

Hartley Pond Feasibility Study



Introduction

Hartley Pond Feasibility Study is identified as an action item in Hartley Duluth Natural Areas Program Management Plan and Hartley Park Mini-Master Plan

Project Goals

The purpose of the Feasibility Study (FS) is to identify the most effective and efficient alternatives for eliminating negative impacts to Brook Trout and other cold-water resources of Tischer Creek that are caused by warm water discharges from the Hartley Pond. The Hartley Pond FS goals are to:

1. Relax constraints on the ecological and geomorphic functions of Tischer Creek caused by the Hartley Pond dam
2. Preserve and/or increase the historical, recreational, ecological, educational, and aesthetic value of Tischer Creek and the Hartley Nature Center.

This study aims to prepare conceptual-level designs and economic analyses of alternatives for Hartley Dam to aid the City in future planning and decision-making.

Project Team

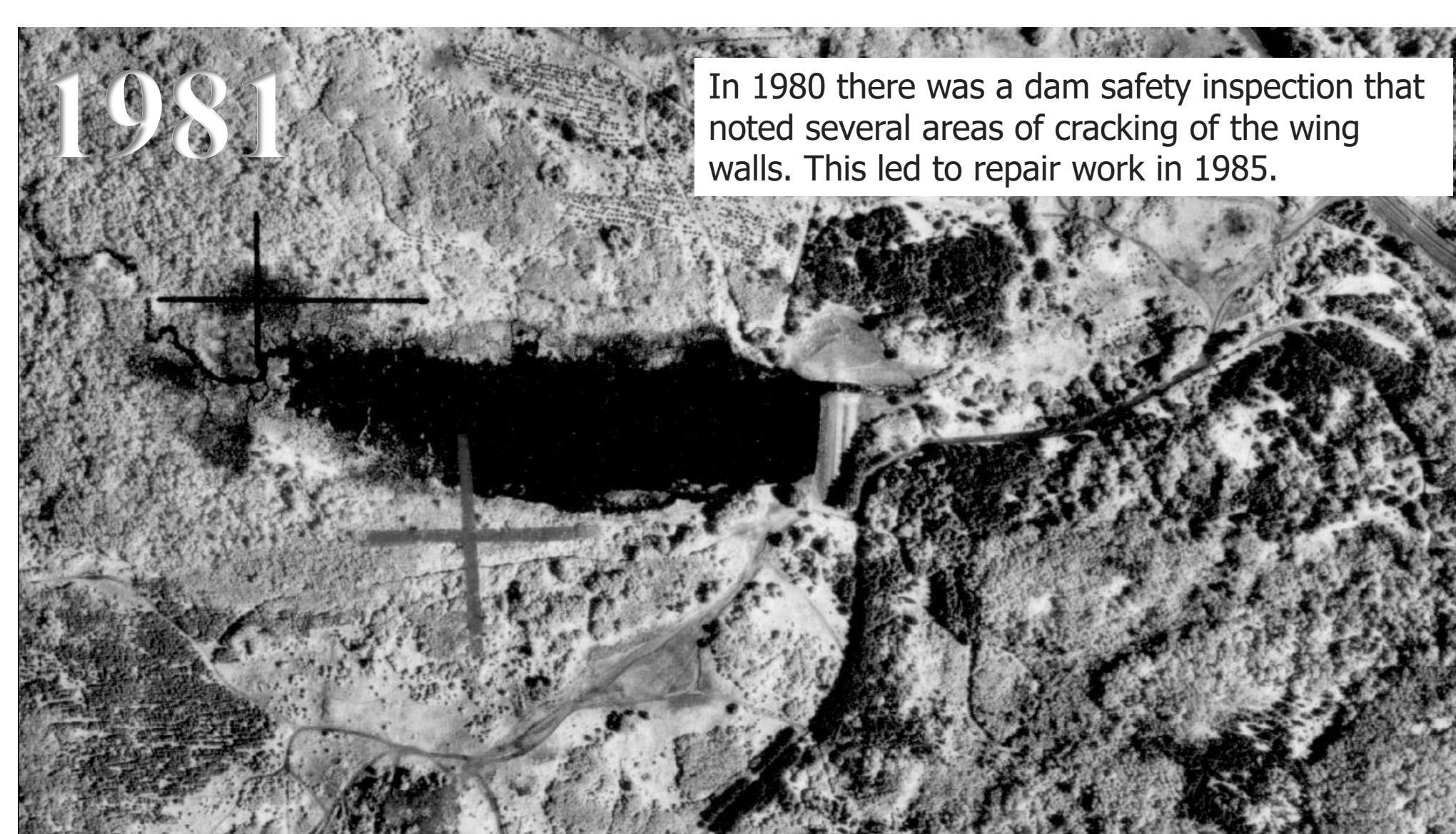
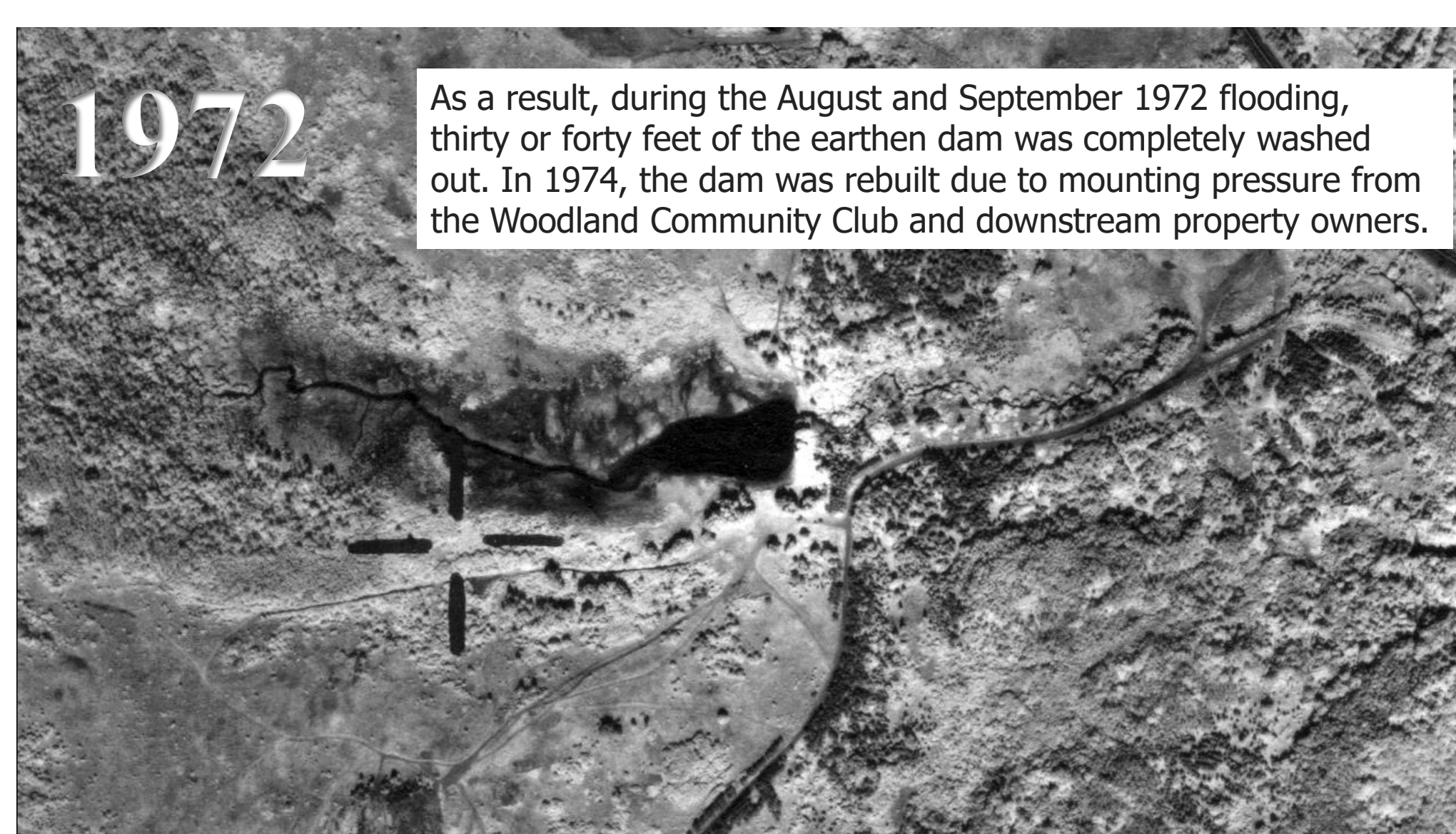
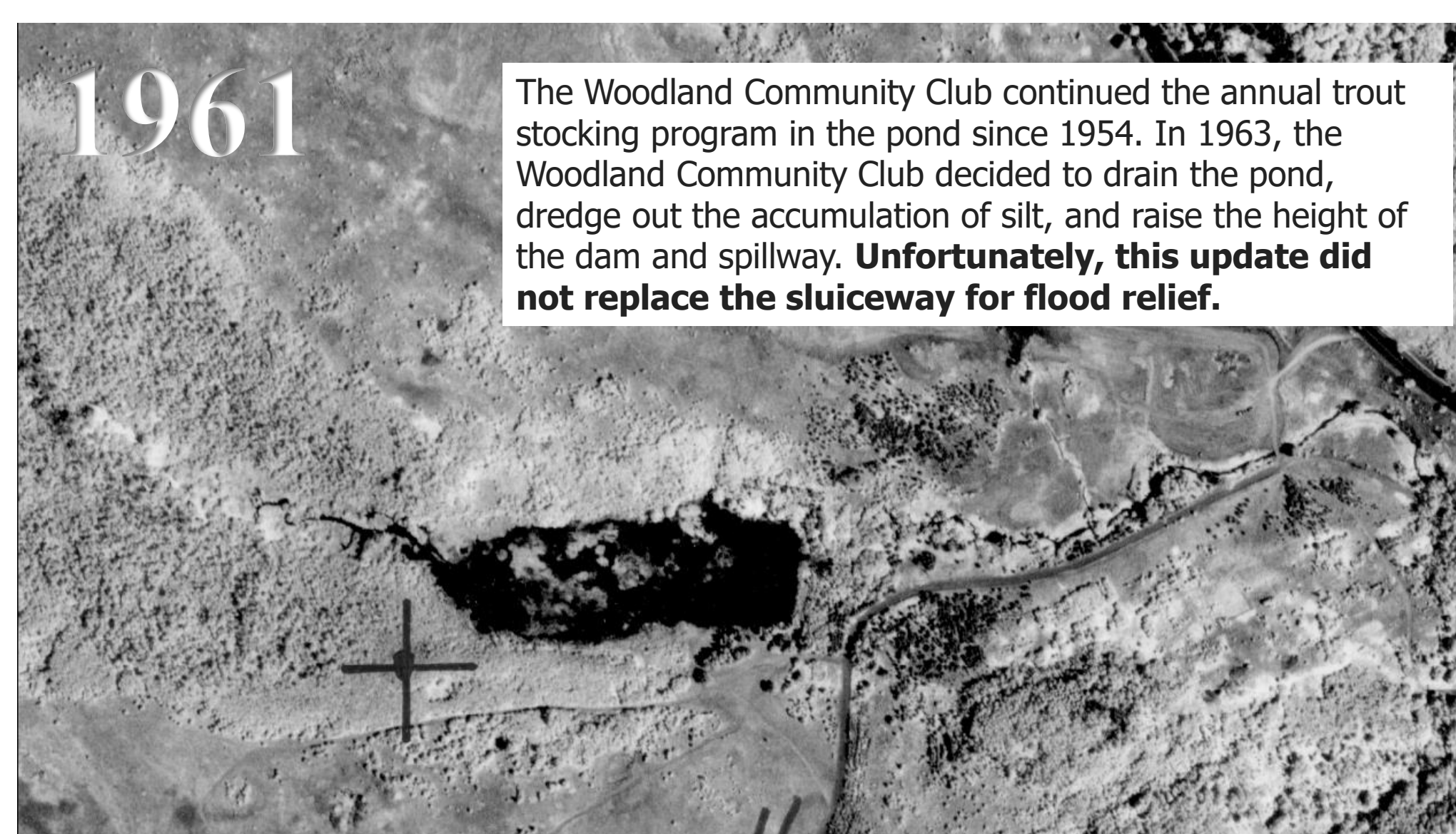
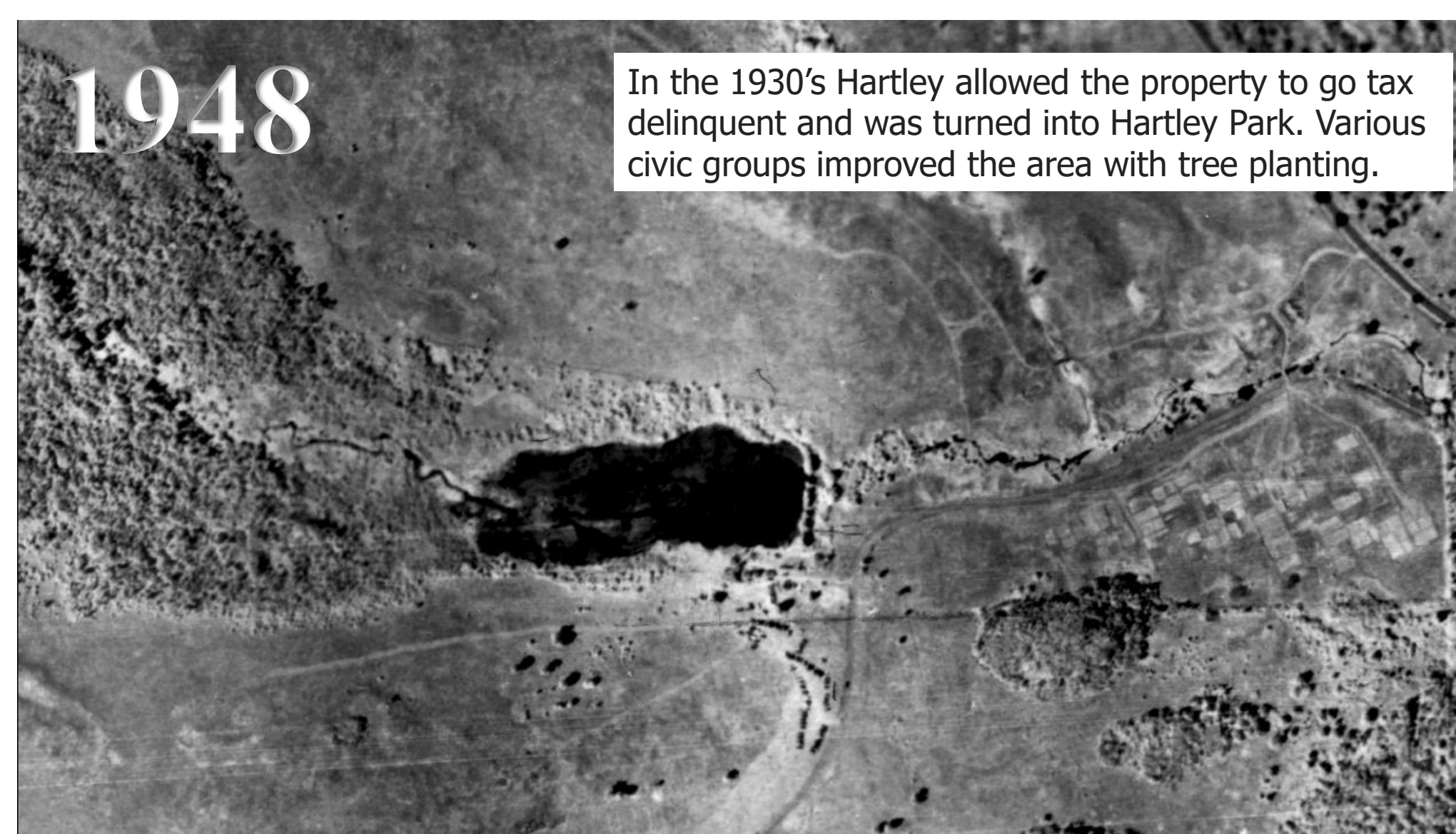
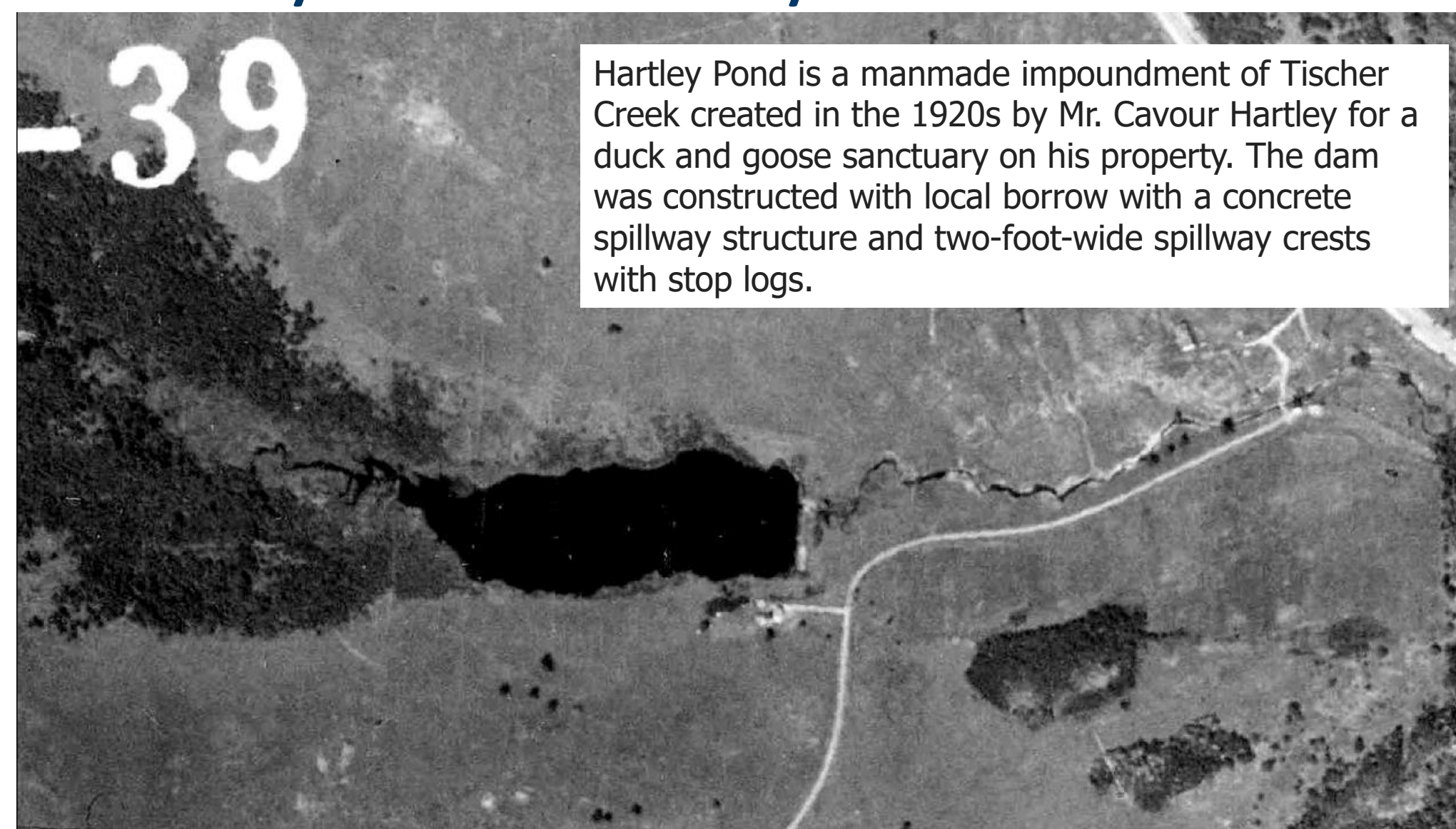
The Feasibility Study presents the evaluation of potential long-term alternative trajectories for Hartley Dam, Hartley Pond and Tischer Creek developed by GEI Consultants, Inc. (GEI). The dam is owned and maintained by the City of Duluth. A Hartley Dam Steering Committee has been established to help guide the process and provide feedback. The steering committee includes members representing the City of Duluth, Hartley Nature Center, the University of Minnesota Duluth, and the Minnesota Department of Natural Resources.



Photo Courtesy of Tim Beaster, South St. Louis SWCD

Participating Partners: Great Lakes Restoration Initiative, Minnesota Department of Natural Resources, City of Duluth, City of Rice Lake, South St. Louis SWCD, St. Louis County, Board of Water & Soil Resources, Minnesota Pollution Control Agency, Duluth Urban Watershed Advisory Committee, 1854 Treaty Authority, United States Environmental Protection Agency, University of Minnesota – Duluth, Natural Resource Research Institution, Minnesota Land Trust, United States Army Corps of Engineers, United States Geological Survey, Sea Grant, Izaak Walton League, Arrowhead Flyfishers, and Hartley Nature Center. Thank You.

Hartley Pond History



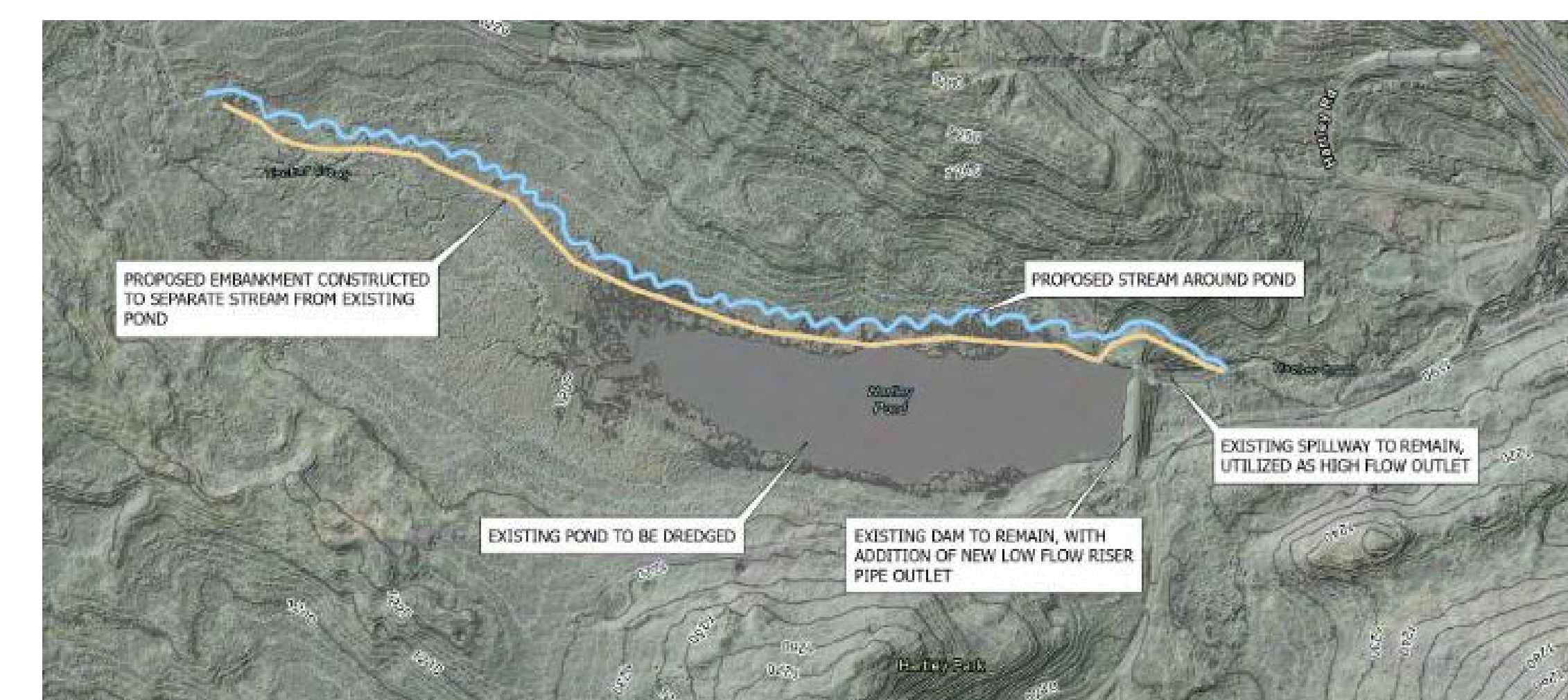
Proposed Alternatives

Alternative #1 – No Action

- Strengths
 - Potential to Mitigate storm peak flows, probably not snowmelt peaks
 - Recreational and educational benefits
- Weaknesses
 - Pond water quality is poor
 - Blocks fish passage
 - Traps sediment, stream stability problem
 - Pond will eventually convert to an emergent wetland
 - Temperature effects
 - Changes natural flow pattern
 - Ongoing maintenance costs
 - Dam safety concerns
- Unknowns
 - Pond water quality long term

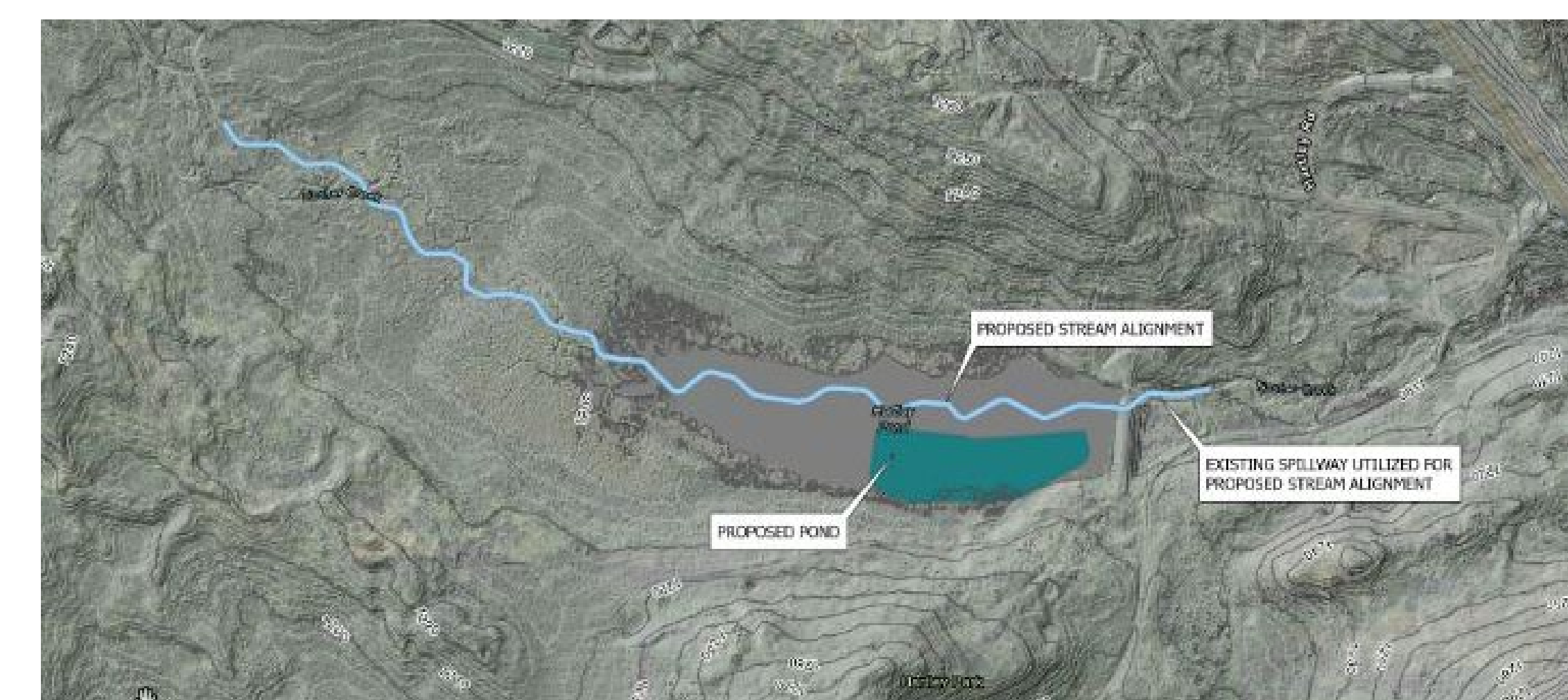
Alternative #2 – Construct rock arch rapids at outfall of dam (Not modeled because of infeasibility due to size)

Alternative #3 – Leave dam in place, route a channel around the dam, and excavate pond to desired depth.



- Strengths
 - Will have stream around pond and mitigate temperature issues
 - Allow for fish passage
 - Retain pond area
 - Keep current dam, modified
 - Potential to mitigate storm flows for downstream effects
 - Recreational and educational benefits
- Weaknesses
 - Maintain Class I dam
 - Design is more complicated due to dam issues
- Unknowns
 - Pond water quality long term, will increase retention time
 - Stream/pond connection

Alternative #4 – Remove or modify existing dam and construct a stream channel in the original stream valley. Excavate an offline pond



- Strengths
 - Remove Class I dam
 - Remove warming effects of pond
 - Construct stream in valley where it used to be
 - Smaller pond dug into water table
 - More straight forward design
 - No dam maintenance
 - Recreational and educational benefits
- Weaknesses
 - Changes to current pond that some in the community use and appreciate
 - Storm flow mitigation effects downstream may not be realized without dam
 - May require EIS for removal of the Pond