

WHAT IS AN HISTORIC BRIDGE, AND WHEN SHOULD IT BE PRESERVED?

John L. Carr
Chief of Environmental Review
Division of Historic Preservation and Archaeology
Indiana Department of Natural Resources

In this discussion, we shall consider briefly the role of the Indiana State Historic Preservation Officer (“Indiana SHPO”) and his staff at the Department of Natural Resources, Division of Historic Preservation and Archaeology (“Indiana SHPO staff”) and then go on to explore what constitutes an “historic” bridge for the purposes of the review conducted by the Indiana SHPO and staff and how the Indiana SHPO and staff decide when a particular historic bridge should be preserved.

I. Why are Indiana SHPO and staff involved in local bridge replacement projects?

In a nutshell, the answer is that either federal funds or a federal permit are being applied for. The emphasis on here is on *federal*. By state law, the director of the Department of Natural Resources is designated the Indiana SHPO. The Division of Historic Preservation and Archaeology, which serves as the staff of the Indiana SHPO in the day to day review of proposed projects, is a state agency, but we are carrying out a federal mandate. Thus, while the Indiana SHPO staff is part of state government and is intended to reflect the interests of the state and its people, we also have a federal mission where federal funds, permits, or licenses are involved. That federal mission includes assisting and encouraging federal agencies and their applicants to take into account the effects of their projects on historic properties and consulting with federal agencies and their applicants to find reasonable ways to avoid, reduce, or mitigate those affects that are adverse to an historic property. This review process is required by Section 106 of the National Historic Preservation Act of 1966 (“Section 106”; codified at 16 U.S.C. § 470f), and the regulations that implement Section 106, which are found at 36 C.F.R. Part 800.

Although it is not the principle focus of this discussion, please be aware that there is a state historic preservation review process that comes into play less frequently than Section 106. In the case of historic properties other than those owned or leased by the State of Indiana, the state review applies if state funding will be used to alter, demolish, or remove historic site or historic structure that is listed in either the National Register of Historic Places (“National Register”) or the similar Indiana Register of Historic Sites and Structures (“Indiana Register”). The legal authority for that review is found at Indiana Code § 14-21-1-18.

The Section 106 process is a string that is attached to the expenditure of federal funds or to the issuance of a federal license or permit. Even though a bridge that is proposed for replacement is the property of the county, if the county proposes to use federal funds in the replacement project, the SHPO has a seat at the table in the required review of (1) whether the bridge is historic; (2) if the bridge is historic, whether the effect on the bridge will be adverse; and (3) whether anything can

feasibly be done to avoid adversely affecting the historic bridge. Other issues also may be involved, such as whether the replacement project will affect significant archaeological sites. In theory, the principal parties to the review are the federal agency that is proposing to fund, license, or permit the project and the SHPO of the state where the project would take place. As a practical matter, however, at least in Indiana the Federal Highway Administration looks to its applicant (e.g., the county or state government) to handle most steps of the review process with the Indiana SHPO, even before the applicant has submitted its request for funding. The Section 106 review process ultimately is overseen by another federal agency, the Advisory Council on Historic Preservation (“Council”), which has delegated to the SHPO in each state most of the responsibility for working with the federal agencies that provide funds, licenses, or permits. As the name of the Council indicates, the process is theoretically advisory, in contrast to a process that results in the issuance or denial of a permit. However, the federal agency can be held legally liable for failure to follow and complete the review process. Consequently, most federal agencies, including the Federal Highway Administration, take the requirements of Section 106 seriously.

II. What is an “historic” bridge for the purposes of Indiana SHPO staff review?

The term “historic” can mean different things to different people. To some, it is anything that is old and venerable or something that has sentimental value. The meaning of “historic” as used in the National Historic Preservation Act and in the Council’s regulations is more specific, however. It refers to a property that is either listed in or eligible for listing in the National Register. Assuming a given property is not already listed, what makes it eligible? First, it must be a building, structure, object, site, or district. Consequently, books or antique furniture do not qualify. Second, the property must have significance. There are four broad areas of significance: association with an important event or events in history; association with a person or persons who were important in history; importance relating to the design or construction of the property; and importance derived from the information about human history that can be gleaned from the property, which is often the case with an archaeological site. The property’s significance can be on the national level, the state level, or the local level. That significance may have been acquired when the property was built or at some time since then. Third, a property usually must be at least 50 years old. Not everything that is 50 years old is eligible, however. By the same token, a property occasionally will have such exceptional significance that it will be considered eligible for the National Register even though it is only 30 or 40 years of age. Fourth, the property must have integrity, which means that it is still able to convey its significance.

Because there are only 92 historic, wooden covered bridges left in Indiana, there is a general consensus among the historic preservation community that, unless a nineteenth century or early twentieth century covered bridge has been radically altered, it would be eligible for inclusion in the National Register. The collapse on February 27, 1999, of one of the two spans of the unique, 130-year-old, Post truss-style Bell’s Ford Bridge in Jackson County underscored the urgency of finding ways of preserving historic covered bridges, especially those that have not recently been repaired or rehabilitated. Thankfully, the Jackson County Commissioners reportedly agreed to have the remains of the collapsed span removed from the East Fork of the White River (which was accomplished on March 3, 1999), marked, and stored pending future efforts to reconstruct that span. The Historic

Landmarks Foundation of Indiana, like the Indiana SHPO staff, is deeply concerned about the dwindling numbers of not only historic covered bridges but also early metal and concrete bridges in the state. That private, not-for-profit organization has been working with local preservationists in Jackson County to find ways to preserve the remains of the fallen span and to explore the reconstruction option, just as it has been working actively with local groups elsewhere in the state to identify preservation options.

Bridges obviously are different in both design and function from houses, commercial buildings, monuments, and most other kinds of buildings and structures that the Indiana SHPO staff is called upon to review. Accordingly, they present a particular challenge in the evaluation of their significance. To aid the Indiana SHPO and staff in making that evaluation, a number of surveys of particular types of older bridges have been conducted, largely by James L. Cooper, Ph.D., Professor Emeritus of History at DePauw University in Greencastle. Most of the surveys were evaluated by a committee with representatives of both the highway and preservation communities. The first publication of the results of those surveys that was made available to the general public was embodied in Dr. Cooper's 1987 book, Iron Monuments to Distant Posterity: Indiana's Metal Bridges, 1870--1930. He followed that in 1997 with Artistry and Ingenuity in Artificial Stone: Indiana's Concrete Bridges, 1900--1942. Those concrete bridges in Artistry and Ingenuity that are rated "NRC" (for "National Register Candidate") are considered by the Indiana SHPO staff to be eligible for the National Register and the Indiana Register. Iron Monuments also assigns ratings to bridges, but so many have been replaced since the book's publication that one cannot assume that a metal bridge that is not rated "NRC" is, therefore, not eligible for listing in the National and Indiana registers. Accordingly, the Indiana SHPO staff has obtained federal Intermodal Surface Transportation Efficiency Act funds through the Indiana Department of Transportation ("INDOT") to update the survey and has contracted with Dr. Cooper to conduct the necessary research and evaluation of the remaining metal bridges.

Thus, not every old bridge is historic for the purposes of the National Historic Preservation Act. That does not mean that a bridge that is not "historic" for Section 106 purposes cannot or should not be preserved. It simply means that it may not be eligible for the National Register or for the protection afforded by Section 106 in a federally funded, licensed, or permitted project.

III. How do the Indiana SHPO and staff decide when an historic bridge should be preserved?

Contrary to the impression the reader may have about the Indiana SHPO staff, we do not try to persuade counties or INDOT to save every old bridge--and we have in the past agreed, and from time to time still do agree that even some historic bridges cannot and should not be saved. Since October of 1987, when the Indiana SHPO staff developed an electronic database for the projects we review under Section 106, the Indiana SHPO has entered into memoranda of agreement to allow about 40 historic metal and concrete bridges to be replaced--and usually to be demolished, unless someone comes along who is willing and able to move them. What we have found in the last ten or so years, however, is that we have agreed to the replacement and demolition of a lot of historic bridges and that, in some cases, we probably have given up too easily on trying to persuade the counties and INDOT and their consultants to take a *serious* look at rehabilitating or bypassing

historic bridges instead of replacing and removing them, usually by demolition. Similarly, until the last two or three years, the Indiana SHPO staff also relied largely on the valuable, but outdated, ratings of historic metal bridges in Iron Monuments, thus relegating a number of lower rated metal bridges to the “non-historic” category.

I would like to be able to say that there is a formula one into which one can plug information and produce a definitive answer on whether or not an historic bridge should be saved. That would make the work of the Indiana SHPO staff easier, and it would give engineers and state and county officials a measure of certainty when they plan bridge projects. Unfortunately, there is no such formula, and I do not foresee that there ever will be. Historical or technological significance is an intangible value: Neither a dollar amount nor any other mathematical value can be placed on it. No doubt that can be frustrating to public officials who must monitor tax revenues and budgets and to engineers and planners who must ensure that roads and bridges will be safe, efficient, and economically feasible. But, then, history, aesthetics, and quality of life are values that are rarely amenable to being assigned numerical values. There are some places where numerical values can be assigned, such as in the committee evaluation of original survey of metal bridges that resulted in Dr. Cooper’s first bridge book, Iron Monuments, and his current survey update work. In such cases, in order to roughly estimate the relative significance of older bridges, numerical values are assigned to different aspects of a bridge’s historical background, rarity, and condition. For the most part, however, it is difficult to reduce the importance of such things to numbers. When one thinks about it, that is not so unusual. Most of Indiana’s 92 counties are still using a courthouse that is over 50 years old, and some of them are well over 100 years in age. I would guess that most residents of those counties are pleased that those buildings still stand and are useful to the community. Yet, in some cases, it may be true that newer, more spacious buildings could be constructed that would in some respects be more efficient than the historic buildings they would replace. Why, then, do we keep such relics of the past? I would submit that, even more significantly than the cost of replacing historic county courthouses, we keep them because their age, their history, and their ability to remind us and educate us about the past--our past--are important to us. Often we assign similar, intangible value to our homes, our neighborhoods, our churches, and our schools. While a given bridge may not be as important to a community as its courthouse, our historic bridges, both individually and collectively, can educate us about the past, about the achievements of those who have gone before us, and about our own experiences.

We cannot always preserve our courthouses and other public buildings. Sometimes they are severely damaged by fire or storm or otherwise become structurally unsound. Other times we retain them for governmental or civic uses, even though we have outgrown them and need more or different kinds of office or meeting space. Similarly, we cannot always keep our historic bridges, even when we would like to in our hearts. We can keep some of them, however, and if we place any value on being able to enjoy and learn from metal truss bridges and early concrete bridges or in giving future generations an opportunity to enjoy and learn from them, we had better start looking more seriously at how we can go about preserving them. We are running out of time to start about it. Dr. Cooper has estimated that at least half of the older metal bridges he identified in Iron Monuments in 1987 are no more. At the rate at which pre-Depression Era metal truss bridges have been disappearing from the landscape, they theoretically could become extinct within a few years. I do not believe that will happen, because some counties already have begun to recognize the importance to

the community of metal truss bridges and have take steps to preserve some.

The fact that some of these bridges have survived until 1999, however, does not necessarily mean that they are the fittest, that is, the bridges that are in the best condition or those that are the best examples of a particular bridge type or technology. That is problematic for INDOT, for the counties, for engineering consultants, and for the Indiana SHPO staff, because it can make it harder to find continued or new uses for the remaining bridges, even if they are the last or among the few remaining examples in the state of a bridge type or of the work of a particular designer or fabricator.

I do not mean to say by all this that the process through which the Indiana SHPO staff decides which bridges are worth trying to save is arbitrary or undefinable. I only mean to caution the reader that it is a process that is still under development and is not, and probably will never be, reduceable to a precise formula. I can, however, give some indication of the factors that we consider. The relative weight given those factors will be a case-by case determination.

Contrary to what some may believe, we on the staff of the Indiana SHPO do take into consideration the factors that are cited to us by INDOT, the counties, and their consultants. Among those factors are the physical condition of the bridge, the traffic volume, the safety of the bridge and the road that crosses it, and the economics and technical feasibility of rehabilitation as compared to replacement on the same or similar alignment or to bypassing. We view those factors, however, from a perspective that is biased toward preservation. That probably comes as no surprise to the reader, but, as I suggested in the first section of this discussion, it is a bias that Congress and the Council intended for us to have. Consequently, we may come across as being skeptical of the need to remove an historic bridge, but we see that as part of our job. Our asking pointed and detailed questions about the need to remove an historic bridge and the feasibility of retaining it in some capacity has become increasingly important as the metal truss and oldest concrete bridges have continued to disappear.

In past years, we did not ask so many questions or think so long about the prospects for preserving an historic bridge before agreeing to its removal and replacement through a memorandum of agreement. That more accommodating, "review-lite" approach, regrettably, has helped to put the state in the position it is in today, where the numbers of historic bridges are rapidly dwindling, and some of the best examples have already been destroyed.

As was noted above, the condition of an historic county bridge is often cited to the Indiana SHPO staff as a reason to replace the bridge. However, some deterioration and a relatively low sufficiency rating does not necessarily mean that the bridge cannot be put into a useful condition again. A metal truss bridge, for example, may lose 50% of the maximum possible 100% rating for being only one lane wide. If it has other deficiencies, such as inadequate approaches (by modern standards) or a deteriorated deck, it will lose more points, and its rating, now somewhere below 50%, will make it appear very deficient at first blush. However, on a lightly-traveled road, a one-lane bridge might not be a serious impediment to travel or a serious safety hazard. Sharp curves and other deficiencies of approaches sometimes can be improved. Worn-out decks can be replaced. Consequently, if the condition or sufficiency of an historic bridge is going to be the rationale for replacing it, then it would be advisable to be as specific as possible, when writing to the Indiana SHPO staff, in explaining why the historic bridge cannot feasibly be rehabilitated for continued use. Include estimated rehabilitation costs and a comparison with replacement costs, breaking down the

figures as precisely as available information will allow.

Design exceptions in some cases can be obtained from INDOT where the bridge is considered to be historic. Not every design criterion must be satisfied in every case. It may be necessary to consult with the appropriate staff at INDOT to determine where there may be some flexibility in the criteria for a specific bridge.

A little innovation may be necessary in order to make an historic bridge safer for modern uses. One Indiana engineering consultant devised a modern railing with a fairly slender profile to be attached to the roadway sides of the vertical members of a metal truss bridge and a method of relocating and reattaching most of the historic, latticed railings to the exterior of the modern railings. The result was that the more ornate, latticed railings were retained on the historic bridge, while the modern railing made the bridge considerably safer for modern vehicular use than it was before the rehabilitation began.

A frequently expressed concern relates to the load carrying capacity of an historic bridge. In some instances, it has been sufficient to add stringers or floor beams to increase the capacity. Because stringers and floor beams are replaced from time to time, they may not be original or even particularly old. In that case replacing them, when shown to be necessary, may be an acceptable preservation treatment. Also, the circumstances of the particular bridge should be clearly explained to the Indiana SHPO staff. For example, is it clearly demonstrable that school buses or emergency or other heavy vehicles must use the bridge, or are there adequate alternative routes for such buses or other large vehicles? Perhaps vehicles and other large vehicles already are making satisfactory use of alternative routes. It thus may not be necessary to raise the load carrying capacity to that which would be expected of a new bridge.

Sometimes, due to horizontal alignment, load carrying capacity, or other overriding considerations, it may be advisable to bypass an historic bridge, leaving it open only for light vehicular traffic or even solely for pedestrian use. Although the ideal way to ensure a bridge's long-term preservation is probably to make it as useful as possible by enabling it to continue to carry vehicular traffic, a bypassed historic bridge can still serve a useful function as a tourist attraction, a local landmark, a hiking or biking trail structure, a fishing pier, or simply a place to seek respite from the hustle and bustle of modern life and to reflect on our heritage.

A few Indiana counties have taken advantage of the opportunity that ISTEA provided to obtain federal funding to rehabilitate one or more of their historic bridges. Reportedly, ISTEA's successor program, the Transportation Equity Act for the 21st Century, dubbed "TEA-21," will provide similar opportunities over the next few years. The Indiana SHPO staff encourages counties to consider tapping the valuable resource that TEA-21 will provide, either to keep historic bridges in highway service or to convert them to pedestrian or other uses.

I cannot address here all possible factors that must be considered or alternative solutions that may need to be explored. The review of historic bridge replacement projects is very much a case-by-case matter, anyway. As you can see, the Indiana SHPO staff is not as knowledgeable about bridge design, construction, and rehabilitation matters as many of the readers will be. We are trying to learn

more about those fields, however, in an effort to enable ourselves to understand both sides of any issue and to find areas of common interest and agreement, for the purpose of identifying those historic bridges that come before us in Section 106 reviews that are good candidates for preservation. We ask that those readers with whom we come into contact in the course of Section 106 reviews try to understand our point of view, as well.

BIBLIOGRAPHY

Books

Cooper, James L. Artistry and Ingenuity in Artificial Stone: Indiana's Concrete Bridges, 1900--1942. Greencastle, Indiana: James L. Cooper, 1997.

Cooper, James L. Iron Monuments to Distant Posterity: Indiana's Metal Bridges, 1870--1930. Greencastle, Indiana: DePauw University, et al., 1987.

TEA-21 User's Guide: Making the Most of the New Transportation Bill. Washington, D.C.: Surface Transportation Policy Project, 1998.

Periodicals

Higgins, Will and Tom Chiat. "Bridge enthusiasts are eager to save damaged structure." Indianapolis News. Tuesday, March 2, 1999, page B-2.

Saunders, Leslie. "Remnants of covered bridge to be marked, removed awaiting decision on rebuilding." The Republic, Columbus, Indiana, Wednesday, March 3, 1999, page A8.

The Republic, Columbus, Indiana, Saturday, March 6, 1999, page A6, (Photograph with caption.)

Statutes

Indiana Code § 14-21-1-18.

Section 106 of the National Historic Preservation Act of 1966, as amended. 16 U.S.C. § 470f (1994).

Regulations

Code of Federal Regulations, Title 36, Part 800 (often cited as 36 C.F.R. Part 800), "Protection of Historic Properties."

Government Publications

National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. Washington, D.C.: U.S. Department of the Interior, National Park Service, [n.d.].

Section 106, Step-By-Step. Washington, D.C.: Advisory Council on Historic Preservation, [n.d.].