



National Historic Covered Bridge Preservation Program



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Federal Highway Administration



Program Establishment

- Highway Legislation
 - 1998 Transportation Equity Act for the 21st Century (TEA-21)
 - 2005 Safe, Accountable, Flexible, Efficient transportation Equity Act – A Legacy for Users (SAFETEA-LU) – Sect 1804 National Historic Covered Bridge Program

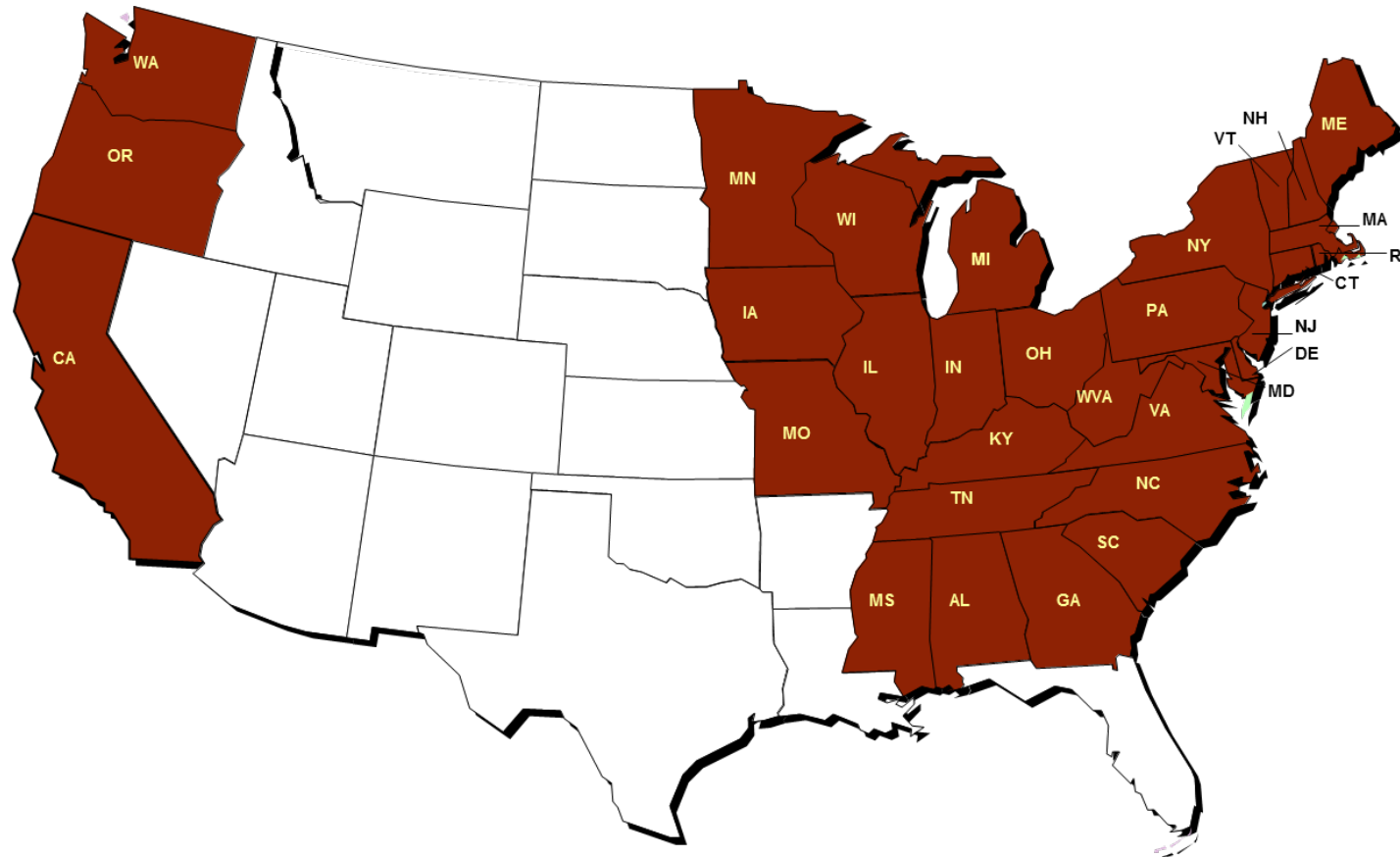


Scope of the Program

- Preservation, rehabilitation, or restoration of historic covered bridges
- Research, education & technology transfer



Preservation of Over 200 bridges in 24 States



Source: World Guide to Covered Bridges, 1989



Bennett's Mill , Greenup Co, Kentucky

- 1855
- Single span - 48.3 m (158.5 ft)
- Only surviving Wheeler truss in the U.S.

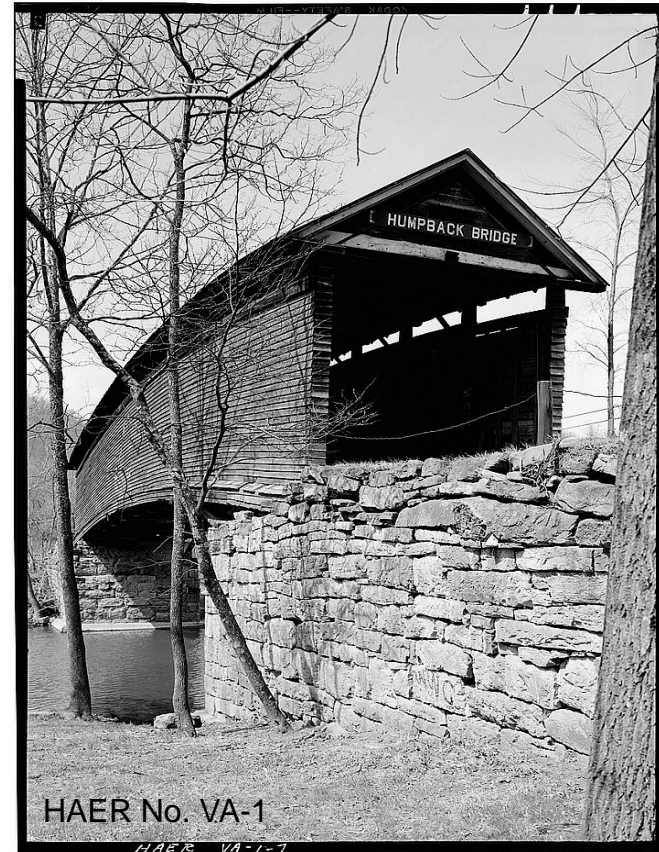


Source: Bridgehunter.com



Humpback, Alleghany County, Virginia

- 1857
- Multiple Kingpost truss
- Single span
- 36.5m (120 ft) – along lower chord
- 30.5m (100 ft) – between abutments
- Oldest in Virginia



2012 - National Historic Landmark



Holliwell, Madison County Iowa

- Town lattice truss
- 1880
- 33.2 m (109 ft)





Roseman, Madison County, Iowa

- 1883
- 31.7m (104 ft)
- Town lattice truss
- With 4 wood approaches – totals 62.5m (205ft)



HAER No. IA-95



Eldean, Miami County, Ohio

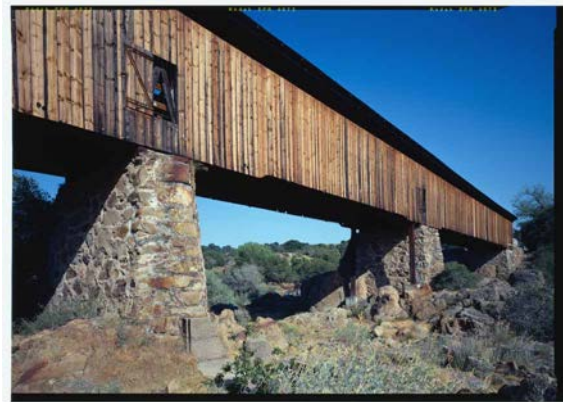
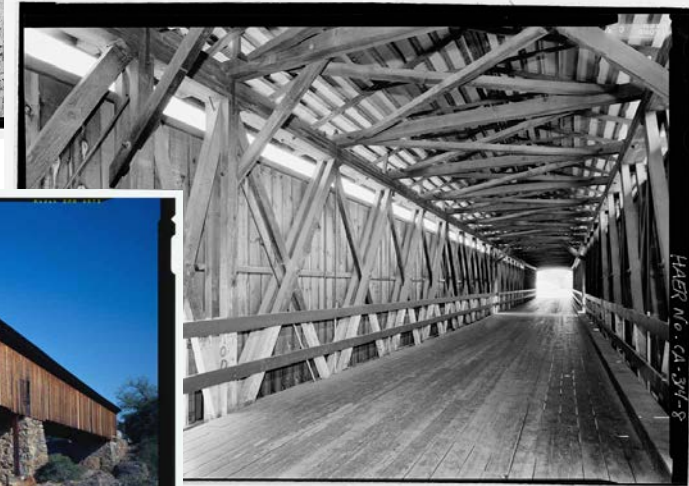
- Stephen Long 's truss
- 1860
- 68 m (224 ft)





Knights Ferry, Stanislaus County, California

- 1863-64 during the California gold rush
- Longest covered bridge west of the Mississippi



Knights Ferry, CA

2012 - National Historic Landmark



Fisher School, Lincoln County, Oregon

- 1919
- 22 m (72 ft)
- 5th oldest Howe truss in Oregon





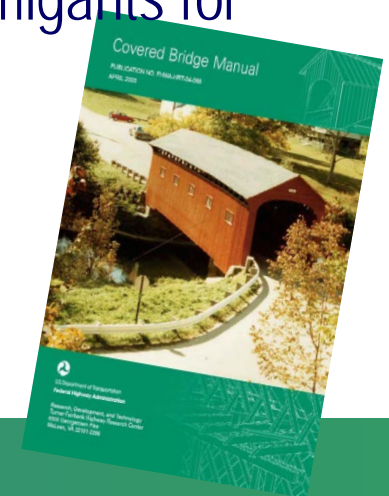
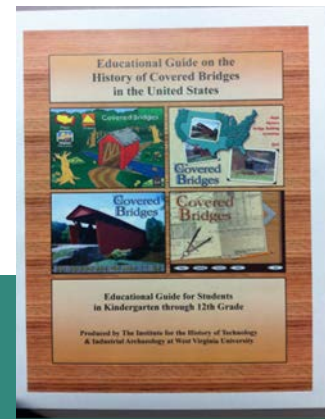
Research, Education and Technology Transfer (RD&T)

- **Partnership**
 - Federal Highway Administration
 - Forest Service (FS) – Forest Products Laboratory (FPL)
 - National Park Service (NPS) – Historic American Engineering Record (HAER)
- **Emphasis**
 - Repair, strengthening, and treatment methods
 - Historic documentation
 - Educational videos and manuals
 - Workshops and seminars



RD&T – Funded Studies

- Covered bridge manual
- Strengthening historic covered bridges to carry modern traffic
- Fire retardant treatments for historic covered bridges
- Educational guide on the history of covered bridges in the United States http://www.woodcenter.org/covered_bridges_education/
- “A bridge to the past” documentary
- Identification of preservative treatments and fumigants for treating historic covered bridges





RD&T Funded Studies

- Improved Ratings for Covered Bridge Rating Through Load Testing

- Development of Lightweight Floor Replacement Systems

- Improved Analytical Techniques for Historic Covered Bridges

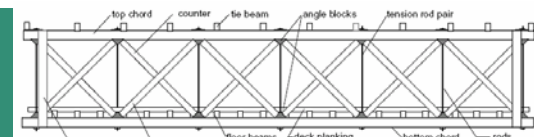
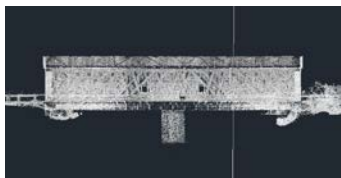
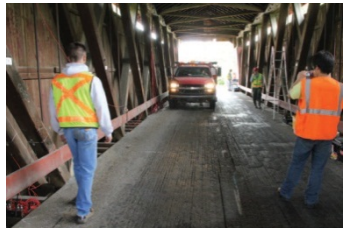
- Corrosion of Fasteners in Wood Treated with Newer Wood Preservatives (**FPL-GTR-220 & FPL-GTR-227**)

- Development of Rehabilitation Techniques to Restore Structural Integrity of Members

- Howe Truss Bridges – Design and Performance

- Evaluating Fire Damaged Components of Historic Covered Bridges

- Use of Laser Scanning Technology to Obtain As-built Records





RD&T Funded Studies

- Species Identification and Field-Grading
- Development of Best Practices Guide on Security of Historic Bridges (**FPL-GTR-223**)
- Use of Embedded Sensors to Measure In-situ Wood Moisture of Load-carrying Members
- Evaluating Naturally Durable Wood Species for Repair and Rehabilitation of Above Ground Components (**FPL-GTR-224**)
- Preservation Guidelines
- HAER Book on Covered Bridges
- Guide for In-Place Preservative Treatment of Covered Bridges (**FPL-GTR-205**)
- Advanced Field Evaluation Tools for Condition Assessment of Wood Members in Covered Bridges

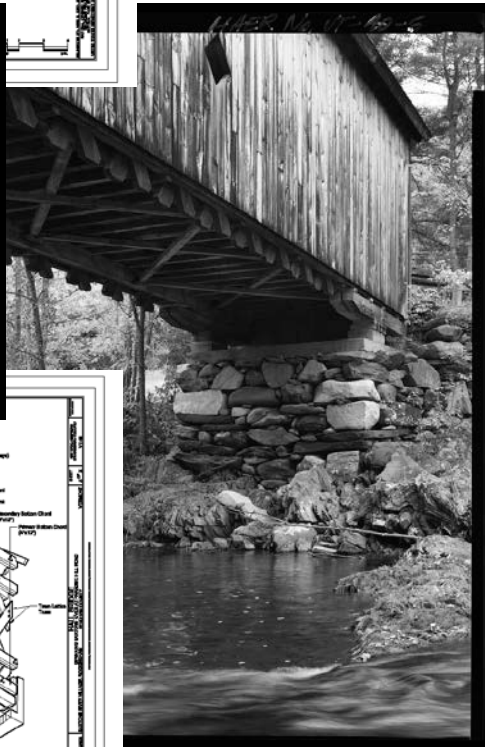
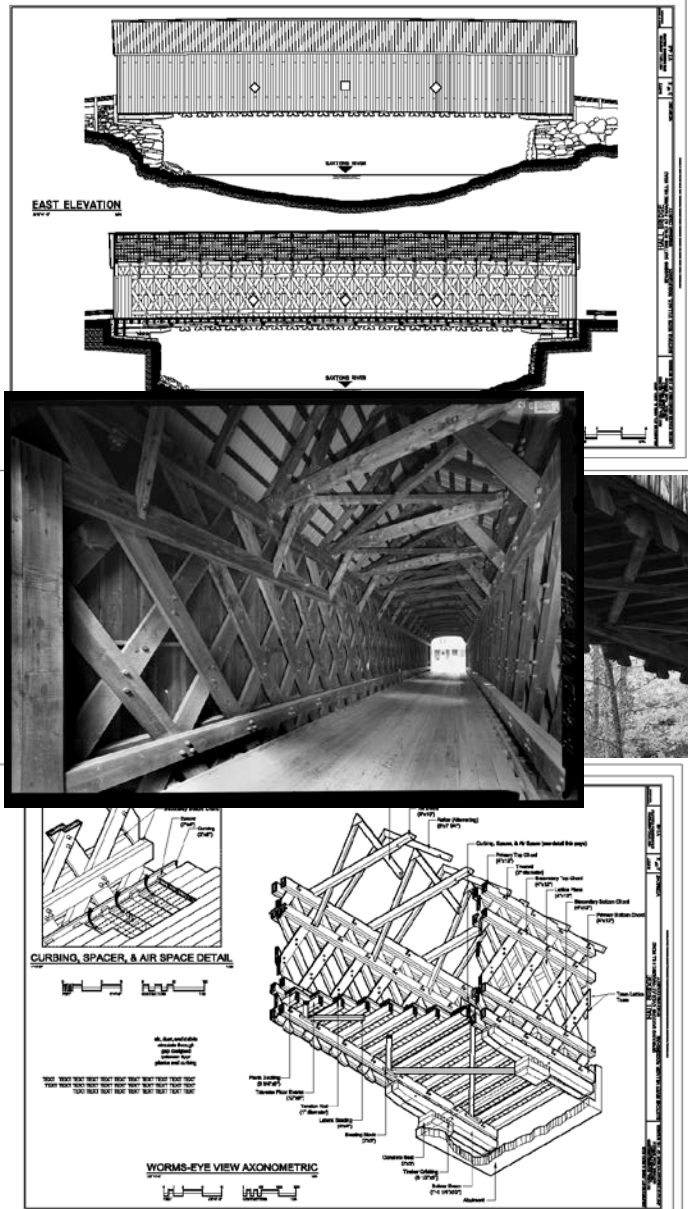




RD&T – Funded Studies

• HAER Covered Bridge Documentation (95 bridges)

- Measured drawings, historical reports and large format photographs
- Library of Congress - <http://www.loc.gov/pictures/collection/hh/>



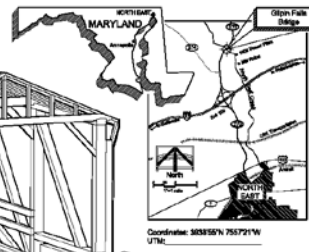
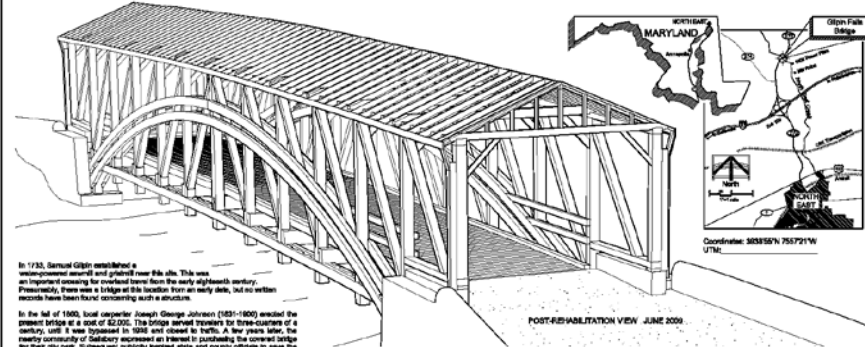
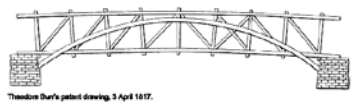
Saxton River - Hall Bridge (Town) HAER VT-40

TURNER-FAIRBANK HIGHWAY RESEARCH CENTER



Gilpin Falls Covered Bridge

North East, Maryland
Spanning North East Creek
Burr Arch, 1866



In 1733, Samuel Gilpin established a well-regarded sawmill and gristmill near this site. This was an important crossing for overland travel from the early eighteenth century. Presumably, there were a bridge at this location from an early date, but no written records have been found concerning such a structure.

In the fall of 1866, local carpenter Joseph George Johnson (1831-1900) erected the present bridge at a cost of \$2,000. The bridge served travelers for three-quarters of a century, until it was bypassed in 1938 and closed to traffic. A few years later, the nearby community of Calverton expressed an interest in purchasing the covered bridge for their city park. Subsequent policy reached state and county officials to save the structure as a local landmark and tourist attraction. Yet, while the bridge remained intact, the money was available to maintain it.

After the bridge's roof collapsed in 1968, the Historical Society of Cecil County and the State Roads Commission of Maryland rehabilitated the span. The Historical Society of Cecil County and the State Roads Commission of Maryland hired Harry C. Lindholm & Son of Newark, Delaware, to rehabilitate the span at a cost of \$11,000. It was reopened in 1971 following several months of restoration and repair in 1969. The project was more by time and design, the bridge underwent an extensive rehabilitation project during 2008-2010. Financed, in part, by the Federal Highway Administration, the Andrews of Hanes and Bridges of New England, working as a sub-contractor for Highway Construction Inc, led the rehabilitation work.

Gilpin Falls Bridge is a good example of a Burr design patented in 1808 and 1817 by Thosmas Burr (1771-1822) of Phoenixville, It features a horizontal-chord, multiple-baypost Burr truss with bridge arches. The end and floor joists are an integral unit in carrying loads. A major advantage of the design was that it allowed for low headroom under the arches. The Burr truss remained a reliable bridge design throughout the nineteenth century and was particularly popular for large-span railroad and highway bridges. Thousands of such structures were erected.

Gilpin Falls Bridge is one of more than 300 extant Burr truss covered bridges in the United States. At 118 feet, it is the longest of six extant covered bridges in the State of Maryland. It was listed on the National Register of Historic Places in December 2008.

The National Covered Bridges Restoring Project is part of the Historic American Engineering Record (HAER), a large-scale program to document historically significant engineering and industrial works in the United States. HAER is a division of the National Park Service in the U.S. Department of the Interior. The Federal Highway Administration funded the project. The documentation was completed under the general direction of Richard O'Connor, Chief of Heritage Documentation Programs and Christopher J. Manning, Project Leader HAER. The field team consisted of Amy E. Kuhl, Field Supervisor, HAER; Dorely M. Rowley, Archivist Intern; Jeremy T. Adams, Archivist Intern and Chris Smith, COASIS Intern. The historical report was researched and written by Lois Bennett. The top-down photography was produced by Derek Aasen, University of Oklahoma, and Joel Lewis, HAER Photographer.



Gilpin Falls Bridge (Burr Arch Truss) – HAER MD-174



World Guide to U.S. Covered Bridges

General Measurements Descriptions IDs Events Locations

Number of Lanes: 0
Spans: 1
Spans Comment: 1
Length: 207 ft
Length is Estimated?: no
Length at Clear Span: 0 ft
Length at Truss: 0 ft
Length at Housing: 0 ft
Height: 0 ft
Width at Clear Span: 0 ft
Width at Truss: 0 ft
Width at Housing: 0 ft

Bridge Name: World Guide Number:

State: ALL Truss Type:

County: ALL Status: Existing Lost All

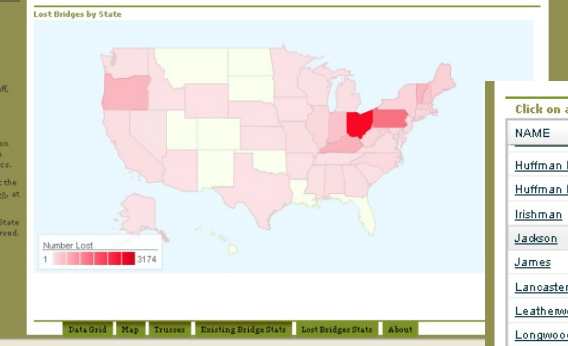
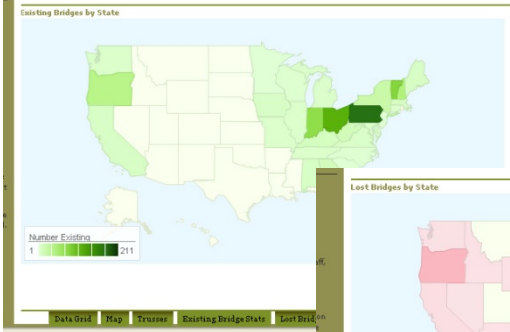
Year Built:

Listed on National Register of Historic Places

Click on a row for detailed information on a bridge

NAME	OTHER NAME	WORLD GUIDE NO.	STATE	COUNTY
Huffman Mill	-	14-74-01	Indiana	
Huffman Mill	-	14-84-01	Indiana	
Irishman	Fowler Park	14-81-28	Indiana	
Jackson	Rockport/Wrights Mill	14-40-02	Indiana	
James	-	14-08-02	Indiana	
Lancaster	Beard	14-21-01	Indiana	
Leathewood Station	-	14-81-20	Indiana	
Longwood	-	14-81-32	Indiana	
Mansfield	-	14-81-16	Indiana	
Marshall	-	14-81-13	Indiana	
McAllister	-	14-26-04	Indiana	
Mecca	-	14-81-26	Indiana	
Medora	Klondyke/Marion	-	Indiana	
Melcher	-	-	Indiana	
Mill Creek	-	-	Indiana	

Map of Existing Bridges from Query



Click on a row for detailed information

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Huffman Mill	-	14-74-01	Indiana	
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Mecca	-	14-81-26	Indiana	
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Melcher	-	-	Indiana	
Mill Creek	-	-	Indiana	

World Guide to U.S. Covered Bridges

General Measurements Descriptions IDs Events Locations

History

Event	Year	Year is Estimated?	Comment on Date	Comment on Event
Built	1941	Yes		

This data grid displays a record of known events related to the selected bridge. Events may include but are not limited to actions such as Built, Damaged, Repaired, Moved, etc. YEAR IS ESTIMATE notes whether or not the given year is a rough estimate. In many cases, the exact year of an event is unknown. A more liberal description of the time-period may be listed under COMMENT ON DATE. For example, a bridge built around 1940 may be listed under this field as "1940", "1940*", or even "around 1940-41". COMMENT ON EVENT may provide a short description of the listed event.

Indiana Bridges by Year

World Guide to U.S. Covered Bridges

General Measurements Descriptions IDs Events Locations

Locations

State	County	Town	Crossing	Direction	Note
Indiana	Pike	Penn	Legal Creek	On I-49 on CR	

Latitude: 39.680076
Longitude: -87.29249
[Get directions!](#)

This data grid displays a list of known locations for the selected bridge. A bridge may have multiple listed locations if the bridge was relocated, or if it spans two political boundaries (such as states or counties).



About the Slider Tabs

Map -- The map displays a marker representing the location of the chosen bridge. The "hybrid" or "satellite" view allows the user to zoom to a larger scale for greater detail on the ground.

Street View -- When available, this panel will display a Google Street View panoramic image at or within close proximity of the selected bridge. Users may pan and zoom along the image. In many cases, detailed images of the inside of bridges are available. When a nearby Street View is not available, this panel does not display any content.

Panorama -- Panorama is an image service that allows the public to upload geo-tagged photographs for display on web maps and in Google Earth. This panel will display photos that were taken within a certain distance from the selected, existing bridge and display them in a slide show. In some cases, Panorama will display photos that were taken close to the bridge but are not necessarily ones that contain the bridge as a subject. This is due to inconsistencies in the way photos have been tagged. When no photos are available, this panel does not display any content.

Truss Type Chart -- This tab displays an interactive pie chart showing the various truss types of EXISTING bridges from the same state as the currently selected bridge. While it is possible that the selected bridge may cross state boundaries or have been moved between states, the panel currently selects just one related state for statistical display.

Year Chart -- This is an interactive line graph detailing the number of covered bridges built and lost over time for the same state as the currently selected bridge. State for any one year should be considered approximate values. For example, a bridge listed as built "circa 1940" would be counted as built in 1940, even though the actual year may have fallen later in that decade.

*The Map, Street View, and Panorama tabs only display data for existing bridges with known locations.

RD&T - Funded Studies

- World Guide to Covered Bridges in the US Database/GIS/Website

Located at www.woodcenter.org



RD&T – Funded Studies

- National Historic Landmark Theme Study
- Smithsonian Traveling Exhibition on Covered Bridges
- National Covered Bridge Conferences
 - Burlington, Vermont – June 5-7, 2003
 - Dayton, Ohio – June 5-8, 2013



Smithsonian Exhibit



Summary

- Preservation/Restoration/Rehabilitation
- Over 200 covered bridges in 24 states have been funded for preservation, restoration or rehabilitation
- RD&T
 - Over 50 projects have been funded
 - A number of studies have been completed
 - Significant number of studies are underway

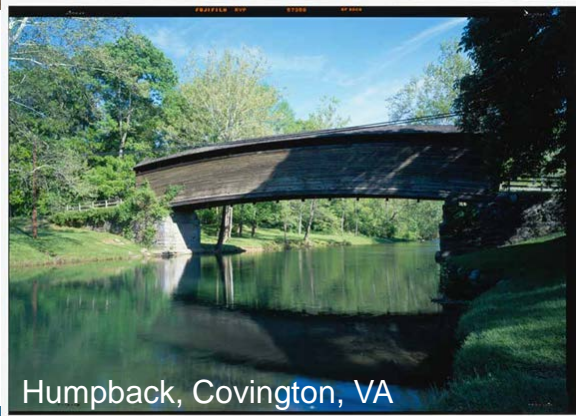




Thank you



Portland Mills, Parke County, IN



Humpback, Covington, VA

