

Historic Bridges: Identifying, Prioritizing, and Managing

PARTNERS & PURPOSE

Local preservationists serve an important role in determining which historic resources in their communities are important. This guide is designed to be a general reference for identifying, understanding, and working with historic bridges.

The Texas Historical Commission (THC) and other entities rely on input from County Historical Commissions (CHCs), Main Street managers, Certified Local Government contacts, and other history, conservation, and preservation groups to follow local news, events, and projects for activities that might affect historic properties.

The Texas Department of Transportation (TxDOT) uses THC preservation contacts to seek local input on state and federal projects that it oversees, including replacement or rehabilitation of historic bridges. Local governments determine how local properties are maintained. Counties apply for funding and assistance from TxDOT for bridge replacement and repair projects, as well as reusing historic bridges in new ways, such as for hike-and-bike trails.

The Historic Bridge Foundation (HBF), a national advocacy group focused on preserving the country's important bridges, works closely with THC and TxDOT on projects that might affect historic bridges on Texas roads. Together, the THC, TxDOT, and the HBF have created this guide specifically for local preservation groups. This publication was developed with historic bridges in mind, but the same guidance can be applied to many types of resources and projects.



The Beveridge Suspension Bridge in San Saba County was bypassed but restored as a pedestrian bridge, San Saba County. Photo courtesy Historic Bridge Foundation.

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BRIDGE HISTORY IN TEXAS

Early Texans relied on simple structures, natural fords, and ferries to cross bodies of water. With timber readily available but limited road and rail access to other resources, such as brick and stone, wooden trestles and simple trusses were much more common than masonry bridges in Texas for most of the 18th and 19th centuries. Metal trusses of the late 19th century, based on the earlier timber structures, reflect experimentations in engineering and manufacturing, and more economical and reliable means of crossing natural features for road and rail builders.

In 1917, with the creation of the Texas Highway Department, now known as TxDOT, state and county road officials adopted standards for roads and bridges. Throughout the 20th century, manufacturers and engineers made advances with steel and concrete, and Texas engineers developed bridge technologies that have been adopted nationally.



The 1918 Broad Street Bridge in Mason County is one of only a few concrete trusses remaining in the United States. Photo courtesy Historic Bridge Foundation.

SIGNIFICANCE & REALITY

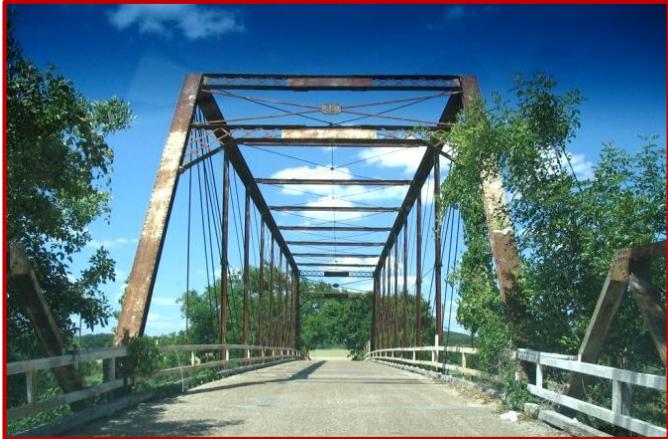
Bridges can be important to a local community for many reasons, from the pragmatic need of getting across a natural feature to the historical events and eras we associate with a structure or its location. Under state and federal laws, the THC and TxDOT consider a bridge's significance under the criteria established by the National Park Service (NPS) to assess the eligibility of a building, structure, object, site, or district for listing in the National Register of Historic Places (NR).

The NR criteria help frame discussions of importance relative to events and people in our history, including the development of communities and the engineering technology of the past. Because of this, if a local community is interested in saving a historic bridge, it needs to understand the NR criteria in order to build the case for the eligibility of the bridge. Arguments centered on personal nostalgia are largely ineffective in the realm of the laws governing cultural resources, and TxDOT decision makers, including engineers, archeologists, and historians, are limited to the parameters outlined in such laws.

THC staff involved in reviewing these projects may be sympathetic to local causes, but they are also limited to the framework outlined in the NR criteria. Local advocates must demonstrate importance within that framework. For a property to be determined NR eligible, it must have significance and still be able to convey that significance—still retain historic integrity, again based on criteria outlined by NPS.

Despite significance and integrity, a property—especially one used by the traveling public, like a bridge—may still be removed because of safety, damage, development pressures, or other considerations. As part of the federal review process, TxDOT, the THC, and the HBF strive to take local input in helping determine what type of efforts might be made to mitigate the loss of a historic resource.

Metal truss bridges are sometimes reusable in new locations, such as in a park, where they may have a second life for pedestrian use. Concrete and masonry bridges are less likely to be moveable. Sometimes these structures can be left in place and perhaps used as part of a hike and bike trail. In either case, if a community is still struggling to find funds for maintenance, deterioration and neglect may continue to be cause for concern.



This Whipple truss bridge in Clifton (Bosque County) is the only one in Texas of its type still in use, but plans are underway to bypass it. Local and state advocates will need to engage in state- and county-level decision-making processes about its fate. Photo from THC files.

PRIORITIZING & ADVOCACY

Preservationists face tough questions about which resources are most worthy of saving. TxDOT and others making decisions have similarly tough choices. In addition to considering effects on historic resources, they must also consider environmental, geographical, financial, and other limitations that sometimes outweigh preservation concerns.

As is true for all historic resource types, knowing what you have ahead of time is important. Surveying your community's historic resources—and then keeping your surveys up to date—can help prioritize properties in advance of any projects that might affect them. Surveys also give your local officials and partners tools they can use when considering new projects, maintenance priorities, and constraints they might face in the future. TxDOT has surveyed bridges around the state.

Ensure that your voice is heard and your organization's opinion is valued by getting to know your local officials and engineers, and staff from area TxDOT offices.

PROGRAMS & PROTOCOLS

Section 106 of the National Historic Preservation Act of 1966 outlines a coordination process. Projects funded, licensed, or permitted by federal agencies must consult with state and local stakeholders on effects—both direct and indirect—to properties that are listed in or eligible for NR listing. In Texas, the THC performs the role of State Historic Preservation Office.

For projects that receive funding from any US Department of Transportation agencies, including the Federal Highway Administration (FHWA), an additional law referred to as Section 4(f) applies. Section 4(f) mandates that project planners document that adverse effects to historic resources are unavoidable. This law, which falls under the US Transportation Code, enables THC to comment on Section 4(f) documentation.

The THC also serves a role under the state's Antiquities Code, which is a narrower law focused on the direct effects from projects on state lands. This includes where there might be archeological deposits in a street or changes to a state-owned building with historical designations. State lands include property owned by subdivisions of the state, such as counties, cities, and school districts, including roads and bridges.

TxDOT coordinates with THC under both Section 106 and the Antiquities Code. For example, depending on how a bridge project is funded, it might have federal involvement through the FHWA and might require a US Army Corps of Engineers permit; it might also be on state property. In 2014, the FHWA delegated much of its environmental and historic preservation obligations to TxDOT.

Through state- and federal-level agreements, TxDOT and THC have customized a streamlined process for this type of coordination. County Historical Commissions, Certified Local Government and Main Street offices, and the HBF are all important to that process, offering local perspectives and resource-specific comments. TxDOT staff and their consultants often solicit input from local constituents in hopes of finding more information about historic resources in a project area and the level of local concern.

MAINTENANCE & REPAIRS

First and foremost, historic bridges still in use must be maintained and repaired to ensure public safety, whether they are still in vehicular use or just used by pedestrians. Maintenance and repairs should be made to maintain the long-term structural integrity and usefulness of the bridge, but work should also be done in keeping with the Secretary of the Interior's Standards for Rehabilitation. Methods should not damage historic fabric or make future maintenance difficult. Repairs and replacement of components should be made in kind. When necessary, new materials and modifications should be compatible with historic designs and decorative elements and should not obscure a bridge's historic significance.

TxDOT developed maintenance and repair guidance for their district and area engineering staff. This same guidance is available online to CHCs and other local preservationists, who might use it to understand the type of damage that affects our historic bridges. With a good survey of your area's historic bridges and a good working relationship with county and TxDOT personnel who help maintain our important infrastructure, you can help raise awareness about more funds or work that might be needed to maintain, repair, and protect local bridges.

REHABILITATION & REUSE

With local support and careful planning, historic bridges can be kept in vehicular service at their original locations. Sometimes this means that, with growing traffic in an area, a second bridge will be built, enabling traffic in one direction to use the historic structure, with the new structure taking the other direction. Other options include reusing a bridge as part of a hike-and-bike or pedestrian network, either at its original location or in a new place, such as within a park or trails system. Bridges have also been bypassed and left in place as monuments; this solution can make maintenance a challenge for local governments.

The most successful examples of preservation of these historic structures are those that include a long-term maintenance plan, including routine inspections and repairs to keep a bridge safe for use. Finding an ongoing use for the bridge ensures that it will continue to be seen by the general public, too, keeping it on the minds of parks departments, local officials, and advocates.

MITIGATION & OUTREACH

When preservation of a bridge is not an option, the end result is often a report or educational materials that tell the story of the lost structure. This mitigation typically takes the form of drawings, historical markers, museum exhibits, oral history interviews with bridge engineers, or narratives about the development of local communities served by the bridge. Although nothing can truly replace the experience of a bridge in its original setting, these materials serve to educate and reach out to those affected by the loss or who are interested in local and statewide engineering history. The Library of Congress serves as repository for much of the country's mitigation materials produced under standards set by the Historic American Engineering Record (HAER), Historic American Building Survey (HABS), and Historic American Landscapes Survey programs.



Photos like this one above of the Ward Brazos River Bridge were produced when it was bypassed in 1997. It was blocked off and left as a monument. Here it is prior to the bypass project, Spanning the Salt Fork of Brazos River at County Route 109, Aspermont, Stonewall County, TX. Library of Congress, Prints & Photographs Division, HAER, Reproduction number HAER TX,217-ASPER.V,1—9.

TOOLS & RESOURCES

Texas Historical Commission:

<http://www.thc.state.tx.us/learn/historic-bridges-texas>

The THC website includes history of Texas bridges, links to partner agencies, and information about state and local preservationists' roles in federal and state decision-making processes.

Texas Department of Transportation:

<http://www.txdot.gov/inside-txdot/division/environmental/historic-bridge.html>

Through TxDOT's historic bridge web content, learn how to research a bridge and apply the NR Criteria to demonstrate a bridge's historic significance. TxDOT also offers toolkits on maintenance and repair of truss bridges and features a bridge marketing feature for bridges in need of a new home. Learn about bridges around the state through TxDOT's interactive maps.

Historic Bridge Foundation:

<http://historicbridgefoundation.com/>

The Historic Bridge Foundation's website offers tools for preservation advocacy, information about bridges in Texas and around the country, and a variety of resources to help understand the importance of bridges.

National Research Council:

http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25%2815%29_FR.pdf

The National Research Council's *A Context for Common Historic Bridge Types* documents major periods of technological changes, construction methods, and important figures in bridge engineering history.

National Park Service:

<http://www.nps.gov/hdp/coll.htm>

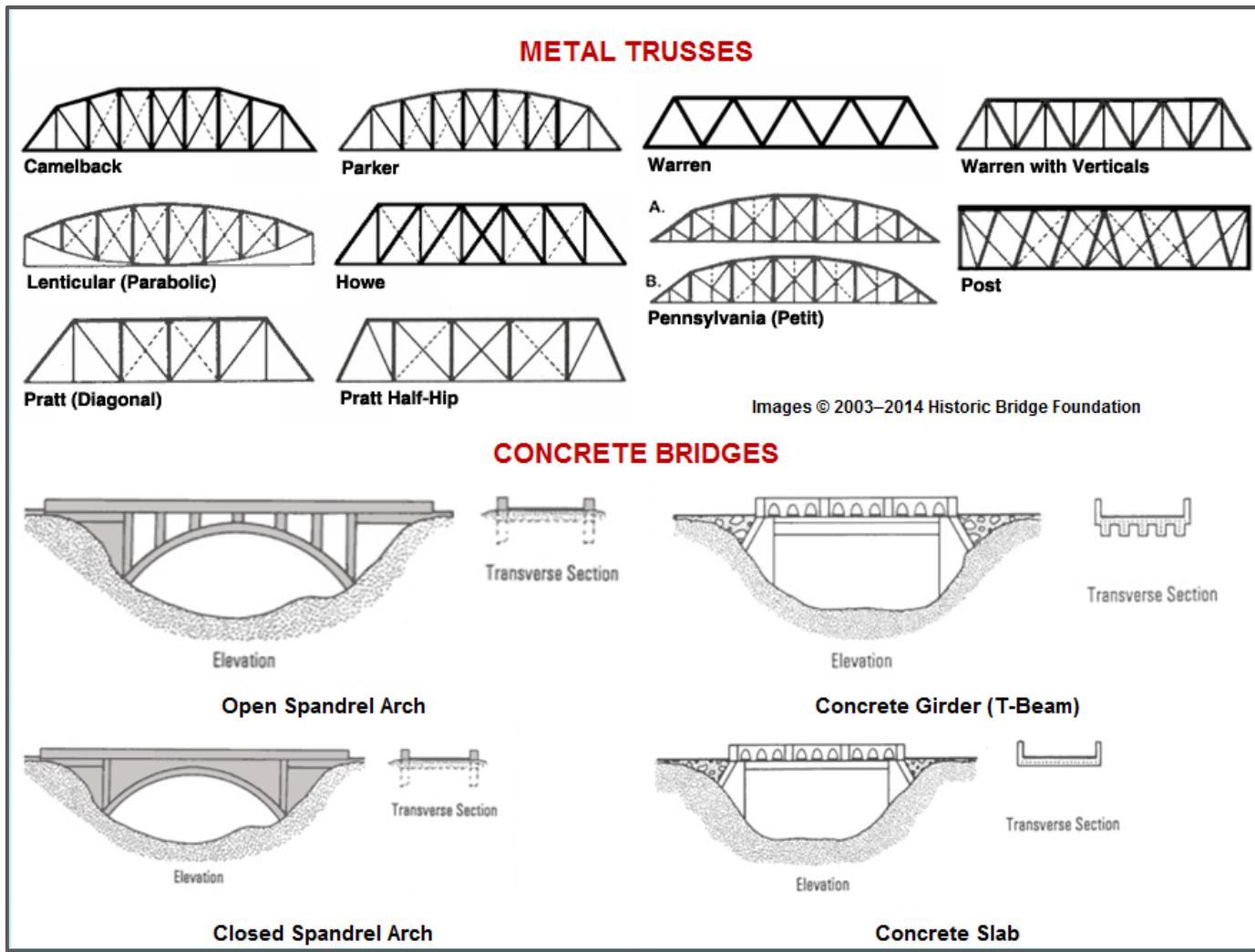
The National Park Service's Historic American Engineering Record (HAER) and Historic American Buildings collections at the Library of Congress house drawings, photographs, and reports on the country's most significant historic properties, including those that have been demolished. HAER information for bridges includes many Texas examples.



These images are part of the HAER record for the Regency Suspension Bridge, Spanning Colorado River at County Route 126, Goldthwaite, Mills County. The photos show not only the overall bridge but also details, like wires grouped to form the suspension cables and other ways the engineers assembled the structure. Library of Congress, Prints & Photographs Division, HAER, Reproduction numbers HAER TX,167-GOLD.V,1—7, HAER TX,167-GOLD.V,1—10, and HAER TX,167-GOLD.V,1--11 respectively.

BRIDGE TYPES

Bridges are constructed in different ways and are often identified by the materials they are constructed from and the method of construction. Here are some you might see in Texas:



Texas has a handful of other bridge types, such as suspension, cable-stay, and masonry arch bridges, like the Possum Kingdom Bridge at left, on State Highway 16 in Palo Pinto County (photo from THC files).

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