

ONEOTA DRIVE BRIDGE REPLACEMENT

DECORAH, IOWA



PROJECT DESCRIPTION

McClure provided preliminary and final bridge design, hydraulic analysis, geotechnical design, and construction inspection services for replacement of an existing pony truss over a tributary to the Upper Iowa River in Decorah, Iowa. The new 100'-10" x 27'-0" single-span prestressed concrete beam bridge was stage-constructed in order to maintain vehicular and pedestrian access to a business, private residence, an adjacent campground and the Trout Run Trail loop. Aesthetics were incorporated via ornamental metal railings and a concrete form liner that provides a natural limestone appearance to the barrier and wings. The original Concept Statement for the project proposed construction of the new bridge on the same alignment as the existing, which would require a temporary causeway to be constructed in order to maintain accessibility across the drainage channel. The concrete lined drainage channel is prone to high stream velocities and flash flooding leading to an increased risk for erosion or complete loss of the causeway. In order to mitigate this risk, McClure shifted the horizontal alignment such that the replacement bridge could be stage-constructed, access across the channel maintained, and the need for a causeway eliminated. McClure also worked with the Iowa DOT to correct a discrepancy in the AADT being reported at the bridge location, which was instrumental in minimizing the required bridge width and allowing for a shared-use structure with no median separation.

PROJECT HIGHLIGHTS:

- The project was completed using SWAP funding through the Iowa DOT.
- Hydraulic analysis, preliminary and final bridge design (including alternatives analysis), and geotechnical design were all completed on an accelerated schedule resulting in 100% Unapproved Plans (Check Plans) being delivered in just 5 months.
- Staged construction of the replacement bridge not only allowed for continued access across the channel throughout construction, but also eliminated all risk associated with potential loss of a temporary causeway due to erosion from high stream velocities and flash flooding.
- McClure identified the traffic count discrepancy early in the design process and worked directly with the Iowa DOT to rectify the issue, resulting in significant savings to the City.

REFERENCE

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COMPLETION DATE

May 2019

CONSTRUCTION COST

\$890,000