



Where Your Water Comes From and the Energy it Uses

Energy might not be the first thing you think of when it comes to water, but the need to pump, convey and treat water mean that water and energy use are inextricably linked. Depending on the treatment processes required, and the distance the water must travel, the carbon footprint of each water supply source can vary dramatically.

The Water-Energy Nexus

Many drought mitigations, such as developing diverse local water supplies, can actually increase energy use. How the District balances this increased need for energy with enhanced water reliability is an emerging challenge.

State Water Project

The Bay Delta

San Luis Reservoir

California Aqueduct
Coastal Branch

The Sierras

Local Water Supplies

The majority of the District's water supply comes from local sources, which offer increased reliability. While groundwater and recycled water are more energy intensive than surface water supplies, they still typically have a lower total energy footprint compared to imported sources moved over long distances.

Imported Water

The State Water Project supplements local water supply sources, especially during dry periods. However, moving water from the Northern part of the state is especially energy intensive as it is pumped through the Delta and over the Tehachapi mountains.

The Goleta Water District's Diverse Water Supply Portfolio

The Goleta Valley has a semi-arid climate marked by periods of drought alternating with periods of moderate to heavy rainfall. Using a variety of water sources is vital in this dry environment, but accessing this diverse supply requires increased energy use. Pumping groundwater and delivering water from the State Water Project both take considerable amounts of energy. By contrast, surface water supplies from Lake Cachuma are delivered to the Corona Del Mar Water Treatment Plant and customers using a gravity fed system that is highly energy efficient. Moving forward, the District will continue to explore options for generating sustainable energy, or even shifting the timing of some water supply and treatment operations to periods when renewable sources provide higher shares of energy supply.

Surface Water

Santa Ynez River

Bradbury Dam

Lake Cachuma

Tecolote Tunnel

Corona Del Mar Water Treatment Plant

South Coast Conduit

Goleta Water District

Corona Del Mar Water Treatment Plant

Groundwater

District Groundwater Well

Groundwater Well

Recycled Water for Irrigation

Recycled Water System at Goleta Sanitary District

Recycled Water

Non-potable Recycled Water used for irrigation at local golf courses, parks, and UCSB

Groundwater

Aquifer