

County Preserves its Heritage with Bridge Rehabilitation

OVERVIEW

The project painted and rehabilitated the historic Purdon Bridge, a critical bridge crossing on Purdon Road at the South Fork of the Yuba River.

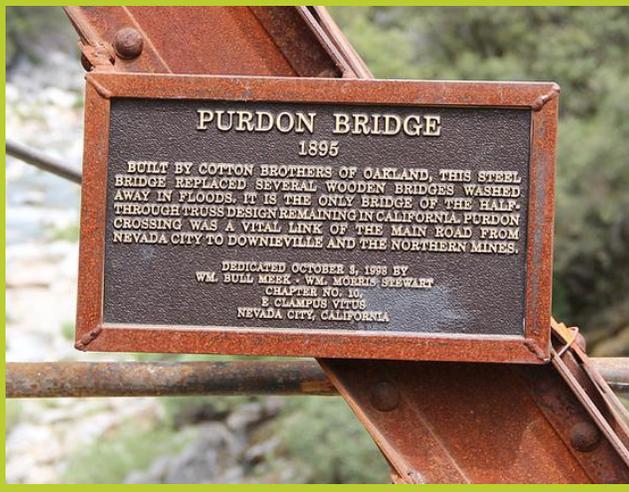
CHALLENGE

Built by the Cotton brothers of Oakland in 1895, the Purdon Bridge (located on Purdon Road and the South Fork of the Yuba River) is the oldest of the County's 42 maintained bridges. It is the only known bridge of the unique half-through truss design remaining in California, and is eligible for the National Register of Historic Places. Many decades ago, the bridge provided a vital link in the main road from Nevada City to Downieville and the Northern Mines. Today, the bridge provides a link to popular recreational destinations along the Yuba River and trails within the South Yuba River State Park.

For decades Caltrans has identified the bridge as Structurally Deficient, and the bridge Sufficiency Rating – a method of rating a bridge's overall fitness – was one of the lowest in the County. As a result the bridge was initially considered for replacement by County Engineers. Typically, similarly structurally deficient bridges in the County are replaced with modern concrete or steel bridges. However, this bridge represents an important part of Nevada County's historic heritage. In 1895 it was a feat of engineering to construct a bridge the size and scope of the Purdon Bridge in the surrounding rugged terrain and with limited accessibility. The bridge is a testament to human ingenuity, and the potential loss of this structure was the loss of a bit of our history. A bridge replacement also presented a myriad of environmental, engineering, economic, social and constructability challenges to the County and was ultimately unpopular to our residents and elected officials.



The Purdon Road Bridge at South Yuba River was constructed in 1895 and provides access to the Yuba River and surrounding South Yuba River State Park. It is the oldest bridge in operation today in the County



A plaque on the bridge commemorates the bridge's historical significance. The bridge was originally constructed to replace several wooden bridges washed away in floods and is the only bridge of its unique design remaining in California

PROJECT CONTACT

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SOLUTION

County staff determined that comprehensive bridge rehabilitation would be the best approach to retain the bridge's natural beauty and charm and improve the bridge's ability to provide safe access for many decades to come. The project included repairs to damaged steel frames and rods and repairs or replacements of damaged rivets. Once the metal work was completed, the bridge underwent a comprehensive abrasive blasting and repainting to restore the bridge back to its original black paint color.

BUDGET

The project was federally funded under the Highway Bridge Program (HBP). In an effort to fully utilize the available budget and maximize the amount of work awarded within the project budget, the County employed a unique method of bidding called Add Alternate Bidding. This methodology proved useful, as the County was able to identify 21 additional bridge rehabilitation items that otherwise could not have been included in the project. As a result the County's Board of Supervisors approved a bridge construction budget of \$621,000. Final construction costs were approximately \$569,000, and the total construction change orders on the project were less than 1% of the total project budget.



The bridge was completely enveloped in scaffolding so the Contractor could repair damaged structural bridge members. The bridge was then wrapped in a PVC tarp to protect the river and environment during the bridge painting process

COST SAVINGS

While no detailed construction cost estimates were prepared for a potential bridge replacement, replacement costs for similar bridges in the County are estimated at more than three million dollars.

RESULTS

Ultimately the County will be able to save and restore this historically significant bridge to its original condition at a fraction of the cost to replace the bridge. The bridge will now provides safe access to residents and visitors for many decades to come.