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

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 (205 ft)
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

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 [Link](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

Saxton River - Hall Bridge (Town) HAER VT-40
Gilpin Falls Covered Bridge
North East, Maryland
Spanning North East Creek
Burr Arch, 1880

Gilpin Falls Bridge (Burr Arch Truss) – HAER MD-174
**RD&T – Funded Studies**

- **World Guide to Covered Bridges** in the US Database/GIS/Website
  - Located at [www.woodcenter.org](http://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
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