

FINAL REPORT

HISTORIC BRIDGES: BRIDGING THE GAP BETWEEN SAFETY CONCERNS AND HISTORIC PRESERVATION



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<div>Abstract</div> <p>Historic preservation legislation and grassroots efforts promoting preservation have grown over the years both in scope and in the amount of resources pledged to the cause. Among the beneficiaries of these endeavors are historic bridges, which once lingered in the shadow of buildings and historic districts as protected properties. The push to preserve historic bridges has evolved into a strong agenda, bolstered by legislation mandating the mitigation of harm to bridges by highway departments. This report initially describes the background of the rise of bridges as preservation targets and the legislation supporting preservation efforts. The two laws most important in the preservation of historic bridges are the National Historic Preservation Act (NHPA) and the Department of Transportation Act (DOT Act), both introduced in 1966. NHPA Section 106 imposes demanding procedural requirements on highway departments pursuing projects within the NHPA's scope. The provision commonly known as Section 4(f) of the DOT Act imposes substantive restrictions, preventing federal approval for projects that use historic properties unless it has been demonstrated that there is no feasible and prudent alternative to the use and that harm to the historic properties is being minimized.</p> <p>The report next details the options available for dealing with historic bridges when they are deemed inadequate to serve the needs of the traveling public. In such situations historic bridges may be rehabilitated for continued use or they may be replaced. Rehabilitation is limited by the structural realities of old and deteriorated bridges. Replacement may result in the destruction of the historic structure, but often this need not be the case. Through adaptive reuse the original owner, or a new public or private owner, employs the old bridge at its site or at a new location for a new purpose. The possibilities for adaptive reuse range from carrying pedestrians and bikers on a trail to hosting a restaurant. Adaptive reuse's appeal is hindered by the potentially prohibitive costs associated with responsibility for an old bridge. This section is followed by a case study that provides a concrete example of how the legislative regime and response options relating to inadequate historic bridges can have significant effects in Virginia. The procedural requirements of Section 106 implicated by a Virginia Department of Transportation (VDOT) project to replace the historic Route 1 bridges over the North Anna River held the project in check for more than one year. The example shows that despite the apparent lack of substantive bite, Section 106's procedural requirements can have substantial effects. In concluding, the authors argue that the focus of federal legislation on historic preservation overlooks the issue of public safety, placing the importance of the continued existence of old bridges above the safe travel of the public. Accordingly, the authors recommend that this legislation be amended to address the priority of public safety, and, in particular, to modify Section 4(f) to reduce its burden on highway departments when the bridge in question is unsafe to procedural requirements of the type imposed by Section 106.</p>				

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**(The opinions, findings, and conclusions expressed in this
report are those of the authors and not necessarily those of
the sponsoring agencies.)**

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ABSTRACT

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INTRODUCTION

Historic preservation legislation and grassroots efforts promoting preservation have grown over the years both in scope and in the amount of resources pledged to the cause. Among the beneficiaries of these endeavors are historic bridges, which once lingered in the shadow of buildings and historic districts as protected properties. The push to preserve historic bridges has evolved into a strong agenda, bolstered by legislation mandating the mitigation of harm to bridges by highway departments.

This report presents the background of the rise of bridges as preservation targets and the legislation supporting preservation efforts, and then details the options available for dealing with historic bridges when they are deemed inadequate to serve the needs of the traveling public. This section is followed by a case study that provides a concrete example of how the legislative regime and response options relating to inadequate historic bridges can have significant effects in Virginia. In concluding, it is argued that the focus of legislation on historic preservation overlooks the issue of public safety, placing the importance of the continued existence of old bridges above the safe travel of the public. Accordingly, the recommendation is made that this legislation be amended to address the priority of public safety.

LEGISLATION PROTECTING HISTORIC BRIDGES

Throughout this century, the concept of historic preservation has occupied an increasingly greater role in the nation's conscience. What began as a dominantly private endeavor to preserve and maintain properties of social and political historic significance has mushroomed into a broad national policy aimed at preserving many categories of historic properties, often with the aid of

federal funding. The strength of the historic preservation movement can be seen not only in the magnificent physical manifestations of preservation activities, such as Monticello and Colonial Williamsburg, but also in the volumes of federal legislation and regulations that address historic preservation. Over the past quarter century, historic bridges have received increasing attention from both citizen preservation efforts and the legislation addressing historic preservation.

Evolution of Consideration of Bridges as Worthy Preservation Candidates

Some of the best-known objects of early historic preservation efforts are the homes of the nation's early leaders. Protecting the survival of Thomas Jefferson's Monticello and George Washington's Mount Vernon served many purposes, key among them the commemoration of great Americans and the education of later generations by what these Americans left behind. Even when historic preservation became a more national project, the great bulk of properties that received attention were buildings and sites that marked great events in the nation's history.¹ This is largely due to the efforts of the Historic American Building Survey, which used its resources to document the nation's architectural heritage through a massive inventory begun in the 1930s.²

In 1969, the Historic American Engineering Record (HAER) was formed to extend similar considerations to the nation's technological heritage.³ In cooperation with the American Society of Civil Engineers and the Library of Congress, the HAER inventoried and recorded important engineering and industrial structures, significant among them the nation's old bridges.⁴ The HAER, along with similar programs initiated by the American Concrete Institute and the American Society of Mechanical Engineers, helped to catapult historic bridges onto the growing agenda of historic preservation.⁵

¹ See *infra* notes 10-11.

² Howard Newlon, Virginia Highway & Transportation Research Council, *Criteria for Preservation and Adaptive Use of Historic Highway Structures* 2 (1978).

³ *Id.*

⁴ William P. Chamberlin, Transportation Research Board, *Historic Bridges -- Criteria for Decision Making* 5 (1983).

⁵ Newlon, *supra* note 2, at 2; Chamberlin, *supra* note 4, at 10.

In comparison to historic homes or statehouses, bridges may seem unlikely candidates for the often extraordinary resources that are spent in attempts to preserve historic properties. After all, bridges are utilitarian objects that would seem ripe for destruction once they can no longer carry out their function. Addressing the significance of metal truss bridges (one type among the many forms of old bridges), one commentator explained the socio-historical and environmental reasons to preserve old bridges:

[Metal truss bridges] represent some of the finest achievements of American engineering and construction technology. The metal truss bridge is uniquely indigenous to America; no other country experimented with the truss concept as we did during the 19th century. With unlimited supplies of wood, coupled with the need to construct railroads and highways as quickly and as cheaply as possible, the timber truss was a national solution. Once the trucklines opened up the frontier, the people who moved westward built a network of primary and secondary roads to connect their farms with market towns and on to larger commercial centers. The solution to crossing thousands of streams and rivers was the prefabricated metal truss which evolved in the country from the wooden truss about the middle of the 19th century.

Presently, a significant number of these trusses remain. The more modest spans maintain a sense of scale with the rural landscape not duplicated in the concrete girders that replace them. Those located near towns and cities serve to slow traffic, and thus contribute to preserving the human scale and 19th century character of many historic towns and urban neighbourhoods.⁶

Sentiments such as these, strongly held by many localities, prompt grassroots efforts to preserve at-risk historic bridges.⁷ Thus, old bridges possess a stronghold of support from both professional organizations concerned with the technological heritage represented by the bridges and citizenry concerned with preserving the character of their community. These vocal lobbies support and gain support from relevant federal legislation.

⁶ Eric DeLony, *Bridge Replacement*, in 11593 (National Park Service, ed., 1977), *quoted in* Newlon, *supra* note 2, at 8 (Newlon's cite unclear).

⁷ See, e.g., Rajiv Chandrasekaran, *Virginia Officials May Preserve Hibbs Bridge*, Wash. Post, Oct. 20, 1994, at V1 (County residents fought the replacement of a 19th century bridge, complaining that a "mammoth structure would ruin the scenic and historic character of the area.").

Review of Major Federal Legislation Affecting Bridges

The rise of historic bridges as objects attracting preservation efforts cannot be attributed solely to the activities of engineering organizations and local groups. In fact, the United States Congress may have been the catalyst for the campaigns specifically aimed at bridges. At the very least, federal legislation heightens the public awareness of historic bridges by forcing the consideration of old bridges as potentially protected properties.

Highway departments must comply with a staggering body of federal legislation in their work. These rules and regulations traditionally have promoted safety for the traveling public;⁸ but, increasingly, legislators are directing highway agencies to consider the effect of their activities on historic concerns.

National Historic Preservation Act⁹

The National Historic Preservation Act (NHPA) was the first comprehensive federal historic preservation program. Before 1966, the federal government extended only limited protection, if any, to historic properties. The Antiquities Act of 1906¹⁰ gave protection to certain historic properties on lands owned or controlled by the United States. Under the Act, the President could designate properties of national historic significance as national monuments. Further, the President had the authority to reserve the land necessary for the proper care of these monuments and to promulgate regulations for the management of the sites.

⁸ For example, under § 109 of the Federal-Aid Highway Act, the Secretary of Transportation may issue an approval of a federal-aid highway project only if the project provides for a facility that will “adequately meet the existing and probable future traffic needs . . . in a manner conducive to safety.” 23 U.S.C. § 109(a) (Supp. 1995). The Highway Safety Act requires each state to have a federally approved highway safety program designed to reduce traffic accidents and deaths, injuries, and property damage resulting from traffic incidents. 23 U.S.C. § 402(a) (1990 & Supp. 1995).

⁹ 16 U.S.C. § 470 (1985 & Supp. 1995).

¹⁰ Ch. 3060, 34 Stat. 225 (1906) (codified as amended at 16 U.S.C. §§ 431-33 (1993)). The focus of historic preservation efforts on buildings and sites of great events in the nation’s history is apparent in the list of monuments designated pursuant to this Act. Representative sites include: the Ackia Battleground National Monument (Mississippi), the Aztec Ruins National Monument, the Death Valley National Monument, the Edison Laboratory National Monument, and the Statue of Liberty National Monument.

The Historic Sites Act of 1935¹¹ expanded on earlier preservation efforts by declaring a national policy to preserve national historic sites and designating the Secretary of the Interior to serve as the program's ambassador. The Act directed the Secretary to survey historic sites and acquire, restore, maintain, and manage those sites that were of national historical or archaeological significance. The actions taken pursuant to the Historic Sites Act led to the creation of the National Historic Landmarks Program, the predecessor to today's National Register of Historic Places.

These early programs focused on historic properties of *national* significance and served mainly as expressions of Congress' recognition of historic preservation as a desirable endeavor. However, these legislative actions did not do much to protect *private* properties or properties of *local* or *state* historical significance, nor did they restrain the destruction of historic sites by the federal or state governments.¹²

When Congress enacted the NHPA in 1966, it marked a new era in historic preservation. First, the NHPA removed national significance as the controlling criteria for federal recognition. Instead, state and local sites now could be considered.¹³ This widening of the scope of federal historic preservation expanded the existing register into the National Register of Historic Places¹⁴ and helped pave the way for the inclusion of a broader range of properties, such as bridges. Second, Section 106 of the NHPA extended greater protection to historic properties that might be affected by federal undertakings.¹⁵ Section 106 states:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any

¹¹ Historic Sites, Buildings and Antiquities Act, ch. 593, 49 Stat. 666 (1935) (codified as amended at 16 U.S.C. §§ 461-67 (1985 & Supp. 1995)). The list of sites designated under this Act suggests a broadening of the scope of historic preservation, although buildings and battlegrounds still stand out as the primary beneficiaries. Among the sites are: the Allegheny Portage Railroad National Historic Site, the Eleanor Roosevelt National Historic Site, and the Old Philadelphia Custom House National Historic Site.

¹² See H.R. Rep. No. 1916, 89th Cong., 2d Sess. (1966), *reprinted in* 1966 U.S.C.C.A.N. 3307, 3309.

¹³ See Pub. L. No. 89-665(d), 80 Stat. 915 (codified at 16 U.S.C. § 470(b)(7) (1985)).

¹⁴ See 36 C.F.R. § 65.5(f) (1994) (directing that properties designated as National Historic Landmarks are to be entered in the National Register; but not all properties that qualify for National Register eligibility will meet the National Historic Landmark criteria).

¹⁵ Pub. L. No. 89-665, tit. I, § 106, 80 Stat. 915 (1966). Although the original Section 106 has been slightly modified and recodified at 16 U.S.C. § 470(f) (Supp. 1995), the provision is still commonly referred to as "Section 106."

undertaking shall . . . take into account the effect of the undertaking on any [property] that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation . . . a reasonable opportunity to comment with regard to such undertaking.¹⁶

In short, any time a federal agency has jurisdiction over any “undertaking” that involves the use of federal funds or has the authority to license any undertaking, the agency head must consider the effect of the undertaking on historic properties and give the Advisory Council an opportunity to comment.

Congress originally offered little guidance for determining whether an “undertaking” exists.¹⁷ Currently, however, the statute and the NHPA regulations both present definitions that draw a clearer, yet broad, classification.¹⁸ The regulations, which were relied upon by courts and affected parties before the statute presented a clearer definition,¹⁹ define “undertaking” to mean

any project, activity, or program that can result in changes in the character or use of historic properties, if any such historic properties are located in the area of potential effect. The project, activity, or program must be under the direct or indirect jurisdiction of a Federal agency or licensed or assisted by a Federal agency.²⁰

The definition now provided by the statute itself states that an undertaking is “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal

¹⁶ 16 U.S.C. § 470(f). Originally, the review process under the NHPA covered only properties listed in the National Register. The process was extended to those properties that are eligible for, but not listed in, the National Register in the 1976 Amendments to the NHPA. Pub. L. No. 94-422, tit. II, § 201(3), 90 Stat. 1320 (1976).

¹⁷ Until recently, the NHPA defined “undertaking” merely to mean “any action as described in Section 470(f) of this title.” 16 U.S.C. § 470(w)(7) (1985).

¹⁸ See *North Oakland Voters Alliance v. City of Oakland*, No. C-92-0743 MHP, 1992 WL 367096, at *6 (N.D. Cal. 1992).

¹⁹ See, e.g., *Sugarloaf Citizens Ass’n v. Fed. Energy Regulatory Comm’n*, 959 F.2d 508, 515 (4th Cir. 1992).

²⁰ 36 C.F.R. § 800.2(o) (1994).

agency, including . . . (C) those requiring a Federal permit, license, or approval.”²¹ On their face, these definitions appear to conflict, in that the statute appears to rule out of Section 106’s scope those projects that are merely licensed by the federal government without federal funding. Because this interpretation would “deprive the references to licensing in Section 106 of any practical effect,” the District of Columbia Circuit Court of Appeals has found that the amendment was intended to expand, not confine, the definition of undertaking to include projects requiring a federal permit or federal approval even though they have no federal funding.²² Thus, any project that involves the use of any federal funds and/or requires federal licensing, permitting, or approval has the potential to trigger the requirements of Section 106.

The more demanding of Section 106’s procedural requirements come into play when the undertaking “adversely affects” a historic property, or when there is disagreement with the Advisory Council as to whether or not there is an adverse effect.²³ An undertaking is said to have an “effect” on an historic property when it may alter the property’s characteristics, such as the location, setting, or use.²⁴ The effect is “adverse” “when [it] may diminish the integrity of the property’s location, design, setting, materials . . . or association.”²⁵

If an agency has jurisdiction over an affected project, it must follow the Section 106 process, as set forth by the Advisory Council.²⁶ First, the agency must determine if the undertaking might affect any historic properties. If no historic properties exist, or if the undertaking will not affect any that do exist, the agency need do nothing further to comply with Section 106. Likewise, if an effect is found but is not considered adverse, no further action need be taken by the agency. If, however, an adverse effect is found, or if the Advisory Council challenges the agency’s prior finding of no adverse effect, the agency must consult with the State Historic Preservation Officer and the Advisory Council to come up with mitigating procedures to reduce or avoid the impact on the historic property.

²¹ 16 U.S.C. § 470(w)(7) (Supp. 1995).

²² *Sheridan Kalorama Historical Ass’n v. Christopher*, 49 F.3d 750, 755 (D.C. Cir. 1995).

²³ 36 C.F.R. § 800.5(d)(2), (e) (1994).

²⁴ 36 C.F.R. § 800.9(a) (1994).

²⁵ 36 C.F.R. § 800.9(b) (1994).

²⁶ The Advisory Council, an independent agency established by the NHPA, 16 U.S.C. § 470(i), is charged with the responsibility of promulgating regulations to interpret and direct the implementation of Section 106. 16 U.S.C. § 470(s). The process for Section 106 compliance is set forth at 36 C.F.R. §§ 800.3-800.9 (1994).

The procedural aspects of the NHPA are extensive and mandatory.²⁷ However, Section 106 “neither . . . forbid[s] the destruction of historic sites nor . . . command[s] their preservation.”²⁸ In effect, if the agency determines that mitigating procedures are undesirable, the agency may discontinue negotiations and proceed with the original plans.²⁹ No violation of the regulations occurs so long as the procedures have been followed.

Although some commentators attack Section 106 as a procedure with little bite,³⁰ Section 106 does have an effect on proposed actions that could affect environmental interests. The Fifth Circuit noted that despite Section 106’s lack of substantive requirements, the provision is not “a serpent without fangs as to federal planners bent on disregard of its mandate.”³¹ In fact, while Section 106 imposes no substantive requirements directly on the final action, it can affect it indirectly through impositions on interim action. The Fifth Circuit illustrated this likelihood of mitigation through pressure with the fact that a court can hold up an agency’s project (e.g., by withholding possession of land in a condemnation proceeding) until the agency has complied with Section 106.³² Thus, if a site has a champion who will monitor compliance and seek a court’s protection when necessary, Section 106 provides “a sword which he may use to seek judicial scrutiny of compliance with the congressional command that adverse impact upon historical features of the . . . land be mitigated.”³³

Recent amendments to the NHPA serve to increase the pressure on agency heads to mitigate effects by requiring the agency head to be personally involved in negotiations and to

²⁷ See, e.g., *WATCH v. Harris*, 603 F.2d 310, 326 (1979) (stating that “the mandate of NHPA . . . is quite broad”).

²⁸ *United States v. 162.2 Acres of Land*, 639 F.2d 299, 302 (5th Cir. Unit A Mar. 1981), *cert. denied*, 454 U.S. 828, 102 S.Ct. 120 (1981).

²⁹ See *Waterford Citizens’ Ass’n v. Reilly*, 970 F.2d 1287, 1290-91 (4th Cir. 1992).

³⁰ See Melissa A. MacGill, *Old Stuff is Good Stuff: Federal Agency Responsibilities Under Section 106 of the National Historic Preservation Act*, 7 Admin. L.J. Am.U. 697 (1994), for a strong argument for amending Section 106 to impose substantive requirements on federal agencies to protect environmental interests.

³¹ *162.2 Acres of Land*, 639 F.2d at 304.

³² *Id.* at 305.

³³ *Id.*

document the ultimate decisions associated with terminated negotiations.³⁴ Notwithstanding these involved procedural requirements, agencies need not implement projects that are least likely to cause adverse effects. But the NHPA can effectively lead to mitigation of harm to historic sites due to the impact and burden of the procedural requirements and the resulting agency accountability.

The destruction of an historic bridge eligible for or listed in the National Register, if part of a federally funded or approved project, certainly represents an adverse effect that triggers Section 106 obligations. A following section of this report will discuss the options available to highway departments for rehabilitating and reusing these historic bridges that can no longer safely meet the demands of today's traffic. It will be apparent that most, if not all, of these options also trigger Section 106 when they are federally funded or approved.

Department of Transportation Act of 1966³⁵

Enacted the same year as the NHPA, the Department of Transportation Act (DOT Act) placed more stringent requirements on federal transportation undertakings than did the NHPA. The Federal-Aid Highway Act of 1956³⁶ actually preceded the NHPA as the first significant federal legislation addressing preservation in highway programs. This Act authorized federal participation in the funding of archaeological and paleontological salvage in the federal-aid highway systems.³⁷ Similar to the legislation that preceded the NHPA, however, the Federal-Aid Highway Act of 1956 provided little protection to historic sites from destruction during federally-involved transportation projects. The DOT Act, espousing policy goals analogous to those of the NHPA, increased the protection of historic sites by conditioning federal funding and permitting of highway projects on increased consideration of historic properties.

³⁴ 16 U.S.C. § 470h-2(1) (Supp. 1995); *see generally Fowler Bill Enacted: Federal Preservation Law Strengthened*, Preservation L. Rep., Nov. 1992, at 4.

³⁵ Pub. L. No. 89-670, 80 Stat. 931 (1966) (repealed by Pub. L. No. 97-449, § 7(b), 96 Stat. 2444 (1983), and recodified in revised 49 U.S.C. (1994)).

³⁶ Ch. 462, Pub. L. No. 627 (1956) (codified as amended at 23 U.S.C. § 101 *et seq.* (1990 & Supp. 1995)).

³⁷ Ch. 462, Pub. L. No. 627, tit. I, § 120 (1956) (codified as amended at 23 U.S.C. § 305 (1990)). The federal-aid highway system, begun in 1916 as a program to promote highways connecting the nation's metropolitan areas and serving the national defense, is a system of highways constructed and maintained with the aid of federal funds. S. Rep. No. 1407, 85th Cong., 2d Sess. (1958), *reprinted in* 1958 U.S.C.C.A.N. 2367, 2368.

In provisions commonly referred to as Section 4(f),³⁸ the statute states, in pertinent part:

The Secretary [of Transportation] may approve a transportation program or project requiring the use of . . . land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the . . . site) only if--

(1) there is no prudent and feasible alternative to using that land;
and

(2) the program or project includes all possible planning to minimize harm to the . . . historic site resulting from the use.³⁹

Section 4(f), while stopping short of “forbidding destruction” or “commanding preservation,” imposes more stringent and substantive requirements than does the NHPA. If a transportation project uses an historic property, it may receive federal approval if no feasible and prudent alternative exists. Unlike the non-binding mitigation negotiations under Section 106, Section 4(f) *requires* a highway agency to use all possible planning to mitigate harm to historic properties.

The “feasible and prudent” provision of 4(f) was interpreted by the Supreme Court in *Citizens to Preserve Overton Park v. Volpe*.⁴⁰ The Court noted that “feasibility” is a characteristic that leaves little room for administrative discretion.⁴¹ This exception to 4(f) applies only if it would not be feasible to complete the project in an alternative manner (in *Overton Park*, to build the road along a route that circumvented the park at issue).⁴² The requirement that no “prudent” alternative exist does not grant the Secretary much more

³⁸ Formerly at 49 U.S.C. § 1653(f) (1976), this provision has been slightly revised and recodified at 49 U.S.C. § 303(c) (1994). However, it retains its original purpose and is still commonly referred to as Section 4(f). *See* DOT Act of 1983, Pub. L. No. 97-449, 96 Stat. 2413 (1982) (explaining that recodification effects no substantive change of the law).

³⁹ 49 U.S.C. § 303(c).

⁴⁰ 401 U.S. 402 (1971); *see generally* *Highways and the Environment: Resource Protection and the Federal Highway Program*, Legal Research Digest, Oct. 1994, at 6-7 [hereinafter *Highways and the Environment*].

⁴¹ *Overton Park* at 411; *see also* *Highways and the Environment*, *supra* note 40, at 6.

⁴² *Overton Park* at 411; *see also* *Highways and the Environment*, *supra* note 40, at 6.

discretion than the feasibility requirement.⁴³ The Court imposed a broad construction of this term, requiring the Secretary to support a finding that an alternative is imprudent with strong evidence.⁴⁴ Although cost and community disruption are valid considerations, an alternative is not imprudent unless it involves “unique problems” resulting from “truly unusual factors” where they reach “extraordinary magnitude.”⁴⁵

Following the *Overton Park* decision, courts applied the Court’s “unique problems” standard strictly, overruling the Secretary’s rejections of alternatives even when the financial costs and community disruption would seemingly be prohibitive.⁴⁶ More recent cases have indicated a softening of this restriction, but the statute still imposes a huge burden on the Secretary to support the rejection of an alternative.⁴⁷

Not only are the requirements of Section 4(f) relatively stringent, they reach a broader range of properties than does Section 106. Section 4(f), rather than limiting its application to properties listed in or eligible for the National Register, reaches properties that are not eligible for the National Register but are deemed important by local authorities.⁴⁸ The effect of this is that historic bridges, even those that do not meet the criteria for the National Register, may receive even greater protection than properties protected by the NHPA.

Federal-Aid Highway Act⁴⁹

One year following the enactment of the NHPA, the Point Pleasant Bridge (commonly known as the “Silver Bridge”) collapsed into the Ohio River, killing 46 people.

⁴³ *Overton Park* at 411.

⁴⁴ *Id.* at 412-13.

⁴⁵ *Id.*; *Highways and the Environment*, *supra* note 40, at 6.

⁴⁶ *Highways and the Environment*, *supra* note 40, at 6 (citing cases in which alternatives cost tens of millions of dollars more and involved the movement of hundreds of families and businesses).

⁴⁷ *Id.*

⁴⁸ 49 U.S.C. § 303(c).

⁴⁹ 23 U.S.C. §§ 101-60 (1990 & Supp. 1995).

The Silver Bridge was 40 years old⁵⁰ and collapsed when a cracked suspension joint gave out due to traffic vibrations.⁵¹ Partly in response to this tragedy,⁵² the Federal-Aid Highway Act of 1968 established the National Bridge Inspection Program.⁵³ This program aspires to increase the activity of states in identifying and remedying hazards presented by bridges, old ones in particular. In order to implement this program, the Secretary of Transportation is required to establish standards for inspecting bridges.⁵⁴ These standards set forth safety inspection methods, minimum time lapse between inspections, and qualifications for those conducting the inspections.⁵⁵

This federal mandate on safety was supplemented by the Bridge Replacement Program established by the Federal-Aid Highway Act of 1970.⁵⁶ This program promoted the replacement of unsafe bridges by the states. Through federal-state efforts to inspect and classify federal-aid bridges, states were to evaluate the sufficiency of bridges to remain in use in their present condition and determine which bridges were priority candidates for federally-funded replacement.

Highway agencies received conflicting messages from the federal government as a result of this legislation.⁵⁷ On the one hand, the NHPA and Section 4(f) directed highway agencies to consider the effect of their projects on historic properties and, in some cases, to take very costly measures to avoid harm to these properties. On the other hand, the Bridge

⁵⁰ For clarity it is worth noting here that as a 40 year old structure the Silver Bridge would have been unlikely to qualify for the National Register, which generally requires an age of at least 50 years for inclusion. See 36 C.F.R. § 60.4.

⁵¹ Terry Wallace, *Collapse of Bridge Over Ohio River Taught Sad Lesson*, Arizona Republic, Dec. 15, 1992, at B6.

⁵² See S. Rep. No. 1340, 90th Cong., 2d Sess. (1968), reprinted in 1968 U.S.C.C.A.N. 3482, 3494-96.

⁵³ Federal-Aid Highways Act of 1968, Pub. L. No. 90-495, § 26, 82 Stat. 815 (1968) (originally codified at 23 U.S.C. § 116, amended and recodified by Surface Transportation and Uniform Relocation Assistance Act of 1987, Pub. L. No. 100-17, § 125, 101 Stat. 132, 166-67, at 23 U.S.C. § 151 (1990)).

⁵⁴ 23 U.S.C. § 151(a) (1990).

⁵⁵ These inspection standards appear at 23 C.F.R. §§ 650.301-.311 (1994).

⁵⁶ Pub. L. No. 91-605, tit. II, § 204, 84 Stat. 1713 (1970).

⁵⁷ See, e.g., Newlon, *supra* note 2, at 1-2.

Inspection Program and the Bridge Replacement Program prioritized safety and advocated the replacement, and subsequent destruction, of old, unsafe bridges. Ironically, the bridge replacement program may have served as an incentive to highway departments to side-step historical concerns and destroy potentially historic bridges -- federal funds were made specially available for replacement but not for projects aimed at preserving old bridges.

This conflict was somewhat resolved by the Surface Transportation Assistance Act of 1978, which established the Highway Bridge Replacement and Rehabilitation Program.⁵⁸ Congress incorporated its preservation goals into its specific bridge program, declaring that it is “in the vital interest of the Nation . . . to replace *or rehabilitate* highway bridges . . . when the States and the Secretary [of Transportation] finds [sic] that a bridge is significantly important and is unsafe.”⁵⁹ The method chosen to effectuate this purpose involves a cooperative effort between each state and the Secretary to inventory the bridges in the state, classify them according to safety and public use, assign priority for replacement or rehabilitation, and determine the cost of such replacement or rehabilitation.⁶⁰ This program allows states to apply to the United States Department of Transportation for federal assistance in replacing or rehabilitating bridges determined to be eligible under the above priority system, with special consideration given to the removal of bridges “most in danger of failure.”⁶¹

Congress gave historic preservation another boost by establishing the Historic Bridge Program in 1987.⁶² This program singles out historic bridges⁶³ for special treatment in the Federal-Aid Highway Act. The Secretary and the states must implement the Bridge Replacement and Rehabilitation Program “in a manner that encourages the

⁵⁸ Pub. L. No. 95-599, tit. I, § 124, 92 Stat. 2689, 2702 (1978) (codified as amended at 23 U.S.C. § 144 (1990 & Supp. 1995)).

⁵⁹ 23 U.S.C. § 144(a) (emphasis added).

⁶⁰ 23 U.S.C. § 144(b)-(c).

⁶¹ 23 U.S.C. § 144(d).

⁶² Surface Transportation and Relocation Assistance Act of 1987, Pub. L. No. 100-17, § 123(f)(2), 101 Stat. 132, 163 (1987) (codified at 23 U.S.C. § 144(o) (1990)).

⁶³ For the purposes of the Historic Bridge Program, “historic bridge” means any bridge eligible for or listed on the National Register. 23 U.S.C. § 144(o)(5). Note that this is a different consideration than that for Section 4(f), which includes even those bridges that are of state or local historical significance although not eligible for or listed on the National Register. See 49 U.S.C. § 303(c).

inventory, retention, rehabilitation, adaptive reuse, and future study of historic bridges.”⁶⁴ Included in this section is a mandate that each state shall complete an inventory to determine the historic significance of each bridge in the state.⁶⁵

The Historic Bridge Program relies primarily on two methods to achieve its purpose. First, it makes efforts to preserve the historic integrity of historic bridges eligible for federal subsidies.⁶⁶ Second, it requires a state that intends to use federal funds for the demolition and replacement of an historic bridge to make the bridge available for donation to a state, locality, or private party.⁶⁷ An entity that accepts a bridge may do so only if it enters into an agreement to (1) maintain the bridge and the features that give it its historic significance and (2) assume all future legal and financial responsibility for the bridge.⁶⁸

Additional Legislation Affecting Bridges

Highway agencies face a spate of additional federal legislation imposing requirements related to environmental and historic considerations. Although the NHPA, Section 4(f), and the bridge programs collectively assert the greatest legislative influence on highway projects that involve old bridges, other federal laws impose additional, and often similar, requirements on highway agencies planning the construction, rehabilitation, and destruction of bridges. Three of the most important and pervasive of these are the Rivers and Harbors Act of 1899,⁶⁹ the Federal Water Pollution Control Act (Clean Water Act or CWA)⁷⁰ and the National Environmental Policy Act (NEPA).⁷¹

⁶⁴ 23 U.S.C. § 144(o)(1).

⁶⁵ 23 U.S.C. § 144(o)(2).

⁶⁶ 23 U.S.C. § 144(o)(3).

⁶⁷ 23 U.S.C. § 144(o)(4).

⁶⁸ *Id.*

⁶⁹ Ch. 425, 30 Stat. 1121 (1899) (codified as amended in scattered sections of Title 33 (1986 & Supp. 1995)).

⁷⁰ 33 U.S.C. §§ 1251-1387 (1986 & Supp. 1995).

⁷¹ 42 U.S.C. §§ 4321-70d (1994).

Section 10 of the Rivers and Harbors Act requires the issuance of a permit by the United States Army Corps of Engineers (COE) for any construction of structures, excavation, or depositing of materials into any “navigable water” of the United States.⁷² “Navigable waters” are “waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.”⁷³ Thus, whenever a highway project involves a navigable water of the United States and the construction of a bridge or excavation or depositing of materials necessary to the rehabilitation of a bridge, a Section 10 permit must be obtained.

Section 404 of the CWA requires a permit for any discharge of dredged or fill material into United States waters.⁷⁴ These permits, like those for the Rivers and Harbors Act, are granted by the COE. The scope of Section 404 is broader than Section 10 because “waters of the United States” under Section 404 is defined to include navigable waters covered by the Rivers and Harbors Act, tributaries of such waters, and non-navigable intrastate waters whose use could affect interstate commerce.⁷⁵ Regulated activities include the “[p]lacement of fill that is necessary for the construction of any structure in a water of the United States [and] the building of any structure . . . requiring rock, sand, dirt, or other material for its construction.”⁷⁶ As with the Rivers and Harbors Act, the replacement or rehabilitation of an historic bridge that is located over a body of water will likely require a Section 404 permit.

Although ostensibly serving environmental and commerce interests, the Rivers and Harbors Act and the CWA incorporate historic preservation goals through the permitting process. When considering a permit application, the COE uses a “public interest review,” weighing the benefits of the proposed activity with the detrimental impacts.⁷⁷ Among the factors the COE considers are the project’s effects on aesthetics, general environmental concerns, and *historic properties*.⁷⁸

⁷² 33 U.S.C. §§ 401, 403 (1986).

⁷³ 33 C.F.R. § 329.4 (1994).

⁷⁴ 33 U.S.C. § 1344(a) (1986).

⁷⁵ See Eric Paltell, Virginia Transportation Research Council, An Examination of the Virginia Department of Transportation’s § 404 General Permit Program 4 (1988).

⁷⁶ 33 C.F.R. § 323.2(f) (1994).

⁷⁷ 33 C.F.R. § 320.4(a) (1994).

⁷⁸ 33 C.F.R. § 320.4(a)(1) (1994).

The National Environmental Policy Act⁷⁹ was enacted to promote a national policy to prevent damage to the environment and to stimulate the health and welfare of humans.⁸⁰ This broad goal encompasses, among other things, the aim to “preserve important historic [and] cultural . . . aspects of our national heritage.”⁸¹ If a “major federal action”⁸² “significantly affect[s] the quality of the human environment,” the responsible federal agency must prepare an environmental impact statement (EIS) describing the impact of the proposed action, potential adverse effects, and possible alternative actions.⁸³ This EIS must be made available to the President, the Council on Environmental Quality, and the public.⁸⁴ Thus, the NEPA takes a two-pronged approach to prodding federal agencies to pursue preservation goals: first, every agency is obliged to consider every significant aspect of the environmental impact of a proposed action; second, the agency must inform the public of the findings of the environmental review and demonstrate that the impact was in fact considered.⁸⁵ However, the requirements of the NEPA are merely procedural. Analogous to the NHPA, the NEPA imposes no obligation on agencies to implement the most environmentally favorable alternative.⁸⁶

⁷⁹ Pub. L. No. 91-190, § 2, 83 Stat. 852 (1970) (codified at 42 U.S.C. §§ 4321-70(d) (1994)).

⁸⁰ 42 U.S.C. § 4321.

⁸¹ 42 U.S.C. § 4331(b)(4).

⁸² Generally, the standard for triggering NEPA requirements, “a major federal action,” is similar to the standard for triggering Section 106 requirements, “an undertaking.” *See, e.g.,* Sugarloaf Citizens Ass’n v. Fed. Energy Regulatory Comm’n, 959 F.2d 508, 515 (4th Cir. 1992); Village of Los Ranchos De Albuquerque v. Barnhart, 906 F.2d 1477, 1484-85 (10th Cir. 1990).

⁸³ 42 U.S.C. § 4332(2)(C). NEPA regulations allow for “categorical exclusions” to the processes prescribed by the NEPA. Categorical exclusions (CE’s) are actions that do not, as a rule, significantly affect the environment. One listed CE is bridge rehabilitation, reconstruction, or replacement. 23 C.F.R. § 771.117(d)(3) (1988). Although this would seem to indicate that bridge projects are not subject to the NEPA, the CE provided for bridges is conditioned on a showing that no significant environmental effects will result from the action. *Id.* § 771.117(d). Because the rehabilitation, reconstruction, or replacement of an historic bridge almost necessarily significantly affects an historic property, this CE is not a relevant consideration for the purposes of this report.

⁸⁴ 42 U.S.C. § 4332(2)(C).

⁸⁵ *Baltimore Gas & Electric Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97, 103 (1983).

⁸⁶ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-53, (1989).

The Conflicting Message Sent to Highway Agencies by Congress

Through the enactment of the legislation discussed above, Congress successfully sent a message to highway departments that the preservation of historic properties is a priority concern. Of course, the NEPA, the CWA, the Bridges and Harbors Act, and the NHPA explicitly present this policy. But it is the language of Section 4(f) and the context in which it came into existence that really drills the message home to the highway departments. Section 4(f), having been passed the same year as the NHPA, sends a doubly strong message that Congress particularly wanted to check the activities of highway departments. This intent is bolstered by the Historic Bridge Program and the Bridge Replacement and Rehabilitation Program.

While the discussed statutes clearly promote historic preservation as a paramount concern, they fail to direct agencies as to other concerns, such as safety. The *Overton Park* court noted that the legislative history of Section 4(f) is ambiguous regarding what the Secretary must consider when determining whether to approve a program.⁸⁷ In fact, the Senate Report accompanying the passed Senate bill containing Section 4(f) mentions only community disruption as one of the countervailing concerns.⁸⁸ Highway agencies must weigh a variety of factors, but the emphasis from Congress is on historic concerns, without guidance on the weight to be given other relevant concerns. This creates confusion and unnecessary administrative expenses in the attempt to satisfy the laws while protecting other interests.

The mixed messages from Congress come with an abundance of requirements, including surveys, inspections, consultations, and negotiations. These obligations alone impose great financial and time costs on highway departments. Just as importantly, these rules and regulations invite the public to scrutinize the operations of highway agencies and challenge suspect, or even merely unwanted, activities.

OPTIONS FOR HISTORIC BRIDGES

Almost by definition, bridges that fall within the category of potentially historic structures were constructed in an era of less traffic, lighter loads, and narrower roads than

⁸⁷ 401 U.S. 402, 412 n.29.

⁸⁸ S. Rep. No. 1340, 90th Cong., 2d Sess. (1968), *reprinted in* 1968 U.S.C.C.A.N. 3482, 3500.

exist today. Built to withstand the traffic of the period, old bridges simply cannot meet the demands of today's traffic. Often the load capacity of a bridge cannot support heavy vehicles, such as cement trucks, emergency vehicles, and school buses. In addition, one-lane bridges present an obstacle to today's traveler. Inevitably, years of increasing traffic and weather lead to the deterioration of old bridges. It is not surprising that highway officials target many old bridges for corrective action.

Old bridges come to require corrective action when they no longer adequately serve the traveling public. The relevant shortcomings are perhaps more likely to involve inconvenience than risk of harm to road users.⁸⁹ Nonetheless, in this report we overlook driver inconvenience to focus exclusively on threats to safety, as it is with reference to safety that we most clearly see the contradiction in Congress' legislative efforts.

When a highway official determines that an old bridge is unsafe, several factors prompt the official to consider the options for the bridge. The historic preservation laws direct the official to consider "feasible and prudent" alternatives and to do "all possible planning" to mitigate the harm to the bridge. In addition, officials may face considerable local political pressure to preserve the bridge. Thus the highway official faces the task of considering the potentially numerous options.

Rehabilitation for Continued Use at Original Site

From a preservationist's point of view, the most desirable outcome in the preservation of historic bridges is the use of an old bridge at its original site.⁹⁰ With unsafe, old bridges this means the highway agency must repair the bridge. The first task in exercising this option is to determine the weaknesses of the bridge. Next, the bridge engineer must determine the optimal method of remedying these weaknesses to ensure the bridge is safe.

⁸⁹ Tony Opperman, of the Virginia Department of Transportation (VDOT) Environmental Section, notes that often VDOT's decision to replace an old bridge relates to driver inconvenience associated with the bridge's structural condition and traffic function, rather than explicitly to safety. Telephone conversation with Mr. Opperman (November 8, 1995).

⁹⁰ See *Kicking Route 66 Activist Trying to Keep Historic Bridge in Use*, Wichita Eagle, Feb. 9, 1992, at 3B. When highway officials planning the replacement of an historic bridge offered to create a park next to the out-of-use historic bridge, the president of the local preservation group said, "We don't want a park. We want the bridge left alone."

Older bridges present challenges to engineers seeking to diagnose them. One problem with old bridges can be a lack of written history. Engineers often cannot locate original plans or documentation of material type and material quality of an old bridge.⁹¹ This can impede the effective study of a bridge's structural integrity and hamper the formulation of plans to rehabilitate the bridge. Even when material type and quality are known and original blueprints are available, engineers are faced with the crucial task of determining the strength of the old bridge. These bridges have been in service for scores of years, facing heavy traffic and harsh weather. As a result, structural deficiencies are highly probable; but evidence of the effects of deterioration can be quite elusive.

Engineers possess the capability to perform diagnostic tests to determine some elements of bridge strength and material integrity. Currently, engineers can test, among other things, the amount of strain experienced by a bridge for given loads, concrete strength, and, to a limited degree, the type of material used to construct the bridge.⁹² The technology is improving and, in fact, some state departments of transportation (DOTs) have used improved load capability testing and found that some bridges had greater load capacities than had been predicted by more primitive evaluations.⁹³ The increased use of such tests to determine load capacity must be cautiously pursued and evaluated, however. The strength of some bridge components simply cannot be tested without completely dismantling them.⁹⁴ Even though a test may show an acceptable degree of strength, unknown deficiencies can exist and constitute an ever present danger for sudden, unanticipated tragedy.

Although much information may be gained from diagnostic tests, engineers are left in the dark about many factors that are necessary to the formulation of rehabilitation plans. The Washington DOT learned this important fact the hard way in 1991 when a 50-year-old bridge it was renovating collapsed. The state highway officials erroneously calculated the strength of the bridge, which tore apart in the midst of a \$36.5 million renovation project.⁹⁵ Even bridge engineers express misgivings about rebuilding and rehabilitation

⁹¹ Joseph J. Pullaro, *Engineering Concerns of Historic Bridges*, in Seminar: Historic Bridges -- Upgrade or Replace? 1, 2 (1992) (sponsored by the Committee on Historic and Archaeological Preservation in Transportation).

⁹² *Id.* at 3.

⁹³ Edward G. Dauenheimer & John Schuring, *Testing the Limits*, Civil Engineering, May 1991, at 51.

⁹⁴ Jai B. Kim & Robert H. Kim, *Readers Write*, Civil Engineering, Nov. 1991, at 30 (letter to the editor).

⁹⁵ Mark Higgins, *Bridge Flaws Missed: I-90 Panel Says State May Have Ignored Some Ominous Signs*, Seattle Post-Intelligencer, Mar. 30, 1991, at B1.

efforts, fearing failure of such projects and the potential for subsequent collapses.⁹⁶ Thus, the uncertainties in a bridge's structural history and the impossibilities presented to engineers attempting to determine bridge strength can transform the rehabilitation of an old bridge into the effective destruction of the bridge.

Rehabilitation efforts can be successful, however, and highway departments continue to investigate improved procedures for restoring and adapting bridge structures to meet today's safety standards. Increased technological sophistication has supplied new methods of counteracting some of the disabling defects common to old bridges. For instance, rehabilitation may include the spraying of zinc into concrete supports to reverse damage done by salt.⁹⁷ Another method to increase load capacity is the addition of high strength cables or rods to support mechanisms.⁹⁸

Unfortunately, many other methods available for the restoration of bridges to make them safer do not promote the preservation of historic aspects of the bridge. For instance, when widening is an option, it may involve the replacement of a portion of the bridge that is considered an integral part of its aesthetic and architectural quality.⁹⁹

Sometimes the uncertainties and the limited rehabilitation options do not allow for the updating of an old bridge to meet today's traffic demands. In these situations, highway departments can use the bridge at its original site by attempting to alter the traffic demands. The most common example of this is changing the load limit. Of course, the enforcement reality is that the government cannot monitor all of the people all of the time.¹⁰⁰ It simply cannot ensure that drivers will not violate load limits. Thus the potential

⁹⁶ See Chandrasekaran, *supra* note 7.

⁹⁷ Pullaro, *supra* note 91, at 5.

⁹⁸ *Id.*

⁹⁹ William Zuk et al., Virginia Highway & Transportation Research Council, *Methods of Modifying Historic Bridges for Contemporary Use* 8 (1990).

¹⁰⁰ See S. Rep. No. 1340, 90th Cong., 2d Sess. (1968), *reprinted in* 1968 U.S.C.C.A.N. 3482, 3496 (noting testimony before congressional committee that had expressed concern that load limits could not be adequately enforced for most bridges).

exists for illegal loads to traverse a bridge, increasing the likelihood of a bridge collapse.¹⁰¹

Another option for accommodating traffic demands is to move one narrow, old bridge adjacent to another narrow, old bridge so that each bridge bears only traffic traveling in one direction.¹⁰² The difficulties presented by this option are discussed below with regard to moving old bridges and compromising location and structural integrity.

Replacement

From the viewpoint of someone concerned solely about transportation safety, the most desirable option for dealing with an outdated or unsafe bridge is the replacement of the old bridge with a modern one. At first sight, this option appears to necessitate the destruction of the replaced bridge. While this does occur, much to the chagrin of preservationists, it is not the only option. Even when the agency decides to replace the old structure, it retains several alternatives for the final disposition of the replaced bridge.

When a highway department plans the replacement of an old bridge, it may sell or donate the old bridge to another government entity or a private party. In fact, when a highway agency seeks federal funding for bridge replacement under the Bridge Replacement and Rehabilitation Program, it must offer the historic bridge for donation.¹⁰³ Although this is an admirable attempt to preserve historic bridges, the option presents practical obstacles.

First, the moving and maintenance of an historic bridge can be quite costly.¹⁰⁴ When a bridge is accepted pursuant to the contract terms required by the Historic Bridges Program, the accepting party must assume responsibility for liability as well as upkeep associated with maintaining the historic integrity of the bridge. These costs can be prohibitive, as preservation groups may not be well-funded, and considering the numbers of bridges that are targeted for replacement.

¹⁰¹ See Randall Edwards, *Bridge Loses Out to Truck*, Columbus Dispatch, Dec. 9, 1988, at 2F (38 ton garbage truck drove over old bridge with posted 12 ton limit, causing its collapse).

¹⁰² Zuk, *supra* note 97, at 12.

¹⁰³ See *supra* notes 58-68 and accompanying text.

¹⁰⁴ See Pam Runquist, *Virginia Department of Transportation Wants Someone to Adopt Historic Bridge*, Daily Press, Jan. 14, 1995, at E1. Despite the offer of \$75,000 to subsidize maintenance costs, a highway official predicted no one would offer to take historic bridge because the cost would be too high.

Second, the relocation of a donated bridge can compromise its historic integrity. Under the criteria for eligibility for the National Register, “location, design, setting, materials, workmanship, feeling, and association” are considered integral aspects of historicity.¹⁰⁵ In fact, the criteria exclude from consideration for the National Register those structures that have been moved from their original sites unless they are “significant primarily for architectural value.”¹⁰⁶ Besides, for many bridges, the reason for preservation efforts is the attachment of local residents to the bridge or the proximity of the bridge to the site of an historic event. Further, when a bridge is removed, there is a potential for structural damage during the removal process.

The government replacing the bridge also may decide to retain the bridge itself. The appeal of this option is tempered by the same realities discussed regarding donation. The maintenance and liability costs can be prohibitive, and if the bridge is moved the historic integrity may be compromised. However, where the bridge is spared from destruction by the efforts of the government or another party, possibilities abound for adaptive reuse.

Adaptive Reuse

The adaptive reuse of historic bridges commonly involves non-vehicular purposes. When a bridge can no longer serve the automotive traffic, there remains the potential for continued use in a recreational, aesthetic, commercial, or residential manner. The most common conversion of historic bridges is from vehicular to pedestrian and bicycle use.¹⁰⁷ Some states have left old bridges at their original site or moved them to parks to be used solely for pedestrian crossings or biking trails.¹⁰⁸ This option involves logistical and financial obstacles, discussed above, that limit its use.

The less common adaptive uses span a wide range. Old bridges have been converted to private fishing piers, gift shops, restaurants, and picnic areas.¹⁰⁹ Even bolder

¹⁰⁵ 36 C.F.R. 60.4 (1994).

¹⁰⁶ *Id.*

¹⁰⁷ Chamberlin, *supra* note 4, at 30.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.* at 30-32; Zuk, *supra* note 97, at 6-7.

suggestions have been studied, including the conversion of old bridges to office buildings, residential complexes, and playgrounds.¹¹⁰ The realization of these sorts of plans requires a determined benefactor, be it governmental or private, who is willing to take on the responsibility and cost of researching and overcoming the architectural and structural challenges of the conversions, the risk that the bridge will prove unable to bear the strains of the new uses, and the potential for a failed venture. Additionally, these adaptations can vastly alter the structure, appearance, location, and association of the bridge as it originally stood. Thus, the effort to preserve the historic bridge may retain the physical edifice while compromising the historic qualities. In any case, the historic preservation hope of keeping historic structures “as is” is rejected when the bridge is altered beyond recognition.

Always in the background of any rehabilitation, removal, or adaptive reuse of an old bridge is the risk of collapse. The dangers presented by old bridges are real. Despite attempts to identify weaknesses and structural defects in old bridges and subsequent actions to impose load limits and even close old bridges to vehicular traffic, tragedies still occur. In 1989 in Arkansas, five people were killed when the 77-year-old suspension bridge on which they were standing collapsed.¹¹¹ This bridge, which was designated a national historic site in 1986, had been closed to vehicular traffic since 1972 and had undergone three inspections between 1986 and the collapse.¹¹² The list of bridge collapses and the deaths and injuries caused by them is long and tragic.¹¹³

AN ILLUSTRATION: THE NORTH ANNA RIVER BRIDGES¹¹⁴

One case where the above-described legal framework and options concerning outdated historic bridges have seen application in Virginia is the project to replace the

¹¹⁰ Zuk, *supra* note 97, at 6-7.

¹¹¹ *River Cleared After Bridge Collapse*, Miami Herald, Oct. 31, 1989, at 6A.

¹¹² *Id.*

¹¹³ See, e.g., *Cases Settled From Collapse of Bridge*, N.Y.L.J. 1 (April 25, 1990) (10 killed in collapse of 33-year-old bridge in New York); Wallace, *supra*, note 51 (46 killed in collapse of 39-year-old bridge in Ohio); Paul Valentine, *Md. Eastern Shore Bridge Collapses*, Wash. Post, Aug. 18, 1988, at D03 (bridge collapsed just after car passed over it).

¹¹⁴ The information provided in this case study was obtained from file at the VDOT Central Office, Environmental Section, with the assistance of Mr. Tony Opperman. The sources include VDOT’s Final 4(f) Determination submitted to the FHWA, a VDOT Position Paper on the project, the Memorandum of Agreement authorizing go-ahead of the project, the DHR’s report evaluating the historic worth of the bridges, and a number of correspondences between the involved officials.

Route 1 bridges over the North Anna River. This project brought the Virginia Department of Transportation (VDOT) and the Virginia Department of Historic Resources (DHR) into conflict over the fate of the bridges, which were found eligible for listing on the National Register of Historic Places. For more than one year the project to replace the spans was held in check by DHR opposition. Ultimately, in the first half of 1994, agreement was reached, the procedural requirements satisfied, and the project permitted to go forward.

This crossing of the North Anna River between Hanover and Caroline Counties was comprised of two spans handling opposite directions of traffic, built in 1926 and 1935. The two bridges were composed of steel through trusses of the Warren variety, set between concrete deck girder approach spans. With this type of structure, the trusses extend above and over the roadway. The truss structures were 140 feet long. These bridges possessed historic significance beyond their age and older technology. As a part of Route 1, they were a component of the primary highway that linked the Eastern United States, running from Maine to Florida, before the interstate system came to dominate highway travel. As a remnant of the days when Route 1 held such importance, the bridges served as both a visible and a functional reminder of a different era. Further, the bridges commemorated the nearby North Anna Civil War battle site and were decorated with Art Deco obelisks.

VDOT identified the bridges for replacement on the basis of their antiquated design and deteriorated conditions. The bridges' pavement width available for traveling lanes was significantly below that called for in contemporary structures. And, the truss structure extending above the roadway limited vertical clearance and was frequently damaged by overheight vehicles. Further, the bridges were not designed for the heavy loads that are typical today, and years of exposure and service had diminished their original strength. The significance of these weaknesses was magnified by Route 1's role as the backup system to nearby Interstate 95. Should an accident or other incident force the closure of I-95, Route 1 is responsible for carrying that heavily-traveled interstate's traffic, a flow including trucks that exceed the old bridges' weight limits.

VDOT determined that rehabilitation was not a viable option for the North Anna River bridges. The Department noted the impracticality of strengthening the structures and the impossibility of increasing either horizontal or vertical clearance on the spans. Because the project to replace the bridges involved the use of federal funds in a project that would affect potentially historic properties, the NHPA Section 106 was implicated, requiring consultation with the DHR. The DHR, unlike VDOT, was not convinced that alternatives whereby the historic bridge would continue to serve transportation needs were unavailable. The DHR found support for its position that further study was appropriate from an independent engineer it hired to evaluate the available information on the bridges.

The two Departments reached an impasse that held the project in check for more than one year. Ultimately, with involvement of the Federal Highway Administration (FHWA) and the Advisory Council on Historic Preservation (ACHP), an inspection revealed to all parties such substantial deterioration of the concrete bridge decking that the replacement opponents acquiesced. In a Memorandum of Agreement (MOA), the ACHP, the FHWA, and the Virginia State Historic Preservation Officer (DHR), with the concurrence of VDOT, signed off on a plan for replacing the bridges. According to the MOA, upon the implementation of the terms the parties thereby agreed to, the FHWA's Section 106 obligations to afford the ACHP an opportunity to comment and to take account of the effects of the project on historic properties were satisfied.

These terms to be implemented included measures to respect the historic quality of the old bridges, such as documentation of them for the Historic American Engineering Record (HAER), inclusion in plans for the replacement bridges of commemorative plaques and reconstructed obelisks from the old structures, and efforts to donate the old trusses to organizations willing to take responsibility for them. Further, VDOT agreed to hold a public meeting to discuss the impact of the project on the historic properties. With regard to donation, VDOT agreed to financially assist takers up to the amount that demolition would have cost VDOT, approximately \$35,000 to \$40,000. While the availability of the bridges was advertised, and a number of entities expressed interest, all withdrew, leaving the bridges to be demolished.

Interestingly, throughout the series of interactions preceding the go-ahead for replacement of the North Anna River bridges, the legal regime of concern was Section 106 of the NHPA rather than the substantively more stringent Section 4(f) of the DOT Act. Clearly, this project required the satisfaction of the Section 4(f) requirements, and VDOT submitted a "Final 4(f) Determination" that received the approval of the FHWA. That is, VDOT demonstrated that there were no "feasible and prudent" alternatives to the removal of the bridges. But it was Section 106's procedural requirements that blocked progress on the project for so long. Section 106 provided the framework for a party skeptical of the plans, the DHR, to slow movement towards implementation. In this regard, this case study serves as a good example of the substantial effects capable of being wrought by Section 106's procedural requirements.

It is also worth noting that in this case the major proponent of preservation of the historic bridges was a state agency, and not the public at large. The citizens most concerned about the impacts of the bridge replacement seemed to be a group of canoeists who used a location just off to the side of one of the structures as a put-in point. Their concerns were allayed by VDOT's assurances that river access would continue to be provided adjacent to the new bridges. County political leaders favored the improvements in service promised by modern bridges. This was not a situation where local groups or citizens chose to vigorously fight the replacement of the historic structures. The lack of

substantial local opposition to the improvement plans might go towards explaining why Section 4(f) did not become a point of contention in this case.

CONCLUSIONS AND A RECOMMENDATION

The protections afforded by historic preservation laws go towards protecting historic properties from the government and the public. They were not intended to protect the public from historic properties. Even though Section 4(f) may allow for safety to be a consideration, it does not do so explicitly. A wide range of options is available to highway departments for the disposition of historic bridges presenting safety hazards. The question presented by the legislation, Section 4(f) particularly, is whether the department must consider all of them in spite of the likelihood that optimal safety may not be achievable. The reason for this question is that the legislation targets projects that, in their implementation, may affect or use historic properties that are not integral parts of the projects themselves. When the impetus for a project is the hazard presented by the historic property, it would seem that the priorities must be different. But the law does not make a distinction.

The language of the statute should be amended to state that a project triggered by the unsafe nature of a highway structure need not comply with Section 4(f). Rather, the more flexible Section 106 procedures would apply. This change would serve several functions. First, the substantive requirements imposed on the state would be reduced, thus reducing the financial waste and time delay. Second, public challenges, restricted mainly to procedural claims, would be less daunting, thus easing the litigation burdens on the state. Third, this language would send a message to states and the public that safety must be the priority concern in highway projects. This message would diminish some of the public pressure to retain historic bridges at their present site and the potential for the compromising of safety that could otherwise occur.

This suggestion for change is not an attack on the notion that historic preservation is a worthy pursuit. Rather, it is an assertion that public safety must outweigh historic preservation concerns. A revised Section 4(f) provision, directing the application of Section 106 procedural requirements in lieu of the NHPA's substantive mandates, would guarantee that historic structures would be considered and the public would have

continued ability to assert pressure for preservation. As discussed,¹¹⁵ the Section 106 procedure imposes a broad and mandatory command to consider the effect of federal projects on historic sites. Section 106's significance is attested to by the project to replace North Anna River bridges. In addition, the procedural and protective burdens of other preservation provision in NEPA, the CWA and the Bridges and Harbors Act would continue to spotlight the concerns of preserving historic bridges. Although preservationists would lose the substantive bite of Section 4(f), they would retain the "sword" of a procedure that can be enforced by a court and can cause burdensome delays, thus maintaining a likelihood that highway agencies will mitigate adverse effects when safety is not compromised.

As the statutes stand, public safety is merely one of many considerations that are incidental to the goal of historic preservation. This seems illogical, as safety should not be incidental to policies promoting less palpable goals. Simply put, safety should be the primary consideration, while historic preservation should take a lesser role.

¹¹⁵ See *supra* notes 30-34 and accompanying text.