



# Olivenhain-Hodges Pumped Storage Project

San  
Diego  
County  
Water  
Authority

## FACT SHEET

The Olivenhain-Hodges Pumped Storage Project is an integral component of the Lake Hodges projects, providing electrical generating capacity while enhancing Emergency Storage Project requirements to ensure regional water reliability.

### Background

In 2005, the Water Authority is scheduled to begin construction of the Lake Hodges projects, which include the Lake Hodges to Olivenhain Pipeline and the Lake Hodges Pump Station/Inlet-Outlet structure.

- The Lake Hodges to Olivenhain Pipeline is a 1¼-mile-long water transmission tunnel between the Lake Hodges Pump Station and Olivenhain Reservoir.
- The Lake Hodges Pump Station/Inlet-Outlet structure, located at Lake Hodges, will pump water from the lake to the Olivenhain Reservoir. It will also control the flow of water from Olivenhain Reservoir to Lake Hodges.

By providing a means to convey water between Lake Hodges and the Olivenhain Reservoir, these projects will increase operational flexibility and water storage capacity for San Diego County. The water will also be available for emergency use in case of a natural disaster such as earthquake or drought. Water pumped from Lake Hodges to Olivenhain Reservoir can readily be conveyed to the Water Authority's Second Aqueduct for further distribution throughout the county.

### Conserving Energy

During the planning phase of the Lake Hodges projects' design, the Water Authority recognized the

hydroelectric generating potential of the 770-foot elevation difference between Olivenhain Reservoir and Lake Hodges. The Lake Hodges Pump Station, as originally planned, contained three vertical pumps and two pressure-control valves. By replacing the pressure-control valves, pumps and motors with reversible motor-generator/pump turbines and appropriately sizing the tunnel pipeline, all of the elements of a pumped-storage capability became available. Energy created during the transfer of water from the Olivenhain Reservoir to Lake Hodges

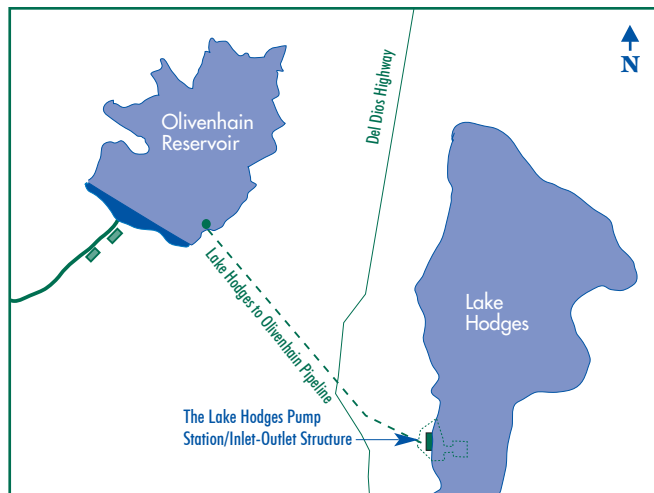
would now be captured and utilized in the region. This captured energy will provide revenue to pay back the cost of the pumped-storage equipment and facilities and support other Water Authority activities.

The Lake Hodges Pump Station's pump-turbines will produce a maximum output of 40 megawatts during

water transfers from Olivenhain Reservoir to Lake Hodges. The electricity generated will be transmitted to an outdoor switchyard located adjacent to the pump station, then to a 1,400-foot-long transmission line that will connect to the existing local transmission system.

The original above-ground pump station structure was modified to be mostly below ground to accommodate the pumped storage equipment, providing the added benefit of reduced visual impact to the area.

When considering both revenue generated and energy saved, the pumped-storage facility will be a major enhancement to the Lake Hodges projects. Construction of the Lake Hodges projects is scheduled to be complete by 2008.



**The Water Authority is a public agency serving the San Diego region as a wholesale supplier of water. The Water Authority works through its 23 member agencies to provide a safe, reliable water supply to support the region's \$130 billion economy and the quality of life of 3 million residents.**



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