

## **Saving The Portland Mills Bridge Parke County #155 - Why It Was Saved...**

Judith G. Congdon, P.E.

President

Congdon Engineering Associates, Inc.

Referred to as the covered bridge capital of the world, at one time as many as 57 covered bridges graced the landscape of Parke County, Indiana. With 32 of those bridges remaining, the county still has more covered bridges than any other local jurisdiction.

But time, vandalism and economic shortfalls have not stopped taking their toll. In just the past eleven years, while the Portland Mills Bridge underwent a major rehabilitation and the Neet Bridge was repaired and bypassed, two other covered bridges in Parke County were lost. The Coal Creek Bridge at Lodi was burned down in the 1992, and the Jessup Bridge east of Rockville, recently closed, and seriously leaning, was lost to heavy winds in May of 1989.

While lack of funding in a rural county may have contributed to the lack of maintenance and loss of some of the covered bridges, that same lack of funding has probably also contributed to many of the covered bridges not having been replaced with newer structures. Of the 32 remaining covered bridges in Parke County, 21 are still in use as part of the local highway system.

As the number of covered bridges has declined throughout the county, interest in them has increased, particularly in recent years, spurred by renewed interest in historical preservation, the current romanticism with the past, and a recent book and movie that had something to do with photographing a covered bridge in Iowa. Interest in Parke County's covered bridges has also increased significantly over the last decade or so. The Parke County Covered Bridge Festival, first held in 1957 and lasting ten days each October, currently draws approximately two million visitors annually. This, plus the additional quarter of a million visitors to the covered bridges in non-peak traffic times, has a \$29 million impact annually on Parke County's economy according to the most recent study for the Indiana Division of Tourism. The social and economic effects of all of the remaining covered bridges in Parke County can no longer be questioned.

The second oldest remaining bridge in Parke County, The Portland Mills bridge was built in 1856 near the site of a grain mill in Portland Mills. Depending on which reference is taken as more accurate, it was built by either Aaron or Henry Wolf, father and son bridge builders and county residents. Although, the more recently published references give credit to Henry Wolf, when the 1996 reconstruction was complete, an old photograph was found showing the name Aaron Wolf on the portal, and the renovated bridge now bears his name.



In 1960, when the Mansfield Reservoir, Raccoon Lake, was flooded, the 131 ft. long Portland Mills Bridge was moved approximately seven miles to the northwest to replace the shorter Dooley Station covered bridge that had been burned. It remained in service at its new location until 1982, when the deterioration due to decades of weather damage and vandalism resulted in a partial collapse, closing it to traffic.

Lack of funding again played a major role as the Portland Mills bridge remained closed and deteriorating, until hope for its survival was renewed with the passage of the Intermodal Surface Transportation Efficiency Act of 1991. Transportation Enhancement Funds became available for 80 percent of the design and construction for this bridge rehabilitation. Agreements were finally in place in early 1994 and work began. Then the west end of the bridge collapsed the rest of the way. Fortunately, the additional damage was not as bad as it looked and work proceeded.

Rehabilitation included replacing the bridge's existing floor beams, stringers, and deck planks with a blend of the originally used heavy oak timbers and contemporary materials such as glue laminated floor beams and stringers to increase the load carrying capacity of the bridge to 13 tons. Portions of the upper and lower chords, verticals, diagonals and arch rings of the burr arch thru truss were also replaced with solid oak timbers. Original mortise and tendon joints were reused or reproduced with much of the construction being done by hand, using original construction techniques, while the structure was shored in place.

Damaged and rotted portions of members were cut out and removed with new sections being cut and fitted into place. Each structural member was carefully measured and examined to determine its fitness for reuse, or its size, and cost of replacement. Roofing timbers were replaced where required and a new cedar shake roof installed. Undamaged portions of the original siding were salvaged and reused on the end portals with the remaining siding being replaced with new timber. Since more complete fire prevention options such as sprinkling were not within the County's budget, a clear fire protective coating was applied to all portions of the bridge.



Minimal approach work was incorporated into this project, including compacted aggregate and reinforced concrete approaches to the new timber bridge deck, and new timber approach rails.

Section 106 documentation was prepared for the Portland Mills Bridge rehabilitation, and work on the structure was coordinated with the Indiana Department of Natural Resources Historic Preservation Office, and the Advisory Council on Historic Preservation.

Reconstruction was completed in the fall of 1996 at a cost of \$353,000. The bridge is still a one lane structure with a 14'-10" clear roadway and a 12'-8" vertical clearance. The year 2015 projected average daily traffic is 80 vehicles per day, although this probably increases during the bridge festival, even though this structure is not on one of the several mapped tour routes. A two lane replacement structure using federal funds and minimal approach work was estimated at \$575,000, including approximately \$300,000 for approach work since replacement with federal funds would require additional alignment changes to meet minimum standards.



Particularly in light of the extremely poor condition of the Portland Mills Bridge prior to restoration, this project has shown that restoration can be not only possible, but feasible when a significant historic resource is threatened. While it might not be realistic to assume that all covered bridges, at all locations, and in differing states of repair, should automatically be saved, the significance of Parke County's covered bridges has been established, and there is little question concerning saving the remaining 32.

Due in part to the almost statewide newspaper and television news coverage of this preservation effort, including a cover feature and five page article in *Construction Digest*, attention has been focused on preservation efforts, as well as the significant resource Parke County has in its covered bridges.

This publicity probably helped add to the annual October crowds in the County and also helped provide impetus for fund raising efforts, as well as legislative changes to increase county funds, to help restore and preserve the covered bridges of Parke County.