

Reservoir No.1 Expansion Project

Chris Brownell – April 30, 2022

Reservoir History

The current “Storage and Augmentation Reservoir No.1” adjacent to the district’s wastewater treatment plant was constructed in 1975 as the sewage lagoon for Genesee.

Following construction of a mechanical wastewater treatment plant in 1988 the lagoon was no longer a required part of the sewage treatment process, but rather served as an emergency containment pond. In 1997 the lagoon was upgraded to include more storage capacity and a liner allowing it to be used for storage and augmentation to add to and protect water rights. Prior to draining the reservoir in 2021 to begin required steps for exploration and engineering completion, the reservoir remained full (16 acre-feet) mainly for aesthetics, but also as a source of firefighting water for helicopters. The reservoir could only be filled with raw or treated sewage and had no ability to supply any source of water to the drinking water treatment plant, just discharge back to Bear Creek. Therefore, without the expansion project, even the original sixteen acre-feet of storage was not an available source of raw water for treatment to drinking water.

Expansion Project

The current expansion project goal it to add thirty additional acre-feet of storage, but the project would actually add forty-six acre-feet (fifteen million gallons) of raw water storage available for treatment to drinking water, as the project includes infrastructure required to tie the reservoir into the raw water transmission system. If completed this will allow full functionality of the expanded reservoir to include fill, draw, discharge, and even recycle.

Questions

The questions asked of staff recently (during the election cycle) have all been the same, “is it true that we have not had to draw down the 101-acre-foot reservoir since it went online in 2007” and “do we really need additional storage for drought protection”

Answers

We have not had to substantially draw down Reservoir No.2, and no one can answer for sure whether Bear Creek will run dry again as it did in 2002 for a period long enough to require substantial depletion of Reservoir No.2. If or when that happens again, the concern is not just getting by with available storage for the District’s drinking water and firefighting source, but the ability to refill the reservoir again during a prolonged period of low flow in Bear Creek as all users with storage rights from the top of the watershed to Nebraska would be in the same position wanting to refill depleted storage on an over allocated creek.

- The question not one person has asked.
What would Genesee do if anything happened to the sole raw water source (Bear Creek and Reservoir No.2) or any part of the raw water pumping and transmission system?
 - The answer is Genesee could be out of water and firefighting ability (hydrants) within as little as two to three days, with no advance notice!

The importance and value of the Reservoir No.1 Expansion Project in my opinion is as follows.

1. Provides the District with an alternate raw water source (15 million gallons) to protect against the likelihood of an eventual short or long term loss of our sole source due to fire damage or resulting water quality from fire in the watershed, contamination of the creek and/or reservoir, failure of electrical or mechanical equipment, damage or failure to any part of the approximate 5,000 feet of 50 year-old transmission pipe installed on the steep mountain hillside, or the storage tank between the source and the treatment facility. If the project is completed Reservoir No.1 would not be dependent on any of this until it had to be refilled with raw water. It would also provide the ability to recycle treated wastewater if necessary, which is what Bear Creek is anyway under severe drought conditions.
2. Important part of the process to protect a 250-acre-foot conditional water right for the District (use it or lose it).
3. Provides an additional 46 acre-feet of raw water storage for additional drought protection

Project history, Timeline, and Cost

- March 29, 2019 – The Board approved a proposal to prepare for the Colorado Water Conservation Board (CWCB) a feasibility report to increase raw water storage
- August 27, 2019 – Genesee Storage Increase Feasibility Study presented to the GW&SD Board
- January 28, 2020 – Feasibility Study update presented to GW&SD Board
- March 24, 2020 – GW&SD Board unanimously approved moving forward with the project
- May 2020 – Final Draft Feasibility Study Report to CWCB
- After the Reservoir No.1 site was selected as the best option a loan was secured through the CWCB
- CWCB originally approved the District for a \$4,242,000 loan with a \$42,000 loan origination fee
- March 2021 – CWCB awards a \$1,384,000 Water Plan Grant for the Reservoir No.1 Project

Current GW&SD Board and CWCB Approved

- \$2,858,000 CWCB Loan (2.50% interest 40 yr)
- \$1,384,000 CWCB Grant
- Total Approved \$4,242,000

Current Project Expense (April 30, 2022)

- \$140,208 – Applied to Loan
- \$153,565 – Paid by Grant
- \$30,000 – State Design Review Fee (Due early May)