

URBAN WATER INSTITUTE NEWSLETTER



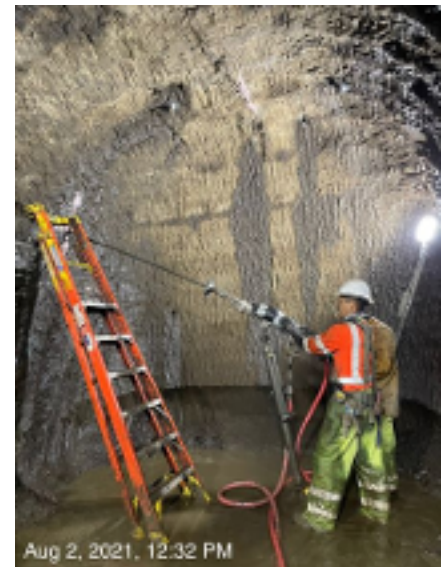
Term: Fall | Issue 18 | Date: October 1, 2021

In Focus: Santa Cruz Newell Creek Dam Project

As the next drought looms over California water suppliers, many are being reminded just how critical the investments in their water systems are. The City of Santa Cruz Water Department (City), now in the fourth year of its 10-year Capital Improvement Program, is no exception. The City's efforts include strategizing to augment water supplies, improving their system's drought resiliency, and protecting vulnerable supplies from deficiencies in the system, such as aging infrastructure.

Constructed in 1961, the City's Newell Creek Dam is a 195-foot-high earth-fill dam that impounds Loch Lomond Reservoir in the Santa Cruz Mountains. The 60-year-old infrastructure at the dam is not only nearing the end of its useful service life, but also susceptible to damage from earthquakes, flooding, and landslides. The City relies on Loch Lomond as the only raw water storage reservoir in its portfolio, so it was a high priority to devise a project that would modernize the existing system. The resulting Newell Creek Dam Inlet/Outlet Replacement Project replaces the aging inlet/outlet works, improves the City's overall operational efficiency and system performance, and provides for long-term reliable storage for the City's drinking water supply. Additionally, improvements made to the inlet/outlet works allow the City to meet current safety requirements set for high hazard dams by the California Division of Safety of Dams (DSOD).

Technical components of the estimated \$70 million construction project include an approximately 1,500-foot-long conventionally excavated tunnel, dredging in the reservoir, three vertical shafts installed from a barge, inlet/outlet pipelines, an outlet structure with valves and controls, and access improvements. The intricacies of the design require complex construction sequencing and methodologies to meet the project's permitting requirements while also allowing the City to maintain normal operation of the reservoir to provide safe and reliable drinking water to its customers. *(continue reading on page two)*



Tunnel excavation has progressed to the curved portion of the tunnel alignment around Newell Creek Dam. In the reservoir, all three (upper, middle, and lower) debris wall foundations have been anchored and tested. Drilling of the vertical shafts for the three intakes began in July. (City of Santa Cruz website)

In Focus: Santa Cruz Newell Creek Dam Project *(continued)*



Location of the Santa Cruz Newell Creek Dam project.

(from page one) Construction of the critical infrastructure project began in Spring 2020 and came with its share of new challenges as the project team contemplated how to mitigate any significant cost or schedule impacts amidst the COVID-19 pandemic. Uncertainty around availability of materials, equipment, and personal protective equipment, as well as frequent changes to state and local guidance, were among the top concerns. To date, the contractor has been able to work with vendors to secure materials at fair prices and far enough in advance to minimize cost and schedule impacts to the project. This is due in large part to the ongoing partnering and collaboration between the City, contractor, construction manager, and designer to expedite submittal reviews and work together toward a common goal of delivering a project that meets the City's needs.

However, the COVID-19 pandemic wasn't the only unforeseen challenge that the project faced during construction. In August 2020, the CZU Lightning Complex wildfire burned through Santa Cruz and San Mateo counties, forcing evacuation of the site and a two-week shut down before it was safe to return and resume construction. The project site was fortunate to avoid any damage and remains on track for substantial completion at the end of 2022.

Though construction is still ongoing, the project has received both local and national recognition. In addition to being featured in local news media, it also received the 2021 Association of State Dam Safety Officials West Regional Award of Merit for the City's cooperation with DSOD and contributions to regional dam safety. The project's achievements and accolades can largely be attributed to the project team's genuine commitment to partnership and collaboration toward the successful completion of the project.



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Urban Water Institute Annual Conference - September 2021

Urban Water Institute had another successful water conference in September. Presentations from the conference are available at UrbanWater.com.



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