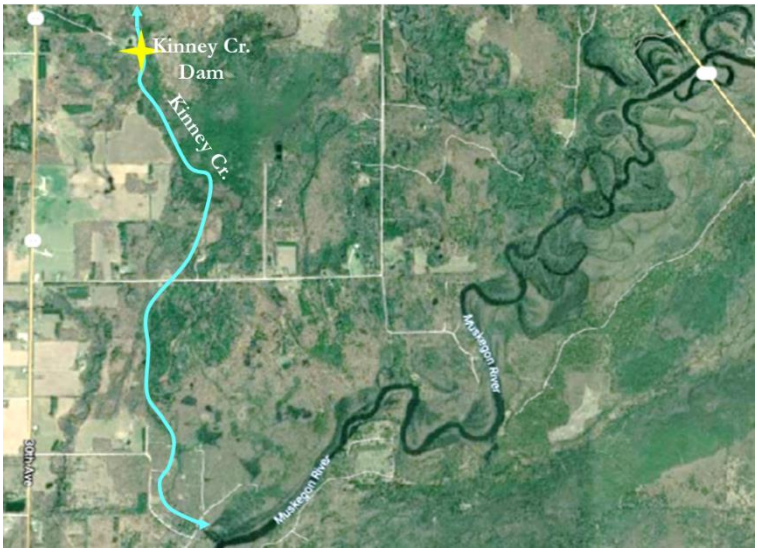
Kinney Creek Dam Removal Project
Muskegon River Watershed

Introduction and Background

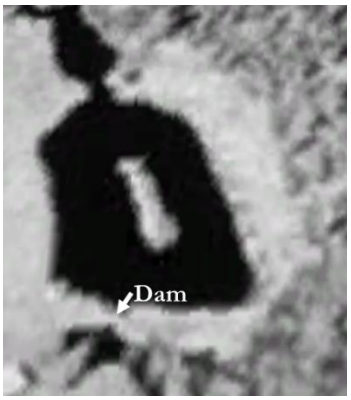
There are nearly 100 dams in the Muskegon River watershed today, many of which no longer serve a useful purpose. The Muskegon River Watershed Assembly (MRWA) has long recognized that their removal would help to restore natural stream functions and processes, and overall watershed health. In 2020, supported by a grant from the Fremont Area Community Foundation, MRWA began a project to identify an initial group of dam removal candidates that would be supported by their local communities and develop initial design removal plans and cost estimates for those sites.

Kinney Creek Dam



Kinney Creek is a tributary of the Muskegon River that originates in a wetland area near the junction of M-115 and M-66. It travels about 8 miles to its confluence with the Muskegon. Historic fish surveys show the stream supports a healthy brook and brown trout population.

About midway along the stream's length, a private landowner constructed a dam in the late 1950s to create a small pond with an island where the owner's children canoed and camped. Over the ensuing decades the pond has become heavily silted and is no longer used. The dam impairs fish movement up and down Kinney Cr; and though the 1-acre pond is small, the resulting solar absorption warms the stream, adversely affecting fish habitat quality downstream. The current owner wants to see the dam removed and the stream properly restored.



Kinney Cr dam in 1998

Kinney Cr dam in 2018

The upstream pond area, with the dam to the right

The Kinney Cr dam as seen from downstream

Ecological Impacts

The existing dam height, which is controlled by 'stop log' installations in two 4-foot wide bays, is approximately 2 feet. While this creates a relatively low head, it is still sufficient to cause a notable temperature increase and block fish movement. During August 2020, when daytime temperatures were 80°F plus, stream temperature monitoring stations found an increase of 3°F in Kinney Cr. between the location upstream of the pond and downstream of the dam. It is during these high temperature periods that fish species like brook and brown trout, are most in need of the cold-water refuge that natural stream chemistry provides.

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Preliminary Restoration Plan

- Plans call for retaining the center support and utility vehicle bridge
- Existing stop logs would be removed individually, allowing several weeks between each removal for stream flow and sediment transport to stabilize
- Following the removal of all stop logs, the stop log slots will be grouted to prevent future use
- Existing downstream wing walls will be removed
- Stream banks will be stabilized, utilizing field stone rip-rap and plantings to prevent erosion
- The site will be periodically monitored by MRWA to ensure that any emerging stream management needs are addressed as needed

Project Partners and Funding

- MRWA will work with State and Federal partners to advance this project
- Funding for this project will be pursued through State, Federal and Private Grant sources