

Ventura County's supply of water news





Building Safety and Resilience at the Santa Felicia Dam

Currently, the Santa Felicia Dam is categorized as an extremely high-hazard dam due to the large population living within the dam inundation zone. Seismic threats pose a real risk. UWCD is taking steps to ensure the safety and resilience of the dam for generations to come.

The \$198 million project constructs a new outlet works, including a small hydropower facility designed to withstand the Maximum Credible Earthquake (estimated to be a magnitude of 7.2). The project raises the dam crest by 6½ feet and modifies the existing spillway, resulting in an increased hydraulic capacity to safely pass the inflow design flood and prevent overtopping the spillway walls.

Photo above: Captured the morning of March 22, 2023, showing the water coming over the Santa Felicia Dam spillway and into Piru Creek.

WHAT IS THE SANTA FELICIA DAM

Constructed in 1955, the Santa Felicia Dam is the first dam ever built for groundwater recharge. Together with the Lake Piru reservoir, the dam recharges downstream groundwater basins that are depleted due to substantial over-pumping and combats seawater intrusion in the groundwater aquifers near the Pacific Ocean.





Key Information

UWCD uses conservation releases from the Santa Felicia Dam each year when the downstream groundwater basins are at their seasonal lows. Runoff from the Piru Creek Watershed is stored in Lake Piru for the rest of the year. During conservation releases, the water is discharged into Lower Piru Creek and continues to flow to the Santa Clara River, where it is joined by runoff from the Sespe and Santa Paula Creek watersheds.

The conservation releases maximize the water that reaches the Freeman Diversion at Saticoy, located downstream on the Santa Clara River. The recharge basins at Saticoy replenish groundwater basins with water that supplies cities, industry and farms. The dam is also used for direct delivery of local water supplies.

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By the Numbers

- Constructed: 1955
- Width: 200 Feet
- Spillway: 450 Feet
- Lake Piru Reservoir Storage: 80,500 Acre-Feet (26 Billion Gallons)
- Hydroelectric Generation: Powerhouse added in 1987



BENEFITS

- · Improves the aging outlet works and spillway
- Increases the resilience of the Santa Felicia Dam
- Protects against potential loss of life, injuries, and damage to nearly 400,000 residents along the Santa Clara River Valley
- Secures continued operational flexibility for sustainable groundwater recharge and direct delivery of water supplies within UWCD's service area
- Ensures continued habitat releases to lower Piru Creek
- Allows continued operation of the dam's hydropower facility and generation of a clean, low greenhouse gas source of power
- Allows for selective withdrawal of reservoir water at various elevations for water quality management purposes, and accommodates future sediment level rise in the reservoir
- Creates new construction job opportunities, with an estimated daily need for skilled laborers ranging from 37 to 46 workers
- Increases the reservoir drawdown emergency releases by approximately 80 percent to meet the Division of Safety of Dams criteria







Click for a clip of the Santa Felicia Dam and Lake Piru current water levels. Don't miss our upcoming video series! STAY TUNED.





SPEAKING OPPORTUNITIES

UCWD welcomes opportunities to connect with the community and discuss water supply, groundwater resources and current threats to our system. If you'd like to book a presentation from one of our staff, please contact:



Murray McEachron, Principal Hydrologist Email: murraym@unitedwater.org Phone: (805) 695-3716



GLOSSARY

Conservation Releases – UWCD uses the Santa Felicia Dam to release stored water from Lake Piru when downstream groundwater basins are at their seasonal lows. The conservation releases maximize the water that reaches the Freeman Diversion, located downstream on the Santa Clara River. Ultimately, this process

helps replenish groundwater basins with water that benefits ecosystems, cities, industry and farms.

Dam – A barrier that restricts the flow of water and raises its level, forming a reservoir used as a source of water supply or to generate electricity. Reservoirs manage flood control and supply irrigation, drinking water, industry, aquaculture and more.

Groundwater Basins – An underground area with permeable materials capable of providing a significant groundwater supply to wells or storing a significant amount of water.

Hydroelectric Generation – Electricity sourced from hydropower, one of the oldest and largest sources of renewable energy. Hydroelectric generation uses the natural flow of moving water to generate electricity.

Runoff – The unconfined flow of water over the ground surface; occurs when excess rainwater, stormwater, meltwater, or other water sources can no longer rapidly infiltrate in the soil.

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