

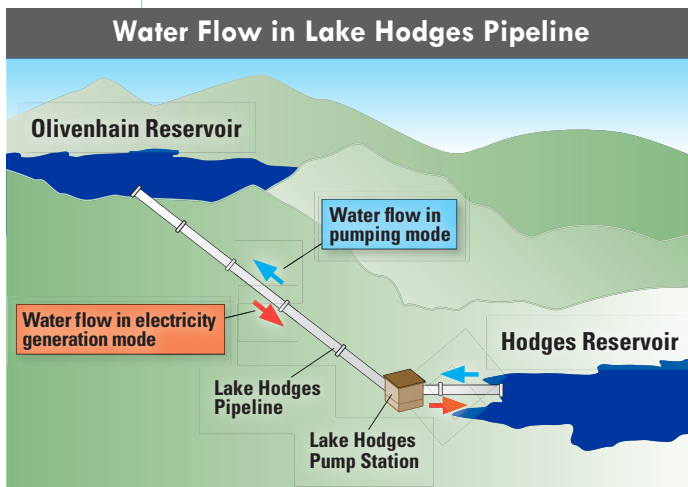
Lake Hodges Pumped Storage Facilities



Improving INFRASTRUCTURE

Improving Water and Energy Reliability

In recent years, the San Diego County Water Authority has imported more than 80 percent of the county's water supplies. The Lake Hodges Pumped Storage Facilities will help keep water flowing throughout the region if an earthquake or drought were to cut off imported water deliveries.



During periods of high energy demand, water stored in Olivenhain Reservoir is released downhill to Hodges Reservoir. As the water passes through the Lake Hodges Pump Station, it activates the pump turbines, generating electricity. At times of low energy demand, the same turbines pump water 770 feet uphill from Hodges to Olivenhain.

The facilities connect the City of San Diego's Hodges Reservoir with the Water Authority's Olivenhain Reservoir. The connection provides the ability to store up to 20,000 acre-feet of water at Hodges

Benefits of Lake Hodges Facilities

- Provide emergency water storage for up to 50,000 homes
- Make water from Hodges Reservoir available for distribution throughout the county
- Create enough on-demand electricity generation capacity for 26,000 homes

Reservoir for emergency use. One acre-foot is approximately 325,900 gallons, enough to supply 2.5 single-family households of four for a year. The connection makes water from Hodges Reservoir available for use throughout the region. Previously, it only served two local water districts.

The facilities ensure the ability to add imported water during dry seasons to maintain minimum water levels in Hodges Reservoir. They also provide the ability to move captured runoff for regional benefit during rainy seasons.

As water flows down the pipeline from Olivenhain Reservoir into Hodges Reservoir, it generates up to 40 megawatts of energy on demand, helping to manage temporary peak electrical demands or unplanned outages. The facilities also create revenue and help offset operating costs.



Lake Hodges Projects

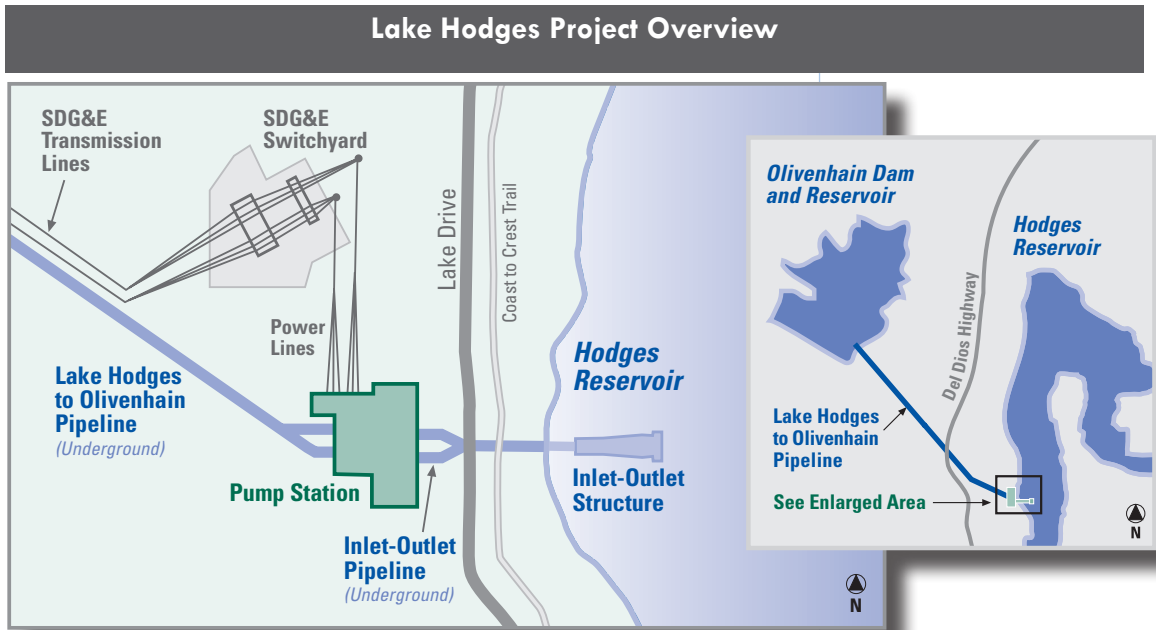
Building Reliability

Construction of the Lake Hodges facilities began in 2005, and the facilities began operations in 2012. The components include an underground pipeline, a pump station, an electrical switchyard and an inlet-outlet structure.

In spring 2007, the 1.25-mile-long pipeline connecting both reservoirs was completed. The 10-foot diameter steel pipeline rises 770 feet in elevation from Hodges Reservoir to Olivenhain Reservoir.

The pump station extends 10 stories underground and houses two 28,000 horsepower pump turbines. Each turbine is capable of generating 20 megawatts of electricity. Electricity generated by the pump turbines is transmitted to an outdoor switchyard, then to a 69-kilovolt power line that connects to the local transmission system.

The inlet-outlet structure is located below the surface of Hodges Reservoir. Linked to the pump station through a 200-foot-long tunnel, it moves water back and forth between the reservoir and the pump station.



Avoiding Impacts

The Water Authority strives to avoid and minimize impacts to the environment and the community. A landscape architect incorporated community input into a landscape plan to help restore the land temporarily impacted by the construction project and blend the pump station in with its natural surroundings at Hodges Reservoir.

For more information, go to sdcwa.org/lake-hodges-projects. ■



A pipeline between Olivenhain Reservoir (left) and Hodges Reservoir (right), can deliver water from Hodges into the Water Authority's aqueduct system.



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