

## CONCLUSIONS

This synthesis identifies and describes current practices of highway agencies with regard to preserving their historic bridges and highlights practices that may be useful to others. As background, *NCHRP Synthesis 101: Historic Bridges—Criteria for Decision Making* was reviewed, current issues that impact historic bridges were identified from questionnaire responses, and relevant federal and state legislation was summarized. Patterns of historic bridge preservation were inferred from available data, preservation plans representing different approaches to the management of historic bridges described, and innovative approaches to resolving current issues discussed.

The conclusions that follow are drawn from the open literature, from published and unpublished reports of highway agencies, and from engineers and others in the cultural resources field who shared their knowledge and experience through responses to a mailed questionnaire and through personal communications.

With regard to the background information:

- *NCHRP Synthesis 101: Historic Bridges—Criteria for Decision Making*, published in 1983, dealt largely with increasing awareness in both the transportation and preservation communities of issues relating to the management of historic bridges, and with emerging strategies to address those issues. Those awareness needs have largely been satisfied during the intervening years.
- Most current issues can be grouped into one of six categories: financial, public awareness and interest, alternative uses, safety and liability, historic integrity, and historic significance. As broad categories of concern, these issues are not new but the focus within each changes with time.
- Most state highway agencies have completed an inventory of at least some of their historic bridges and there is broad consensus that these inventories have been a useful planning tool. They are estimated to have contributed to an increase in the number of U.S. bridges eligible for and listed in the National Register to more than 8,000.
- In terms of legislation, historic bridges have for the most part been given the same consideration as other cultural resources, primarily under Section 4(f)

of U.S. Department of Transportation Act, Section 106 of the National Historic Preservation Act and the National Environmental Protection Act, as well as under various omnibus preservation and environmental quality acts promulgated by the individual states. It was not until the Surface Transportation and Uniform Relocation Assistance Act of 1987 that historic bridges were specifically identified for any special consideration, and few states have passed laws that address historic bridges as a special category of cultural resource.

With regard to preservation patterns:

- Metal truss bridges are the most commonly inventoried structural form, accounting for about one-third of the total number. Among those inventoried, about one-half are eligible for or listed in the National Register.
- Preservation interest, as measured by the proportion of each structural form determined to be NR-eligible or listed, is greatest for those forms with the greatest visual impact by virtue of their size and structural complexity (i.e., long-span and movable bridges) and least for forms that are smaller and structurally simpler (i.e., beam, stringer, and girder bridges).
- There is a strong positive correlation between preservation interest, as defined above, and preservation success, defined by the proportion of NR-eligible and listed bridges actually preserved once they are included in a rehabilitation or replacement project. This relationship is taken as evidence of an underlying consistency between what is valued and what is preserved.
- About one of every three NR-eligible or listed bridges fails to be preserved once it is included in a replacement or rehabilitation project. This suggests that closer attention during the National Register selection process to the condition of candidate bridges, to their location, and to other factors that affect preservation could reduce staff time spent on processing NR nominations, and on complying with Section 4(f) and Section 106 requirements for structures that have little ultimate chance of being preserved.

With respect to policies and practices:

Because the procedures for managing historic bridges are left to the states, there is wide variation in the approaches taken. Ten state highway agencies were identified as having completed formal preservation plans; another seven are developing such plans. Several different developmental approaches were identified: 1) Plans that address only bridges but that include all structural forms within the same planning document. Examples include those of the Rhode Island and Connecticut departments of transportation. 2) Plans that address only bridges but that proceed incrementally, completing one structural form at a time. Examples include those of the Wisconsin Department of Transportation and the Vermont Agency of Transportation. 3) Plans that evolve from a broader concern for protecting historic and/or scenic roads, and roadscapes, or segments thereof, in which bridges are considered as only one of a number of contributing elements. Examples include those of the Montana and Oregon departments of transportation and the Vermont Agency of Transportation.

- The Vermont state legislature has acted to give historic bridges a status and level of protection that exceeds that of any other state including, among others, the following provisions: 1) a policy of favoring rehabilitation over replacement for bridges on local systems; 2) modification of the traditional allocation model for federal, state, and local participation from 80/10/10 to 80/15/5; 3) authorization for VAOT to pursue exceptions to national geometric design standards for bridges on the National Highway System where site conditions, environmental factors, or engineering factors so dictate; 4) instructions to VAOT to develop state geometric design standards for bridges not on the National Highway System, and 5) guidelines for protecting the historic integrity of bridges that are rehabilitated.
- Efforts by state legislatures to provide financial incentives to preserve historic bridges are limited mostly to subsidies for covered timber bridges. The one exception found was the Vermont Agency of Transportation which, as noted above, has altered the federal/state/local allocation model to reduce the local share by 50 percent.
- The level of volunteer public participation in raising funds for preserving historic bridges is hard to assess. Known examples are typically associated with prominent bridges in urban or community settings.
- Historic bridge marketing programs are rated by most state highway agencies as having been less than “moderately successful.” Of the few rated more than “moderately successful,” many are associated with aggressive proactive educational and promotional programs aimed at increasing awareness of the importance of historic bridges and the opportunities for alternative use.
- Several state highway agencies have prepared design guidelines or standards that can be used to develop rehabilitation designs that include exceptions to AASHTO guidelines for historic bridges that are not on the national or state highway systems.

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**ACRONYMS**

AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
DOT	Department of Transportation
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
HAER	Historic American Engineering Record
HBRRP	Highway Bridge Replacement and Rehabilitation Program
ISTEA	Intermodal Surface Transportation Efficiency Act
MTD	Montana Department of Transportation
NEPA	National Environmental Policy Act of 1969
NCHRP	National Cooperative Highway Research Program
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	Nation Register of Historic Places
NTHP	National Trust for Historic Preservation
ODOT	Oregon Department of Transportation
PA	Programmatic Agreement
SHPO	State Historic Preservation Officer
TxDOT	Texas Department of Transportation
USFS	United States Forest Service
VAOT	Vermont Agency of Transportation
VDHP	Vermont Department of Historic Preservation
WisDOT	Wisconsin Department of Transportation