

# C2.06 - Canyon Lake Dam Rehabilitation

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**Special Thanks: Ranger Samuel Price and Noah Brock**



## Problem Statement

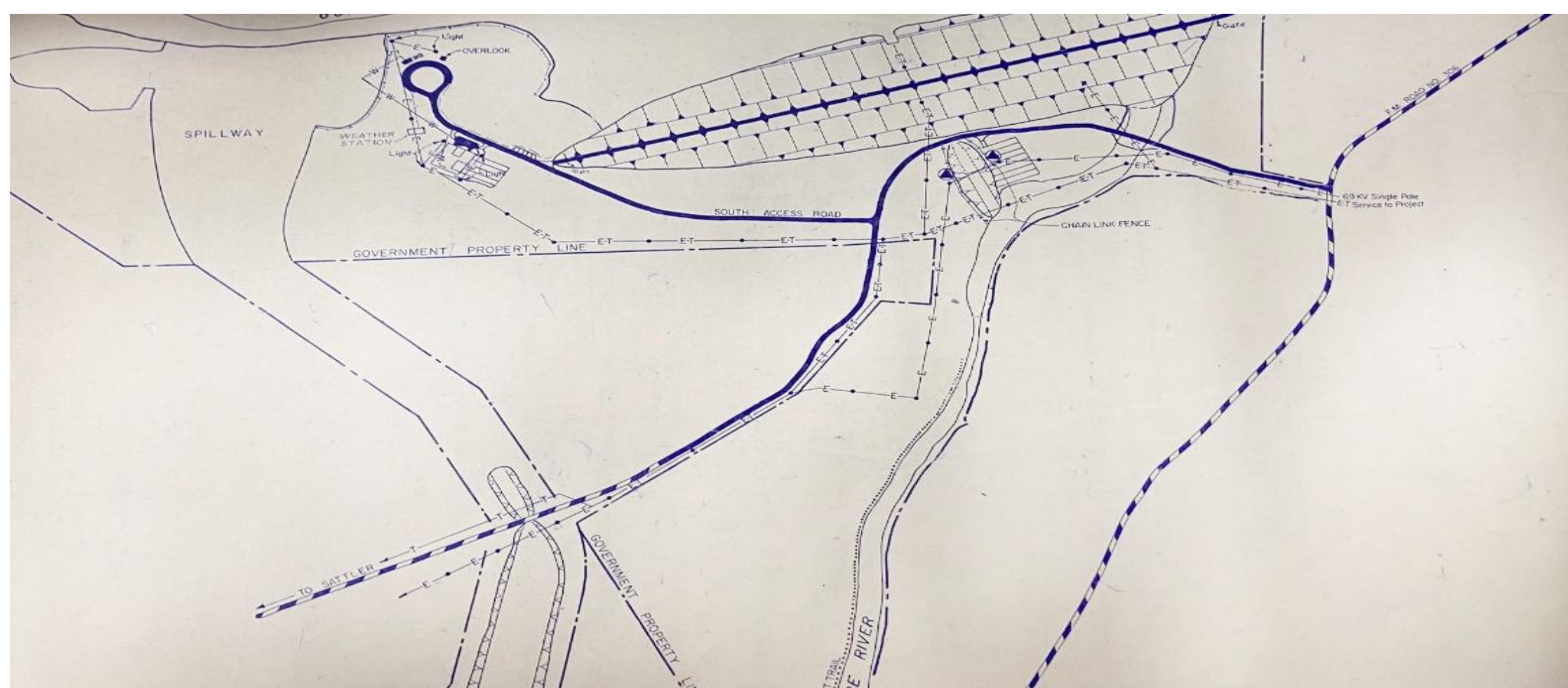
The main purpose of this project is flood control by focusing on the dam's emergency spillway. These improvements will assist the longevity of the aging dam. Project constraints include avoiding geotechnical damage and sustainability.

## Emergency Spillway

**Lowering:** Dynamite lasts were conducted to lower the spillway opening by 3 ft, as to not damage the area's stromatolite layer.

**Sloping opening:** A 20° slope was created to decrease the speed of the flood water.

**Baffles:** Dissipate water's energy, herringbone pattern, and made from lean concrete (110-115pcf).



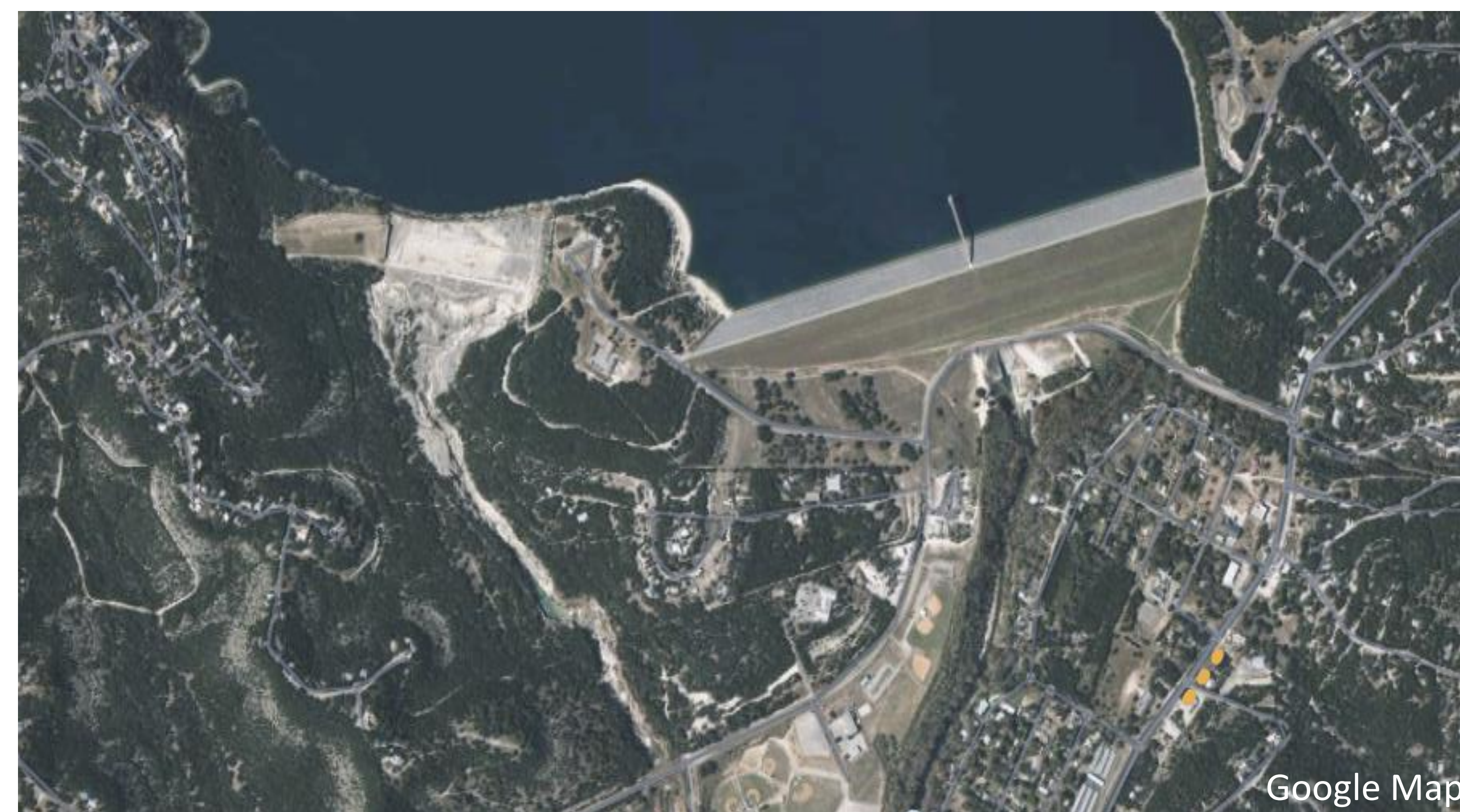
## Retention Ponds

Two retention ponds within the gorge to retain a large volume of water during a mass flood.

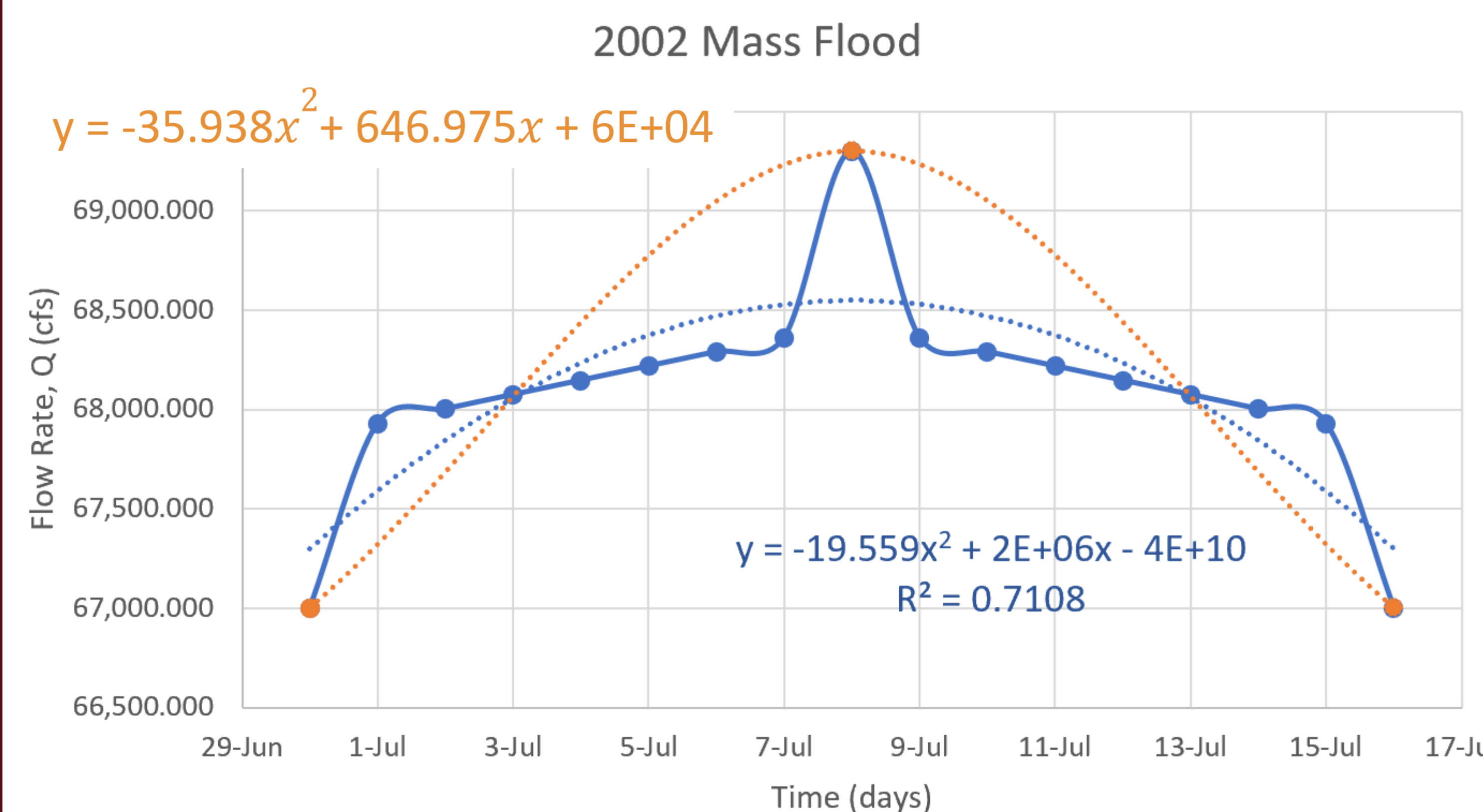
Sloped sides to reduce erosion and debris buildup.

Draining will begin immediately and slowly through a 4 in pipe with an inverted P trap pipe inlet design.

## Aerial View



## Flood Hydrograph



## Sustainability

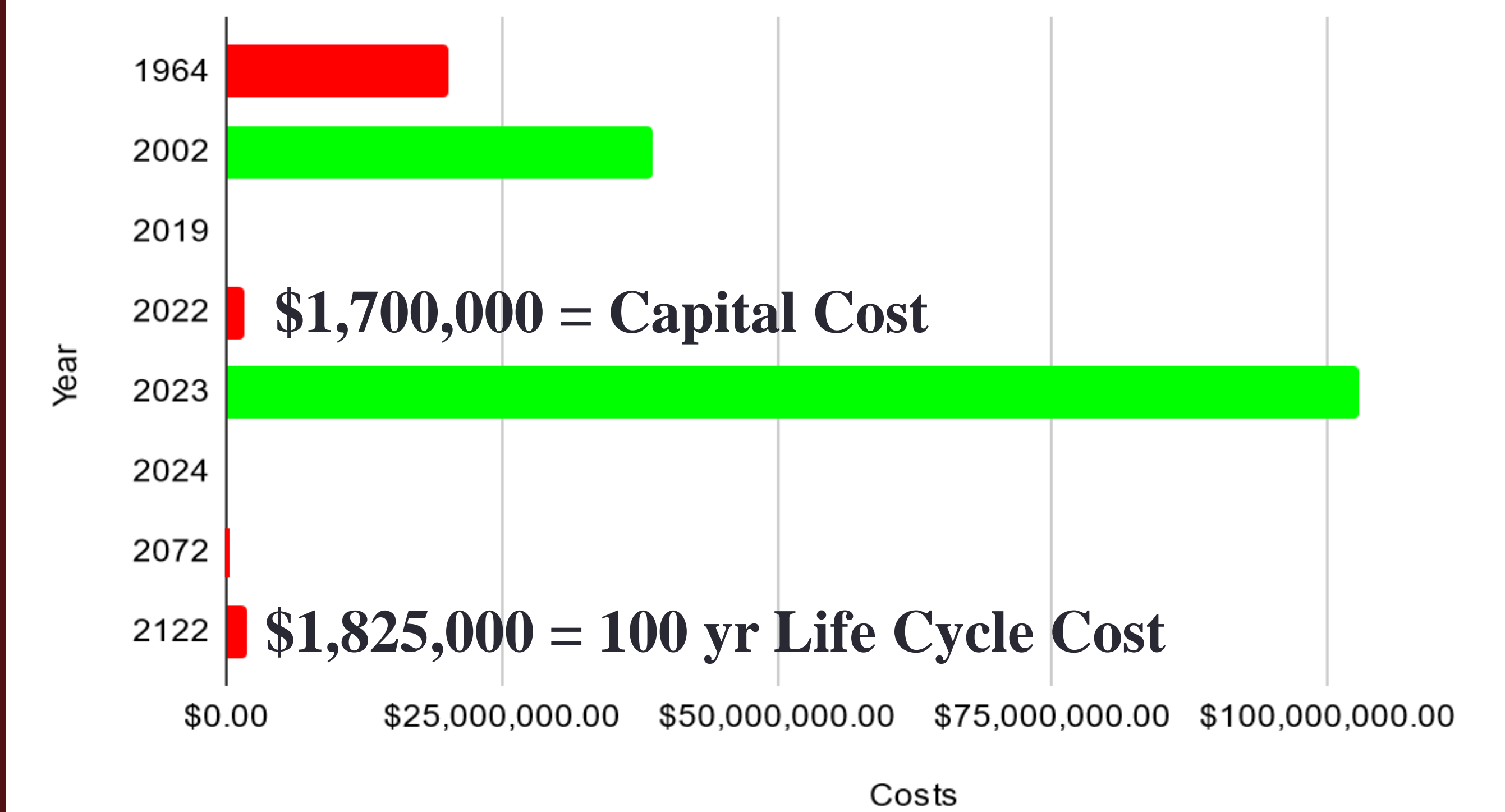
Limestone rocks from the blasts were recycled for the retention ponds' borders and riprap.

Soil and water level sensors are added to the dam for long-term maintenance.

Concrete baffles contained sustainable cement, to reduce carbon emissions.

**Envision Results = Platinum (900/1000)**

## Life-Cycle Cost



## SolidWorks Drawing

