

## **Specification for the National Bridge Inventory Bridge Elements (SNBIBE) Frequently Asked Questions and Answers**

The following frequently asked questions and answers expand upon those provided in our earlier memoranda:

### What are the goals of the SNBIBE?

The goals of this specification are to: a) provide the framework needed to support inventory and assessment of common bridge elements that can be used to better describe the condition of bridges in the NBI; and b) provide consistency for element identification, quantity measurement, and condition state (CS) assessment. The SNBIBE can be found at the following link:

[http://www.fhwa.dot.gov/bridge/nbi/131216\\_a1.pdf](http://www.fhwa.dot.gov/bridge/nbi/131216_a1.pdf).

### Where can the element descriptions, quantity calculations and CS definitions be found?

The SNBIBE references the AASHTO Manual for Bridge Element Inspection, First Edition, 2013 for element descriptions, quantity calculations and CS definitions. Element descriptions, quantity calculations and CS definitions are not included in the SNBIBE.

### Where can I find a list of bridge elements for which data will be collected by the FHWA?

Refer to Table 1 and Appendix B of the SNBIBE for a listing of elements for which data will be collected by the FHWA for NHS bridges.

### Why does FHWA intend to collect some AASHTO Bridge Management Elements (BMEs) in addition to National Bridge Elements (NBEs)?

Collection of some BME data will facilitate bridge preservation needs assessment and performance measurement. For the NBEs, the FHWA is looking for consistency in condition state language. For the BMEs, the FHWA understands that States may deviate from the condition state language found in the AASHTO Manual for Bridge Element Inspection, First Edition, as long as the four states still represent good, fair, poor, and severe conditions.

### What data items will be collected for each element inventoried for a bridge?

Data items to be collected for each element inventoried for a bridge are specified in the Element Data Items section of the SNBIBE. The Bridge Element Data Format is shown in Appendix C of the specification.

### Will specific material defect data shown in the AASHTO Manual for Bridge Element Inspection be collected by the FHWA?

Specific material defect data as shown in Appendix D and Figure D-1 of the AASHTO Manual for Bridge Element Inspection, First edition, will not be collected by the FHWA.

### Are there any plans for combining the specification for the NBI and the SNBIBE?

Yes, we plan to eventually combine the updated specifications for the NBI and the SNBIBE.

What are the expectations for reporting element level data for NHS bridges that are inspected at an extended interval?

In accordance with 23 U.S.C. 144(d)(2), commencing on October 1, 2014, State and Federal agencies that have not already done so are to begin collecting element level data as each NHS highway bridge is field inspected in accordance with 23 CFR 650 Subpart C. Therefore, the expectation is that element level data is to be collected during the first scheduled inspection after October 1, 2014 for bridges meeting approved criteria for extended inspection intervals. Any exceptions to this will require case-by-case approval through the Division Office.

Some States are assuming that the element inspection data is associated with the routine inspection only, is this true?

This is not true. According to the Moving Ahead for Progress in the 21st Century Act (MAP-21), “Section 1111(d)(2) - INSPECTION REPORT- Not later than 2 years after the date of enactment of the MAP-21, each State and appropriate Federal agency shall report element level data to the Secretary, *as each bridge is inspected* [emphasis added] pursuant to this section, for all highway bridges on the National Highway System.” The FHWA interprets the phrase “*as each bridge is inspected*” to mean that element data is to be updated whenever conditions change regardless of the inspection type. This is not unlike the current practice and expectations associated with reporting component condition ratings for the deck, superstructure, substructure, and culvert. The FHWA expects the element data reported to reflect current conditions regardless of the types of inspections done to gather the data. States and Federal agencies have latitude to establish their processes to ensure that the element data is updated prior to reporting to the FHWA, just as they have done for NBI component ratings.

The FHWA has indicated that they believe an element inspection may be required for all inspections, is this true?

This is true for only the elements or portions of the elements that are inspected during a specific inspection type. States and Federal agencies have latitude to establish their practices to ensure that the element data is updated and complete prior to reporting to the FHWA, just as they have done for NBI component ratings. For example, if a State chooses to only update fracture critical (FC) element condition data during an FC member inspection, they ultimately need to establish the means of combining the FC element data with all other elements on the bridge for a complete submission to the FHWA.

What do we need to do when the truncated or rounded numbers don't add up? For example: CS1: 1.25, CS2: 1.25, CS3: 1.25, CS4: 1.25, Total Quantity = 5 (exact value). After truncating, CS1: 1, CS2: 1, CS3: 1, CS4: 1, Total Quantity = 4 (truncated value).

The values in condition states (CS) 1 through 4 need to sum to the actual total quantity for the element. The values provided in this example are more precise than what would typically be expected for an element level inspection. Therefore the quantities should be shown as whole numbers starting from CS4 and working toward CS2 with any remaining quantity going into CS1. The total quantity would be reported as 5 and CS1 through CS4 would be a whole number portion of 5 so one of the condition states would be 2 and the others would be 1.

How will FHWA handle Agency Developed Elements (ADEs)? If an agency subsets a National Bridge Element (NBE) or Bridge Management Element (BME) through the use of ADE's, is the FHWA expecting that these be rolled up into the appropriate NBE or BME for submission?

The FHWA would expect NBE or BME sub-elements (ADE-NBE or ADE-BME) to be reported to the FHWA as the related AASHTO NBE or BME. No independent ADEs (ADEs that are not sub-elements of NBEs or BMEs) are expected to be submitted. Therefore, as an example, an ADE-BME that identifies lead-based steel protective coating would be reported to the FHWA as BME 515-Steel Protective Coating. An ADE-NBE that breaks out steel beam ends would need to be reincorporated back into NBE 107-Steel Open Girder/Beams.

Is there any other associated error handling/validation that the FHWA may be doing on their side (e.g. comparing the NBE submittal to the bridge numbers, ratings, etc. of the NBI submittal)?

The FHWA has plans to develop some consistency checks for NBI data and element data. Having the state code and structure number will help the FHWA associate the two data sets. A full list of the planned data checks will be added at a future date.

While developing a schema from our data using the Appendix C from the Dec. 2013 memo from the FHWA, I was able to create the xml file. However, when I put it into an xml builder, it would not accept the file. I was able to figure out some items that were causing the problems.

Thank you for the feedback, the information, and recommendations. We worked with our developers to analyze what happened and developed a revised XML schema and example XML data set.

Will FHWA allow a State to continue collecting CoRe elements after October 1, 2014 and submit elements that have been converted through the migrator to FHWA?

On October 1, 2014, it is expected that all State's will be performing element level inspections, preferably in accordance with the 2013 Manual. On April 1, 2015, FHWA will be collecting element level data in a format consistent with the 2013 Manual as outlined in the SNBIBE and the XML schema. If a state wishes to continue using the CoRe elements and using the migrator to convert it to the 2013 Manual elements, they can do so. However, it is expected that the data will be a sufficient quality for comparisons with the condition ratings and for reporting to Congress, which includes performing quality checks on the migrated data being submitted to FHWA, AND the State will have a plan to transition from the CoRe elements to collecting data in accordance with the 2013 Manual elements.