



Memorandum

Subject: **ACTION:** Annual Call for Update of the
National Bridge Inventory and NHS
Element Level Collection 2016

Date: January 28, 2016

From: /Original signed by/
Joseph L. Hartmann, Ph.D., P.E.
Director, Office of Bridges and Structures

In Reply Refer To: HIBS-30

To: Division Administrators
Federal Lands Highway Division Directors

We hereby request that each State, Federal agency, and tribal government submit to the Office of Bridges and Structures a copy of their most current National Bridge Inventory (NBI) data on highway bridges by April 1, 2016. We also request that each State, Federal agency, and tribal government submit to the Office of Bridges and Structures a copy of the element level bridge inspection data they have collected on NHS bridges by April 1, 2016. NBI and element level inspection and data collection are required by the National Bridge and Tunnel Inspection Standards 23 U.S.C.144. Details of the submittal requirements are outlined below.

The NBI data items are to be submitted in the 432 character record format defined by the "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges," December 1995 (NBI Coding Guide), including updates, available from the FHWA Bridge and Structures website: <http://www.fhwa.dot.gov/bridge/nbi.cfm>.

Element data items are to be submitted following the XML schema issued by FHWA in its July 25, 2014 memorandum, <http://www.fhwa.dot.gov/bridge/nbi/140725.cfm>, and following the Specification for the National Bridge Inventory Bridge Elements (SNBIBE) issued in its December 16, 2013 memorandum, <http://www.fhwa.dot.gov/bridge/nbi/131216.cfm> and the AASHTO Manual for Bridge Element Inspection, First Edition, 2013, with Interim Revisions. The transmittal document must indicate if the element data submittal was field collected in accordance with the SNBIBE and AASHTO Manual, migrated from AASHTO Commonly Recognized Elements or other element format, or a combination of collected and migrated.

Options for submitting the files include:

- Submittal through the web-enabled NBI system by logging on to FHWA User Profile & Access Control System (UPACS). Use the Submittal tab in the NBI system.
- Email the submittal file to the Office of Bridges and Structures mailbox BridgeOfficialMailbox.FHWA@dot.gov with a copy to Samantha.Lubkin@dot.gov and Douglas.Blades@dot.gov.
- If the file is too large for email, contact Samantha or Doug for submittal options.

New for the 2016 NBI data submittal:

- Tunnels are no longer being accepted into the NBI as they should be included in the National Tunnel Inventory (NTI). No structure should be included in both the NBI and the NTI.

Error checking and expectations for NBI and Element data:

- All NBI data should be submitted in metric units, as outlined in the NBI Coding Guide. Element data should be submitted in U.S. customary units, as outlined in the SNBIBE.
- The annual submittals must be a full data submittal. The following options are available for submitting and updating data:
 - Full Data Submittal - The submitted data file contains a complete data set. During processing of a full data submittal, records in the existing NBI master file which match identification numbers (IDs) with submitted data are updated. Records in the NBI master file that do not have a match in the submitted file are automatically deleted and a list of their IDs is provided. Records in the submitted file which do not exist in the NBI master file are added.
 - Partial Inventory Update - The partial option is used throughout the year for updating smaller sets of bridge information. During processing of a partial inventory update, records in the existing NBI master file which match IDs with submitted data are updated. If there are records in the NBI master file that do not have a match to the submittal file, they are retained in the master file. Records on the submitted file which contain a State code, structure number, and the first digit of item 5a but contain no other data are deleted from the inventory. This option is not available for Element data files.
- NBI and Element data files are to be checked for errors by each State, Federal agency, and tribal government prior to submittal. An error checking tool is available on the FHWA Office of Bridges and Structures website, <http://www.fhwa.dot.gov/bridge/nbi.cfm>, and on the Check Data tab of the NBI System behind UPACS. A list of the error checks is also available on the website. In addition, data quality should be verified by the FHWA Division Office or Federal Lands Bridge Office prior to submittal.
- Files with significant errors will be returned for resolution. A corrected file will be required to be submitted within 15 calendar days. Significant errors include:
 - Duplicate records. If duplicate records are submitted, the system is designed to use the first one encountered, reject any others, and write an error message displaying rejected records. However, the bridge owner should determine which record is correct and should be loaded.
 - Item 64 less than 2.7 metric tons; and Item 41 = A, B, P, or R; and Item 103 is blank. Bridge owners should ensure these bridges are closed and the data is corrected prior to submittal.
 - Item 59 and/or Item 60 coded less than 2; and Item 41 = A, B, D, P or R; and item 103 is blank. Bridge owners should ensure these bridges are closed and the data is corrected prior to submittal.

- Errors that occur for any of the following items::
 - Item 32 (Approach Roadway Width)
 - Item 49 (Bridge Length)
 - Item 52 (Deck Width Out-to-Out)
 - Item 58 (Deck Condition Rating)
 - Item 59 (Superstructure Condition Rating)
 - Item 60 (Substructure Condition Rating)
 - Item 62 (Culvert Condition Rating)
- Each FHWA Division Bridge Engineer should download from the NBI System behind UPACS a list of errors that have occurred for 3 consecutive years (2013-2015). These errors must be resolved prior to submittal unless the bridge is on an extended inspection frequency and the error cannot be resolved until the next inspection cycle. When discussing this letter and these repeated errors with the State, please provide them a copy of the error reports. When the 2015 processing reports were returned to the Division Bridge Engineers, a 2-year error report was included. This should have been given to the State along with the processing report to be used as a tool to avoid the error showing up on the 3-year error report generated after the 2016 processing. A very small number of these repeat errors have valid exceptions, for example sidehill viaducts. The 2014 file submittal moved these errors to a separate report for validation to their exception and these validation errors are not counted in the error summary.
- Upon loading the State, Federal, or tribal data into the NBI database, reports are prepared detailing all of the transactions, data summaries, and errors. For State file processing, these reports are automatically emailed to all registered NBI users in that particular State. The FHWA Division Bridge Engineer should forward these reports to the State since not all States maintain a UPACS account. For Federal and tribal submittals, the reports are emailed to the Federal Lands Highway Office to forward to the Federal agency or tribal government.

Federal and tribal updates in a State are processed separately, so Federal and tribal bridge information will not necessarily be completed at the same time the State file is processed. After the data are processed, the NBI user can generate reports on the newly loaded data. There is a note on each tab of the processing reports indicating the expectation of the handling or resolution of that information. It is expected that bridge owners will review these reports and make necessary corrections to data or plans for correction of the data within 90 days of receipt of the error report. Bridge owners may then elect to submit an updated data file to FHWA.
- The following reports are produced as part of the error check and the data load procedure. These reports are generated for structures which carry highway traffic only. Reports are produced based on the following criteria in order to identify situations that may reflect an inconsistency in coding, a coding error, or situations that require follow-up.
 - Item 64 between 2.7 metric tons and 19.9, Item 41 = A, Item 43b not equal to 19, and Item 103 is blank. Structures on this list likely need posting; further investigation may be needed to verify whether posting is required.
 - Any bridge with Item 41 coded B. Follow-up for these structures is required to ensure that bridge posting is promptly resolved.

- Items that are inappropriately omitted or otherwise miscoded will receive an error message. In general, error messages generated in the April 2015 submittal files are expected to have been fixed in the April 2016 submittal; however, the FHWA recognizes that some errors will not be resolved until the next inspection cycle.
- Coordination between bridge owners should be conducted to ensure consistency between NBI submittals of border bridges, as 2014, 2015, and 2016 NBI data is the initial 3-year period of determination for implementing the National Highway Performance Program (NHPP) bridge condition penalty provision – 23 USC 119(f)(2) – and as described in the MAP-21 Bridge Q&As.
- State data submittals should not include bridges owned by Federal agencies or tribal governments unless the State has inspection or maintenance responsibility for the Federal or tribal bridge.
- As part of the annual NBIS review, the April 1, 2016 submittal will be assessed for timeliness as part of Metric 23 – Timely Updating of Data and for data quality as part of Metric 22 – Inventory – Prepare and Maintain, <http://www.fhwa.dot.gov/bridge/nbip/metrics.pdf>.
- Structure number changes are not allowed. This policy was initiated in 2012.

Please direct questions to Samantha Lubkin at (202) 366-1575 or e-mail to Samantha.Lubkin@dot.gov. Alternately, questions can be directed to Doug Blades at (202) 366-4622 or e-mail to Douglas.Blades@dot.gov.

cc:

Directors of Field Services

Director of Technical Services