

ESP UPDATE



Spring 2009 Edition



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 Emergency Storage Project is part of the San Diego County 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

or visit our website at

cip-esp.sdcwa.org



San Diego County
Water Authority

Capital Improvement
Program

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Getting Ready for Construction on San Vicente Dam Raise

Good news for San Diego County: construction starts soon on the San Vicente Dam Raise, the last major component of the Emergency Storage Project. The San Diego County Water Authority will select a contractor for the first phase of construction on the dam raise this spring, and construction is expected to begin before summer.

The San Vicente Dam Raise project will increase the height of the existing dam by 117 feet. This will more than double the reservoir's water storage capacity. By raising the dam, the Water Authority will be able to store an additional 152,000 acre-feet of water for two purposes: for use in emergencies if the San Diego region's imported water supply is cut off, and for storage of surplus water during wet seasons for use during dry seasons.



Crews used "dental concrete" to fill crevices and build a solid foundation for the Olivenhain Dam. The contractor for the San Vicente Dam Raise project will use this same method during the first phase of construction.

phase of construction is anticipated to take about one year. The next phase of construction, placing the concrete to raise the height of the dam, is anticipated to begin in early 2010.

As a reminder, San Vicente Reservoir is closed to all recreation and will remain closed until at least 2014. It will reopen after construction is complete and the water level is raised to the boat launch ramp. For information about water recreation alternatives in the meantime, please visit the city of San Diego's website at **www.sandiego.gov/water/recreation**.



This first construction phase will prepare the dam for the dam-raising concrete work during the next phase. The contractor will excavate a foundation for the raised dam, filling any crevices to level out the foundation. This is called "dental concrete" because it is similar to a dentist filling a cavity. Crews will also prepare the dry face of the dam to create a good bonding surface for the new concrete. This work will not affect the integrity of the existing dam, and it will be closely monitored by the California Department of Water Resources – Division of Safety of Dams as well as the Water Authority's construction manager.

Other work in the first phase includes building new access roads to the dam and installing new pipelines and other components near and inside the existing dam. Some of the excavation work will require controlled blasting. The Water Authority will notify nearby residents well in advance if a blast is scheduled. This first

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Lake Hodges Cofferdam Gets the Job Done

How do you build an inlet-outlet structure and its connecting tunnel on the bottom of a reservoir? You use a cofferdam! The Lake Hodges Projects contractor installed a temporary cofferdam to keep the reservoir water out of the construction area. Crews could then build the concrete channel that will draw water in and out of Hodges Reservoir when the Lake Hodges Projects are complete.

This spring, the cofferdam will be dismantled and removed – it accomplished its job.

The Lake Hodges cofferdam is uniquely designed. From above, the entire structure resembles a horseshoe-shaped wall, made of thick steel poles. The cofferdam is made of connecting sets of large steel sheets intertwined into figure-eight shapes. The sheets are joined together and resemble a twisting chain of steel, creating 13 separate loops or cells. Small rocks fill the inside of the cells, providing stability. Inside each of the 13 cells in the cofferdam is a pump that removes any reservoir water that seeps in.

When softer-than-expected ground conditions were discovered after the cofferdam was constructed, the inside of the cofferdam was reinforced with concrete.

With the cofferdam no longer needed, the pumps inside the cells will be turned off, allowing reservoir water to slowly seep in and cover the inlet-outlet structure. The cofferdam will then be



The temporary cofferdam in the reservoir will be removed this spring. It kept water out of the area that was used to build the inlet-outlet structure on the bottom of the lake.

removed. When water has completely filled in the area that was kept dry by the cofferdam, the reservoir will again have a natural-looking shoreline. A string of buoys will help alert boaters to keep their distance from the inlet-outlet structure under the water.

The removal of the cofferdam marks a key milestone in the project construction. The focus of construction will now turn to electrical and mechanical installations inside the pump station, followed by landscaping and final clean up. The Lake Hodges Projects are anticipated to be complete in late 2010. 💧



Pipe segments are lowered into the Central Shaft and transported as far as five miles through the tunnel.

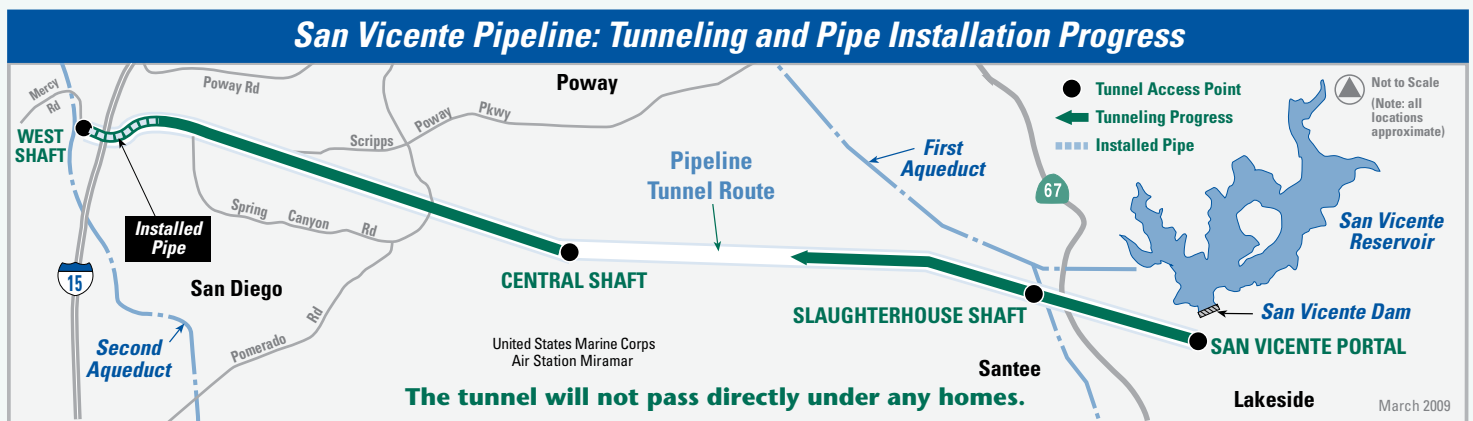
are less than two miles left to complete the tunneling work. Once the tunnel is finished on the east side of the project, crews will begin installing pipe between the San Vicente Portal and Central Shaft. All work for the pipeline is expected to be complete in 2010. 💧

A Closer Look at Pipe Installation

Pipe installation for the San Vicente Pipeline is well under way in the western portion of the tunnel. A team of specialists work together to install each 50-foot pipe segment. The installation process includes transporting the 17-ton pipe segments as far as five miles through the tunnel, fitting the pipe to its precise location, and welding it in place. It's a complex and time-consuming operation, made a little easier with specialized equipment the contractor has designed.

To date, crews have placed about 180 pipe segments in the tunnel. This is approximately 9,000 total feet of pipe – almost two miles long. The contractor anticipates completing pipe installation for the five miles between the West and Central shafts this spring.

While pipe segments are being placed at one end of the tunnel, the last remaining tunneling machine continues excavating the eastern half of the tunnel. The machine recently reached a region of softer rock, so the excavation is progressing more easily than in the past. There



The San Vicente Pipeline is an 11-mile tunnel and a large-diameter pipeline that will connect San Vicente Reservoir in Lakeside to the Water Authority's Second Aqueduct. The pipeline will function with other Water Authority facilities to provide water to the region in an emergency.

Our Shrinking Water Supplies: Conservation More Important than Ever

Southern California has been in a drought for several years. Local rainfall helps supplement our reservoirs in a wet winter, but that's only part of the picture. San Diego County imports approximately 85 percent of its water each year from the Colorado River and Northern California, and both of these water systems are suffering the impacts of severe drought.

Although the Colorado River basin received more snow and rain last year, it has not recovered from the previous eight years of drought. In Northern California, below-normal rainfall and winter snowpack in recent years have required water managers throughout the state to tap reservoirs to make up for the shortfall.

Unlike past droughts, a wet winter will not bring an end to our water supply shortage. New federal regulatory restrictions are cutting back water deliveries from Northern California through the Sacramento-San Joaquin River Delta. These restrictions were put in place to

avoid impacting endangered fish species in the environmentally damaged Delta.

The water supply outlook for Southern California is sobering. The California Department of Water Resources governs water deliveries statewide, including water flows through the Delta to Southern California. The department has announced it may provide only 20 percent of the water that agencies have requested for 2009. These reductions are likely to be in place beyond 2009 and could be expanded as additional species are identified for protection.

Water cutbacks are likely this year in San Diego County due to current drought conditions and regulatory restrictions.



February 2009



2005

All this means that water cutbacks are likely this year in San Diego County. The Water Authority's member agencies will be faced with imposing limits on water use in a variety of ways. Business, industry, agricultural, and residential customers all will be affected. In preparation, the member agencies have adopted ordinances defining how they will manage available water supplies during shortages. These ordinances are posted on the Water Authority's website, www.sdcwa.org.

The need to conserve water is urgent and immediate. Since more than half of residential water is used outdoors, the best opportunity for many households to conserve is to cut back on landscape irrigation. Go to www.20gallonchallenge.com for water-saving tips, rebates on conservation

devices, landscaping guides, irrigation resources, and water supply updates.

The time to take conservation action is now. 💧

Lake Oroville in Northern California supplies water to the San Diego region. Drought has lowered the water level dramatically since 2005.

Hear it from the Experts!

Contact the Water Authority to request a speaker for your community group or organization. With more than 25 members in our speakers bureau program, we're available to talk to local groups about our water supplies, water conservation, recycled water, and other topics. Visit www.sdcwa.org/education/speakers.phtml or call (858) 522-6708 for more information.

Testing Equipment in the New San Vicente Pumping Facilities



Water in the surge control tank reflects cloudy skies during testing on the San Vicente Pumping Facilities (above). With construction largely complete, over the next several months each piece of equipment in the pump station and surge control tank will undergo extensive testing to help ensure it works properly when needed. The pumping facilities will deliver water from San Vicente Reservoir to the San Vicente Pipeline and ultimately to San Diego County residents during an emergency. This project is expected to be complete in summer 2009. 💧

Wetlands Creation in Tijuana River Valley Approved

As part of the Water Authority's commitment to protecting the environment while providing a safe, reliable water supply to the San Diego region, the board of directors certified and approved the final environmental document for the Tijuana River Valley Wetlands Mitigation Project in December 2008.

This wetlands project will create about 40 acres of native wetlands in a former agricultural field in the Tijuana River Valley to compensate for the construction of Water Authority projects, including the Emergency Storage Project. The wetlands will create new habitat for native endangered species like the least Bell's vireo, a songbird. Construction is anticipated to begin in fall 2010. 💧

For More Information

about the San Diego County Water Authority's
Emergency Storage Project,
please call toll free **(877) 426-2010**,
email **ESPinfo@sdcwa.org**,
or visit our website at **cip-esp.sdcwa.org**.

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