



Syphon Reservoir Recycled Water Storage Project

Project Overview

The Irvine Ranch Water District (IRWD) is in the planning stages of the Syphon Reservoir Recycled Water Storage Project. Syphon Reservoir, located in the northern portion of the City of Irvine, is a sixty-year-old facility currently used to store irrigation water supplies. The Syphon Reservoir Recycled Water Storage Project would have two components. (1) Conversion of Syphon Reservoir to a seasonal storage facility for IRWD's recycled water system. This component would include upgrading the facility to current standards to create a contemporary recycled water facility. (2) Capacity augmentation to increase storage capability from 500 acre feet, currently, to potentially up to 5,000 acre feet. By providing additional storage, this project will allow IRWD to recycle 100% of the District's wastewater.

The cost to convert Syphon Reservoir to a contemporary seasonal recycled water storage facility would be approximately \$7.5 - \$10 million. This includes both on- and off-site improvements such as new outlets and pipes, a pump station and disinfection facility, renovations to the existing spillway and environmental mitigation costs. Increasing the reservoir's current capacity would be up to approximately \$40-50 million. This includes, among other things, potential de-silting, dam construction, upsizing pumps and conveyance systems and environmental mitigation.

As part of the planning stage, the District will be developing the necessary feasibility studies and environmental compliance documents as well as working with adjacent property owners to acquire the property necessary to facilitate and mitigate the project.



Background: IRWD's Recycled Water Program

IRWD boasts one of the most robust recycled water systems in the country. With nearly 400 miles of recycled water pipelines, 12 storage reservoirs, and almost 4,500 metered recycled water connections, the District delivered more than 24,000 acre-feet of recycled water in FY 08/09. IRWD promotes the use of recycled water for non-potable purposes by providing a 10% discount for irrigation uses and a 40% discount for industrial uses. Roughly 25% of the District's total water demand is met through the use of recycled water.

Recycled water is used within the District's service area for:

- Landscape irrigation: 80% of all public and commercial landscaping is irrigated with recycled water.
- Agriculture irrigation
- Commercial uses: 45 commercial buildings use recycled water for toilet/urinal flushing and in cooling towers.
- Industrial uses: including a carpet dying, concrete production, and composting.

Seasonal Storage of Recycled Water

While recycled water production remains relatively stable throughout the year, recycled water demands, dominated by irrigation uses, vary considerably due to variations in weather patterns. IRWD's recycled water storage reservoirs allow for excess recycled water produced in the cooler and wetter winter months to be stored for use in the hotter and dryer summer months when irrigation demands are higher. Without adequate seasonal storage, the excess supplies are lost to ocean disposal and operational costs to purchase supplemental water to meet summer demands increase.

The addition of Syphon Reservoir to IRWD's existing network of seasonal recycled water storage reservoirs will allow the District to utilize 100% of its recycled water. Every gallon of recycled water used for irrigation, toilet flushing or industrial processes, saves a gallon of drinking water for potable purposes.

