

San Gabriel Reservoir – Azusa CA

The San Gabriel project possesses a variety of environmental considerations in terms of assessment compliance, management and mitigation efforts throughout the life of the project. Environmental considerations include endangered fish, seasonal bird nesting, water quality management, confined space work, and wildfires.

In the spring of 2022, Ames crews began a four-year effort to remove 5 million cubic yards of sediment from the reservoir, which provides flood control and groundwater recharge for the San Gabriel Valley and Greater Los Angeles. The length of the reservoir is nearly 2.5 miles and the excavation footprint is over 3,700,000 SF. The sheer size and scope of the project provided many challenges in managing day-to-day operations while keeping environmental considerations at the forefront.



The West Fork River and San Gabriel River are the two rivers that feed San Gabriel Reservoir. The Santa Ana Sucker fish calls these two rivers home. Since the sucker is listed as a threatened species, great efforts were made by Ames and LA County biologists to mitigate any harm to the fish or its habitat. The primary task was for Ames to erect a “fish fence” upstream and downstream of water pools or flowing streams within the vast reservoir footprint to isolate and contain the Santa Ana Sucker fish. The biologists would then “e-fish” the space between the two fences and relocate any fish they caught to an offsite location. Over 30,000 resident fish were relocated, 15,000 of which were Santa Ana Suckers. Additionally, biologists would be on-site full time constantly inspecting the fences and our work areas for any fish that may have gotten trapped. Once the fish were relocated, this allowed for the construction of water crossings, dewatering and water diversion activities.



Early into the project seasonal nesting song birds (particularly the red-winged black bird) took up residences throughout the freshly drained reservoir, which immediately created a natural nesting ground due to vegetation growth. This forced Ames to have to adjust their initial construction plans and work around the nesting birds until their nests were confirmed empty by the onsite biologist. Ames and the biologists worked together daily to observe and determine clear areas of work in order to maximize work areas, but also not encroach on the nesting birds.

Early Season



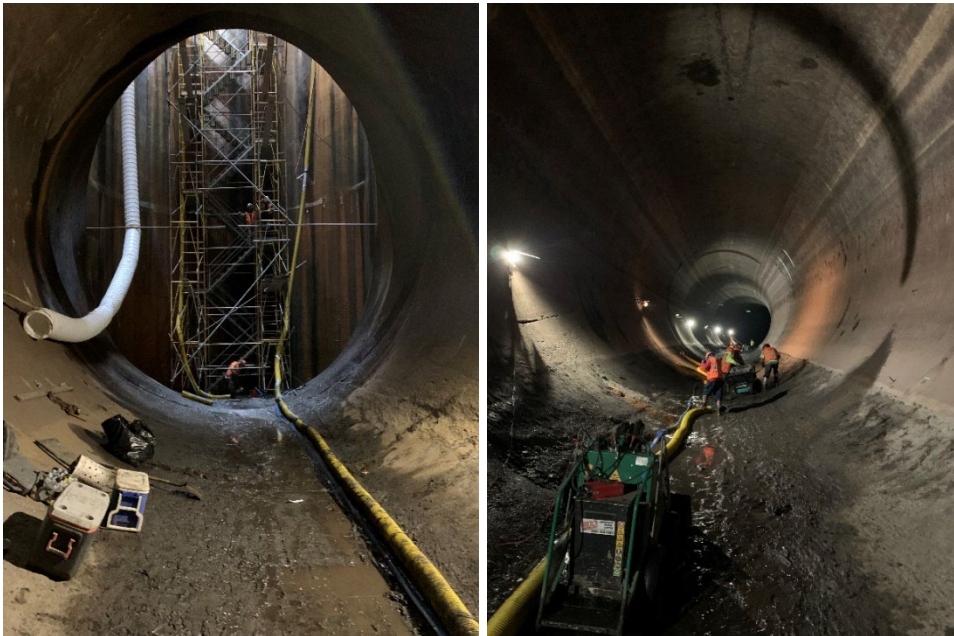
End of Season



The project also required Ames to pump any remaining residual water below the elevation of 1313' out of the reservoir and over the existing spillway. The pumping of water required Ames to meet strict pH, turbidity, oxygen levels, and other water quality standards prior to discharge. Through consulting and engineering, Ames developed a pump discharge system by setting up six separate "tank farms" that would pump the residual water through sand media filters that cleaned the water prior to discharge.



As part of the contract, Ames is required to rehabilitate the dam's main outlet and sluiceway tower and tunnel. Cleaning out the main outlet tower (MOT) tunnel prior to inspection required considerable effort. First, the existing MOT which was being utilized for upstream water flow into the reservoir which required diversion. Once diverted, crews removed 600 cubic yards of wet sediment from a 600-foot-long by 30-foot-diameter tunnel that was only accessible via a 90-foot-high scaffolding staircase installed within the MOT. The material was cleaned out using a combination of electric material buggies, small stand-on electric skid steers, suction hoses, and hand shovels. Crews received special confined space training and wore air quality monitors continually while in the tunnel to ensure their safety.



Wildfires are always a big part of the news in Southern California, and the dense brush surrounding the San Gabriel Mountain region is no exception. During 2022 the San Gabriel project had their share of fires during the summer months. The project staff is fully aware of the fire hazards and the protocols necessary to ensure both personnel and equipment are safely removed or stored when the threat exists. Fires within the vicinity typically require a project shut down, sometimes for days and on one occasion over a one-week period due to road closures and the potential spreading of the fire within the surrounding region.



The project initially did not allow for the use of conveyors for the transport of sediment from the reservoir to the sediment placement site (SPS) which is located approximately 1.5 miles from the reservoir on County property. In 2022, up to 30 articulated rock trucks were used to haul the sediment, but with Ames persistence, discussions were held with the County to consider the use of a conveyor system. The use of a conveyor system greatly improves the safety of both public vehicles who utilize the road to access a shooting range and rock truck drivers who must navigate the curved road to access the fill site. The use of a conveyor system will also improve the carbon emissions by reducing fuel consumption used in the articulated rock trucks and improve overall efficiency. The project’s team effort upholds Ames mission in providing construction solutions in harmony with nature, so that people, clients, partners, and communities can flourish.

