to the BME for review and approval. For any structures that are missing scour action plans, the BIA should provide information to the BME for direction and guidance on resolution of the issue.

