

3. Methodology

The process of evaluating the 1,405 bridges involved three steps: pre-field analysis, field survey, and National Register evaluation.

A. Pre-field analysis

Information was gathered from the following sources to provide an understanding of the potential significance and historic integrity of bridges and to identify bridges for field survey.

- *BISON database:* BISON (Bridge Inspection System of Nebraska) is the NDOR bridge inspection database that catalogs location, and descriptive and structural information on all state highway, county road, and city street bridges within the state for the FHWA's National Bridge Inventory. Information recorded in BISON useful to National Register evaluation included year built and year reconstructed dates, bridge type, number of main spans, overall and main span length, and feature carried and feature crossed. Many of the year-built dates in BISON, particularly for the county bridges, appear to be estimated dates and many of these dates could not be updated due to a lack of available records.

Mead & Hunt used a filtered version of BISON, provided by NDOR in October 2006, which listed bridges built or reconstructed within the subject period, which was the basis for the Historic Bridge Database.

- *Bridge inspection photographs:* Bridge inspection photographs are available for most state bridges and some county and municipal bridges. The photographs aid in identifying and verifying non-BISON bridge types, such as plate girder versus I-beam; bridge types coded in BISON; aesthetic features, including decorative treatments or railings; and alterations.
- *Bridge inspection reports:* Bridge inspection reports provided little information not already incorporated into BISON. Older bridge inspection reports, largely from the 1970s and 1980s, are available for county bridges and some state bridges and can indicate alterations not otherwise identified.
- *Bridge plans:* Available bridge plans assisted in identifying character-defining features and alterations. As-built plans and subsequent plans indicated modifications and alterations. NDOR has few plans for county and municipal bridges. NDOR standard plans were reviewed to provide information on the types of structures that were commonly constructed by the state during the subject period and provided information on typical lengths and features.

After gathering basic information, the subject pool of 1,405 bridges was divided into three categories: field survey, not eligible, and listed/determined eligible. Each bridge was first analyzed as a component of a larger group, based on type. The degree of change to a bridge was weighed against its engineering and historical significance.

- *Field survey* – 302 bridges were selected for field survey based on the identification of features or characteristics that suggested National Register significance. Examples include, but were not limited to, unusual structure or main-span length, number of main spans, aesthetic treatment, date of construction, and potential historic significance.
- *Not eligible* – 1,099 bridges were determined not eligible and eliminated from further review, based on their common use in the state and lack of historic and/or engineering significance.
- *Listed/Determined Eligible* – Four bridges were already listed in, or determined eligible for listing in, the National Register. Three bridges (C007522105, NeHBS No. R000-072, C007910325 and C007910330; both NeHBS No. SFOO-040) are listed in the National Register and Bridge C000913725 (NeHBS No. BW00-067) was already determined eligible.

B. Field survey

The pre-field analysis identified 302 bridges for field survey. The field survey and documentation of these structures verified and updated BISON information and identified or confirmed character-defining and special features, alterations, and historical associations. Field survey information, digital images, and eligibility recommendations, are recorded in the Historic Bridge Inventory database and Historic Bridge Inventory forms. Table 2 lists field survey bridges by type.

Table 2
Bridges Selected for Field Survey *

Bridge Type	Number of Bridges
Concrete channel beam (122)	3
Concrete frame (107)	4
Concrete girder and floor beam system (103)	0
Concrete slab and continuous concrete slab (101 and 201)	27
Concrete stringer/multi-beam/girder (102)	2
Concrete tee beam and continuous concrete tee beam (104 and 204)	8
Continuous concrete box beam w/girders (205)	2
Prestressed concrete beam/girder and continuous prestressed concrete beam/girder (502 and 602)	22
Prestressed concrete channel beam (522)	2
Prestressed concrete continuous box beam w/girders (505)	4
Prestressed concrete tee beam (504)	2

**Table 2
Bridges Selected for Field Survey ***

Bridge Type	Number of Bridges
Steel deck truss (309)	1
Steel girder and floor beam system and continuous steel girder and floor beam system (303 and 403)	6
Steel stringer/multi-beam/girder and continuous steel stringer/multi-beam/girder (302 and 402)	119
Steel truss (310 and 410)	86
Wood/timber stringer/multi-beam/girder (702)	14
Total	302

* The number of bridges within a type may vary slightly from pre-field reports due to the reassignment of bridge type during field survey.

Field survey activities determined that 11 bridges were nonextant, replaced or in the process of replacement and therefore did not require further consideration.³

C. National Register evaluation

Post-field survey evaluation included:

- Review of field survey data and research for each bridge, including as-built plans and standard plans.
- Comparative analysis of bridges within subgroups, including construction date, location, integrity, and special features.
- Follow-up contacts with county highway departments for additional information.
- Application of National Register Criteria.

Following field survey and research, eligibility recommendations were made at an April 2007 meeting of NDOR, SHPO, FHWA, and select county representatives for the 1,405 bridges dating from 1947 to 1965.

³ The 11 bridges found to be nonextant, replaced or under replacement include C000807505, Boyd County; C001300505P, Cass County; S084 03381, Cedar County; S077 12541, Dodge County; U182503505R, Douglas County; C005213410, Keya Paha County; S075 03588, Nemaha County; S080 42966, Sarpy County; C008335510, Sioux County; C008901605, Washington County; and C008902110, Washington County.

The majority of bridges were evaluated and recommended eligible for state-level significance. It is difficult to assess post-1945 bridges within a national context due to limited data and studies from this period. Bridges carrying the Interstate Highway System have already been considered for National Register-eligibility under the provisions of the Historic Preservation Exemption for the Interstate Highway System and were not reevaluated as part of this study.⁴ The results of the application of the National Register Criteria and the eligibility determinations agreed upon by NDOR, SHPO, and FHWA are presented in the following sections.

⁴ The Historic Preservation Exemption for the Interstate Highway System is included in Section 6007 of SAFETEA-LU reauthorization legislation, effective on March 10, 2005. Bridges crossing over Interstate highways were not assessed as part of the Interstate Exemption process and are included in this study.