



PROJECT PROFILE

Lake Kathleen Dam Removal



CHALLENGE: Rising lake levels during storm events

SOLUTION: Modified the cofferdam concept using siphons to draw down the lake prior to construction

OWNER: Conservation Resource Alliance

CONTRACT AMOUNT: \$1,233,320

DESIGN ENGINEER: Spicer Group, Inc.

ENGINEER CONTACT: Rich Kathrens 989-224-355

LOCATION: Brutus, Michigan

DATE STARTED: August 1, 2018

DATE COMPLETED: October 18, 2018

SELF-PERFORMED: 90%

PARTNERS: Gosling Czubak, Machin Engineering, Inc., G&J Site Solutions, Give 'Em A Break

BY THE NUMBERS

Sheet Piling: 2,600 square feet

Erosion control devices: 3,585 feet

Turbidity curtain: 156 feet

Cofferdam: 5,288 feet

Slope Restoration: 19,268 square yards

Curb & Gutter: 5,889 feet

36 inch culvert: 108 feet

72 inch culvert: 44 feet

The Maple River in northern Michigan hasn't been in its natural flowing state for a little over 100 years. But in recent years, the Conservation Resource Alliance (CRA) in Traverse City has been leading the way to restore the Maple River to a nature flow pattern.

The last large blockage was the Lake Kathleen Dam in Pellston, MI and after a year of planning, the CRA had a finalized plan in 2017. Team Elmer's took on the project and started in early August of 2018.

Weather is often an issue, and Team Elmer's works to find solutions to keep working through it. The Lake Kathleen dam removal project tested Team Elmer's.

The drainage area feeding into Lake Kathleen was a significant size in relation to the storage capacity of the lake, which posed a major risk of lake levels rising during storm events and overtopping our temporary cofferdam. The area received eight inches of rain in one week, causing the water levels to rise five feet.

TEAM ELMER'S PROJECT PROFILE | Lake Kathleen Dam Removal



The project team modified the cofferdam concept to allow for the existing spillway to act as an emergency overflow during storms. Team Elmer's also used siphons to initially draw down the lake prior to construction of the cofferdam, which not only gained additional storage capacity for storm events, but also reduced the cofferdam spillway drop from 14 feet to seven feet. The six 24" HDPE siphons were capable of moving 80,000 gallons of water per minute.

These solutions allowed Team Elmer's to safely construct the new river channel and greatly reduced the risk of failure to the cofferdam system. With the high risk of flooding out of the mitigated way, Team Elmer's could start on removal.

Team Elmer's brought in a long reach excavator specifically to construct the river channel and cross vanes, and clean out the upstream sediment trap to prevent additional sediment from moving downstream. Finally, Team Elmer's crane division came in to set the new timber bridge over the Maple River, which is now free to flow naturally. The timber bridge was installed at two track bridge and 375 square yards of Riprap were placed and 9000 square yards of restoration was completed.



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