



Summer 2002 Edition

ESP UPDATE



The Emergency Storage Project is a system of reservoirs, interconnected pipelines and pumping stations designed to make water available to the San Diego region in the event of an interruption in imported water deliveries.

The ESP is part of the Water Authority's Capital Improvement Program to enhance and increase the operational flexibility of its water delivery system.

This newsletter is one way the San Diego County Water Authority is keeping communities like yours informed about the project's progress.

For more information, please call toll-free (877) 426-2010.



San Diego County Water Authority Capital Improvement Program



A side angle view of the dam's stair-stepped face.

those community groups prior to the decision to discuss the project's official name. It is important to the Water Authority that the name chosen would be acceptable to community members. We would like to thank everyone who participated in this process.

When finished, the dam will be 318 feet high and will be the tallest roller-compacted concrete dam in North America.

Construction on the dam continues. By July 24, the dam stood 188 feet high, making it 64 percent complete. Crews place about three feet of roller-compacted concrete a day, equaling 15 feet a week. Workers are placing roller-compacted concrete on the shorter main section of the dam nestled between two knolls. When work begins on the entire 2,552-foot length of the dam, progress will be slower since more surface area will have to be covered for each 12-inch lift of roller-compacted concrete. When finished, the dam will stand 318 feet high and will be the tallest roller-compacted concrete dam in North America.

Work on the dam is not only progressing — it is breaking records! The

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Tunneling the San Vicente Pipeline

The second phase of geotechnical drillings at several locations along the San Vicente Pipeline route is nearly complete. These drillings have provided important geological data about rock types and strength and groundwater levels, which are needed to design the tunnel and pipeline.

The pipeline will be built in a tunnel rather than a trench. Tunneling will

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Olivenhain Dam Update

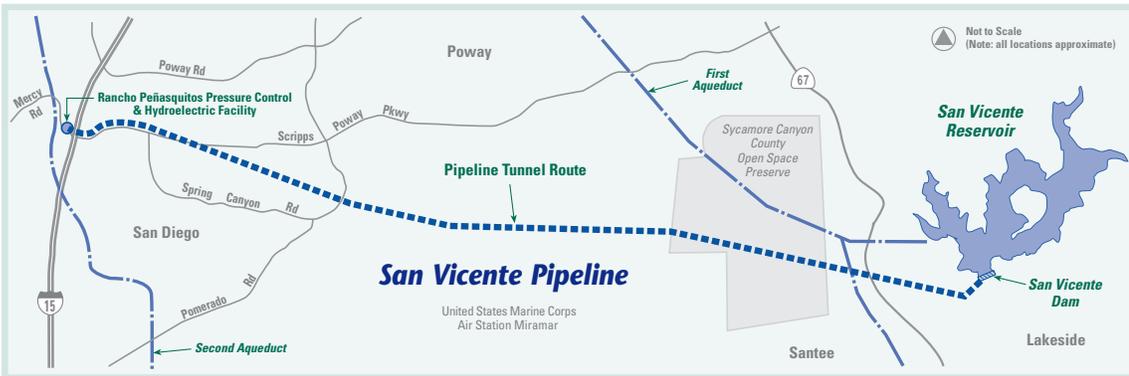
It's official. In May, the Water Authority's board of directors selected the working name, "Olivenhain Dam and Reservoir," as the project's official name. The Water Authority has a policy to name projects after the area in which they are located. Since the dam is located near several established communities, members of the public affairs team went to

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enable the Water Authority to build the pipeline with minimal impacts to land surfaces and the surrounding communities, except where construction shafts will be needed to provide



access for excavation equipment and crushed rock removal from the tunnel.

Up to four tunnel boring machines are planned to excavate the majority of the 12-mile tunnel. The tunnel boring machine works by anchoring itself against the wall of the tunnel and penetrating

Tunneling will enable the Water Authority to build the pipeline with minimal impacts to land surfaces and the surrounding communities.

the rock with rotating hardened steel roller bits. Under the pressure of the roller bits, the rock splinters into small pieces. The tunnel boring machine moves forward in short steps, moving at a rate of 50 to 120 feet a day, depending on rock conditions.

It may be possible for people near the tunnel route to perceive a low-level vibration for several days as the tunnel boring machine approaches and proceeds past their location. Tunneling and operation of the pipeline will not impact surface structures such as homes, swimming pools or patios.

The tunnel and pipeline are scheduled for construction from 2004 to 2007. The Water Authority will be providing regular updates to community groups along the tunnel route, including communities in Mira Mesa, Rancho Peñasquitos, Scripps Ranch and Lakeside. 💧

Preliminary Work Started for Lake Hodges Connection

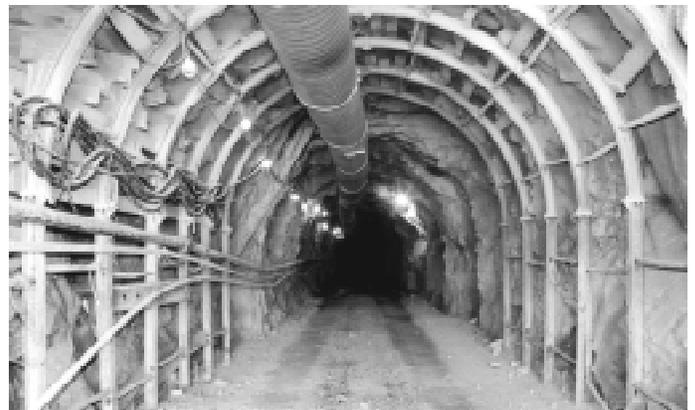
The Lake Hodges Headworks project is under construction at the Olivenhain Dam site. This facility will serve as the water inlet and

outlet in the Olivenhain Reservoir for the future Hodges Pipeline that will connect the new reservoir to Lake Hodges. Construction workers are preparing the Olivenhain Dam and Reservoir portion of the connection point now

while there is no water in the reservoir, drilling out rock in the 500-foot tunnel and inserting bolts into the rock for stability.

Once workers finish removing the excavated rock, they will place the concrete tunnel lining and install the headworks gate. The gate will keep the water out of the tunnel until the future tunnel pipeline connection to Lake Hodges is constructed.

The Hodges Pipeline between Lake Hodges and Olivenhain Reservoir is scheduled for construction from 2005 to 2007. Currently, the water elevation in Lake Hodges is very inconsistent. This pipeline will allow the Water Authority to pump water



A look inside the Lake Hodges Headworks project.

between the two reservoirs, maintain Lake Hodges at a more consistent level and also store water for emergency purposes. This will also allow for more continuous recreational use of Lake Hodges in the future. 💧

Roller-Compacted Concrete — The Process

Roller-compacted concrete technology is being used to construct the Olivenhain Dam. From quarrying and rock crushing to final placement, the pictures below tell this unique story.



1. Weekly blasts create loose rocks at the on-site quarry. Trucks move rock from the quarry to the rock crusher. Since there is an abundance of good rock, no additional aggregate is hauled to the site.



5. Roller-compacted concrete from the batch plant is loaded into dump trucks on the dam's surface.

2. Rocks are dumped into the rock crusher and crushed into the three different sizes needed in the roller-compacted concrete mixture.



6. Each dump truck drives to the section of the dam being worked on and dumps its load of roller-compacted concrete.



7. A spreader follows closely behind each dump truck and moves roller-compacted concrete evenly over the dam.



3. Once crushed, rocks are stored in stock piles until they are conveyed to the batch plant.



4. At the batch plant (the two large white towers), roller-compacted concrete is made using water, cement, flyash and crushed rock.



8. Large 10- and 12-ton vibratory rollers follow the spreaders and drive on top of the roller-compacted concrete to compact it to a 12-inch layer, known as a lift.

Photographs © 2002 John W. Alexanders

Water Authority Hosts International Conference

In June, the Water Authority hosted the United States Society on Dams for its annual conference in San Diego. More than 250 attendees from around the world participated in this year's conference, which was filled with informative presentations, guest speakers and tours of the Olivenhain Dam and other dams in the region. Hosting this conference allowed the Water Authority to showcase its Olivenhain Dam project through papers and presentations made by Water Authority staff and project consultants. 

DAM *continued from page 1*

construction crew broke a U.S. record by placing 16,057 cubic yards of roller-compacted concrete in two 10-hour shifts. The contractor is consistently placing between 13,000 to 15,000

cubic yards of roller-compacted concrete every 24 hours. On the record-breaking day, all components of construction ran so efficiently that construction crews exceeded their usual pace. Roller-compacted concrete is placed between 3 p.m. and 10 a.m., with maintenance work occurring during daytime hours when it is too warm to place the concrete. 

For more
information

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**about the San Diego County Water Authority's
Emergency Storage Project, please call (877) 426-2010
or visit our Web site at: www.sdcwa.org.**



**San Diego County
Water Authority
4677 Overland Ave.
San Diego, CA 92123**

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***The San Diego County
Water Authority is a
public agency serving the
San Diego region as a
wholesale supplier of
water imported from the
Colorado River and
Northern California. The
agency works through its
23 member agencies to
provide a safe, reliable
water supply to nearly
three million San Diego
County residents.***