

# Questions and Answers on the Specifications for the National Bridge Inventory – Publication No. FHWA-HIF-22-017

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On May 6, 2022, at 87 FR 27396, FHWA published a final rule updating 23 CFR part 650, subpart C - National Bridge Inspection Standards (NBIS). The final rule incorporates by reference the Specifications for the National Bridge Inventory (SNBI), which is dated March 2022. These Questions & Answers (Q&As) aim to facilitate implementation of the SNBI. If your question is not addressed by these Q&As, please email your question to: [NBIS SNBI Questions@dot.gov](mailto:NBIS_SNBI_Questions@dot.gov).

Since the SNBI is incorporated by reference in NBIS (23 CFR 650.317(b)(1)), there is some NBIS discussion in this document. There are separate Q&As for the NBIS, which should be referenced for clarification on the regulatory requirements.

Except for any cited statutes or regulations, the contents of these Q&As do not have the force and effect of law and are not meant to bind the public in any way. These Q&As are intended only to provide information regarding existing requirements under the law or agency policies.

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## General (G)

**QG-1** Where can I find the SNBI and in what format is the document available?

**AG-1** A PDF of the SNBI can be downloaded from FHWA National Bridge Inventory website <https://www.fhwa.dot.gov/bridge/nbi.cfm>. Printed copies will not be supplied by FHWA.

**QG-2** What is the history of National Bridge Inventory (NBI) data reporting specifications leading up to this version of the SNBI?

**AG-2** The SNBI takes the place of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (Coding Guide) published in December 1995. Earlier versions of the Coding Guide were published in 1971, 1972, 1979, and 1988. In January 2014, the SNBI Bridge Elements was published by FHWA as a supplement to the Coding Guide in

response to the MAP-21 legislation requirement for States and applicable Federal agencies to report element-level data for bridges on the National Highway System.

**QG-3** Why replace the Coding Guide?

**AG-3** The SNBI includes data items and specifications that provide an improved ability to assess and monitor bridge safety and compliance with the National Bridge Inspection Standards. It includes clarifying item specifications and expanded examples to improve ease of use and data quality. It includes new and expanded items and codes to support the administration of risk-based data driven asset and performance management programs. These enhancements also provide the ability to report to Congress on the administration of National programs and condition and needs as well as respond to bridge-level inquiries.

**QG-4** What happens with the Coding Guide?

**AG-4** The Coding Guide will sunset on Dec. 31, 2025. No inventory or inspection after that date should be performed using the Coding Guide. Data collected using the Coding Guide format will be considered legacy NBI data.

**QG-5** What are the most significant global changes?

**AG-5** FHWA considers the following to be the most significant global changes from the Coding Guide:

- Changed from metric to U.S. customary units
- Specification and Commentary format
- Inclusion of many-to-one data relationships (both items and codes)
- Item IDs instead of Item Numbers, e.g., B.C.01 – Deck Condition Rating
- More examples including a comprehensive example that is progressed through the entire document
- Non-NBIS structures will not be processed
- Emphasis on consistency with data reported to the Highway Performance Monitoring System

**QG-6** Which Coding Guide items will no longer be reported to the National Bridge Inventory?

**AG-6** The following items from the Coding Guide are discontinued. Please note that information provided by some of these items can now be obtained from SNBI items. Additionally, some of these are items were calculated but not reported: FHWA Region Code (1B), Base Highway Network (12), LRS Subroute Number (13B), Structure Flared (35), Approach Guardrail (36C), Approach Guardrail Ends (36D), Reference Feature (54A), Reference Feature (55A), Structural Evaluation (67), Deck Geometry (68), Underclearances, Vertical and Horizontal (69), Work Done By (75B), Length of Structure Improvement (76), Bridge Improvement Cost (94), Roadway Improvement Cost (95), Total Project Cost (96), Year of Improvement Cost Estimate (97), Parallel Structure Designation (101), Future Average Daily Traffic (114), Year of Future Average Daily Traffic (115).

Additionally, the following calculated items that were based on certain Coding Guide items have been discontinued: Sufficiency Rating Asterisk, Sufficiency Rating, and Status (Structurally Deficient, Functionally Obsolete, Not Deficient, Not Applicable).

**QG-7** What structures are subject to reporting to FHWA in accordance with the SNBI?

**AG-7** Data must be reported to the NBI for all structures that meet the applicability requirements of 23 CFR 650.303 and which are defined as a *bridge* according to 23 CFR 650.305. Data for structures that meet the applicability requirements of 23 CFR 650.503 and which are defined as a *tunnel* according to 23 CFR 650.505 are reported to the National Tunnel inventory in accordance with the Specifications for the National Tunnel Inventory (incorporated by reference in 23 CFR 650.517(c)(2)).

## Implementation Timeline (IT)

**QIT-1** When did the SNBI take effect?

**AIT-1** The NBIS Final Rule (23 CFR part 650, subpart C) took effect on June 6, 2022, 30 days after its May 6, 2022, publication in the Federal Register (87 FR 27396). The SNBI is incorporated by reference in 23 CFR 650.317(b)(1). The timeline for transitioning to the SNBI is provided on page 3 in the May 25, 2022, FHWA memorandum [ACTION: Implementation of the Specifications for the National Bridge Inventory](#).

**QIT-2** When does the FHWA expect full implementation of the SNBI?

**AIT-2** In accordance with the May 25, 2022, Memorandum [ACTION: Implementation of the Specifications for the National Bridge Inventory](#), a complete and verified SNBI-based dataset should be submitted for all bridges that are reportable to the NBI by March 15, 2028.

## Transitioning Data (T)

**QT-1** What is transitioned NBI data?

**AT-1** Transitioned NBI data is data collected in accordance with the Coding Guide that has been transitioned to SNBI-based data using the logic contained in the FHWA Data Crosswalk and Detailed Code Mapping tables. The FHWA intends to provide an online Transition Tool that may be used to transition a Coding Guide-based NBI file to an SNBI-based file. The Transition Tool will be available on the FHWA website from April 2023 until June 2026.

Agencies can use the Data Crosswalk and Detailed Code Mapping tables, or the Transition Tool, to initially populate their data collection systems or tools in preparation for further collection and validation of SNBI-based NBI data. The FHWA will use the same to transition its legacy data so that it can be used concurrently with SNBI data. This will allow for data comparison and trend analyses over a period of coverage that includes data collected in accordance with the Coding Guide, transition period data, and data collected in accordance with the SNBI. Legacy data will also continue to be available from the NBI in original Coding Guide format.

**QT-2** Which Coding Guide items and codes/values will be transitioned to SNBI-based data?

**AT-2** As shown in the Data Crosswalk tables, not all Coding Guide data can be transitioned to the SNBI, and not all SNBI fields can be populated by transitioned data. The FHWA transition logic applies only to items and codes/values, which are defined similarly in the Coding Guide and SNBI

and for which a relationship can be described by rules that transition the data format, codes/values, and units of measure. The FHWA Data Crosswalk identifies if a data item transitions cleanly, partially, or not at all. An item which all Coding Guide codes/values map to SNBI codes/values is categorized as a clean transition. An item which some Coding Guide codes/values map to SNBI codes/values is categorized as a partial transition.

- “Yes” indicates a clean transition for that data item, meaning that all Coding Guide data codes/values transition to SNBI codes/values for that item. Items that transition cleanly should be verified, and corrected if necessary, before the March 15, 2028, data submittal.
- “No” indicates that Coding Guide data cannot transition to SNBI codes/values for that item. These fields transition to a null value, and should be populated before the March 15, 2028, data submittal.
- “Partial” indicates one or more of the following, for which in all cases the transitioned data should be verified, and corrected if necessary, before the March 15, 2028, data submittal.
  - Some code/values transition cleanly, and some do not.
  - Some or all codes/values transition into temporary codes that must be resolved into permanent codes by the March 15, 2028, data submittal.
  - Codes are transitioned based on a logical assumption that is explained in the “Transition Notes for Developer” or “Additional Notes” column.
- “Calculate” indicates that the value is calculated from Coding Guide items and then transitioned. This field will be calculated for each data submittal and need not be verified.

**QT-3** How long will data exist in transitioned form?

**AT-3** The FHWA will accept transitioned data only for the 2026 and 2027 data submittals, as SNBI-based data is being collected or verified. These two datasets will contain a combination of transitioned SNBI data and collected or verified SNBI data. Verified data refers to transitioned data that has been validated by inspection or review. Transitioned data will not be accepted for the March 15, 2028, data submittal, as at that time FHWA will have implemented business processes and program oversight that no longer uses transitioned data and are based on a complete SNBI-based NBI dataset.

**QT-4** When FHWA uses the term “legacy data,” what does that mean?

**AT-4** Legacy data is data that was reported to FHWA using the Coding Guide. Legacy data will continue to be available from the NBI in its original form.

## Data Submittal Format (F)

**QF-1** What file type is required for NBI data submittal?

**AF-1** NBI data submittals should be in the JSON file type. A data schema is available on the NBI website.

**QF-2** Will element data continue to be submitted separately from other NBI data?

**AF-2** The SNBI-based data submittal schema/format combines all NBI data including element data into a single file for submitting to the NBI.

**QF-3** My data file is very large. Will I be able to submit it?

**AF-3** For ease of preparing and submitting large data files, subsets of data may be submitted in multiple files. All submitted files for an Agency will be combined for submittal processing.

## SNBI Section Border Bridges (BB)

**QBB-1** Do border bridges require a data submittal from each border State?

**ABB-1** Yes, neighboring States are each required to submit border bridge data. The National Performance Management Measures regulation section 23 CFR 490.411 requires the inclusion of border bridges in each State's minimum condition level computation. Additionally, 23 CFR 490.106(d) requires the inclusion of border bridges in each State's and MPO's establishment of performance targets. The SNBI provides some relief by requiring the Designated Lead State to submit a full bridge record and the Neighboring State (non-lead) may submit an abbreviated record. Item B.L.10 Border Bridge Designated Lead State is reported by both States.

**QBB-2** Which items does a Neighboring State report for a border bridge?

**ABB-2** SNBI page 21 discusses border bridges and identifies the items reported by a Neighboring State (non-lead). Additional data items that are reported by the Neighboring State will not be processed.

**QBB-3** Will data submitted by a Designated Lead State and Neighboring State be merged by FHWA and what differences will exist between the State bridge inventories in the NBI?

**ABB-3** Yes. When FHWA incorporates the Designated Lead State submitted data into the Neighboring State bridge inventory, the data items in the abbreviated dataset, identified on page 21 of the SNBI and submitted by the Neighboring State, are retained. The differences between Designated Lead State and Neighboring State bridge records will be observable in the accepted NBI data made available for download or viewing.

**QBB-4** Does a border bridge Designated Lead State report all Features datasets associated with a bridge including features located within the border of a Neighboring State?

**ABB-4** Yes. Referencing SNBI page 21, all Item B.F.01 feature types and their associated datasets, regardless of location on, above, or below a bridge, and on either side of a border, are reported by the Designated Lead State. This includes all associated Features datasets for Highways, Routes, Railroads, and Navigable Waterways (reference SNBI Section 4 Features).

**QBB-5** Does a border bridge Neighboring State submit all Features datasets associated with a bridge, including features located within the border of a Designated Lead State?

**ABB-5** No. Referencing SNBI page 21, for Item B.F.01 Feature Type, a Neighboring State submits only highway features carried on or passing above the bridge. The associated Features datasets for Highways and Routes are reported. The Neighboring State does not report non-highway

features. Referring to Item B.F.01 Feature Type, non-highway features include railroads, pathways, waterways, relief for waterways, urban features, dry terrain or side slope, and other, all of which are not reported by a Neighboring State.

**QBB-6** How will FHWA merge the Features datasets submitted by a Designated Lead State and Neighboring State?

**ABB-6** When FHWA incorporates the Designated Lead State Features datasets into the Neighboring State bridge inventory, we will not incorporate the highway features that are also reported by the Neighboring State, i.e., the highway features carried on or passing above the bridge and the associated datasets including the Routes datasets. Referring to SNBI Figure 1 - SNBI Data Relationships on page 5: because the Item B.F.01 Feature Type reported value serves as a unique identifier for a Features dataset, the B.F.01 reported values for highway features on and above the bridge must be consistent between the Designated Lead State and Neighboring State. Otherwise, the Neighboring State data will be applied to a different feature than the corresponding Designated Lead State data, creating inaccuracies in the Neighboring State's dataset. This is the reason for the SNBI page 21 narrative that says, "It is essential that Item B.F.01 (*Feature Type*) values be assigned to the same features by both States so that the Designated Lead State's submitted feature data are assigned to the correct feature records in the Neighboring State's inventory."

## SNBI Section 4: Features (S4F)

**QS4F-1** For Item B.F.01 Feature Type, when are more than one waterway features reported (and all associated items for that feature) and when are both a waterway feature and relief for waterway feature reported?

**AS4F-1** A W## - waterway or a F## - relief for waterway feature type should be reported when a bridge spans over water. This applies whether the water source is perennial or intermittent, including if flow exists only during flood stage. A W## feature type is reported for each unique waterway spanned by the bridge. A bridge that spans a single unique waterway and/or its associated floodplain, will have a single feature reported. Also, a bridge that spans multiple channels or branches of the same unique waterway will have a single feature reported. A bridge that spans more than one unique waterway, although very rare, will have multiple features reported (i.e., W01, W02).

A F## feature type is reported for relief bridges that provide waterway opening for flow only during flood stages and furnish additional hydraulic capacity.

A W## and separate F## feature type would be reported only when the bridge spans a waterway and a separate relief channel is constructed in the floodplain; this would be a very rare condition.