



Understanding the Facts: Palos Verdes Reservoir



The Metropolitan Water District is a regional water wholesaler that imports water from the Colorado River and the northern Sierra and delivers it to communities across Southern California, including Palos Verdes. Water from Metropolitan's treatments plants is brought into the Palos Verdes area, then delivered to California Water Service for distribution to homes, businesses and fire suppression systems, with support from West Basin Municipal Water District.

As part of Metropolitan's water delivery infrastructure, we own and operate the Palos Verdes Reservoir, as well as various large pipelines that bring water into the community from three different treatment plants. This system ensures reliable water delivery to the Palos Verdes Peninsula and nearby communities in the event of a wildfires, earthquakes, or other emergency. Metropolitan has maintained this same level of reliability, even with the Palos Verdes Reservoir out of service.



Status of the Palos Verdes Reservoir

Palos Verdes Reservoir is a treated water reservoir built in 1939. It is not used to store water for use in dry years. Rather, it is a regulating reservoir, buffering fluctuations in flow caused by daily changes in water demands. Regulating reservoirs help maintain relatively constant water flows in the large pipelines that supply the region.

Palos Verdes Reservoir has been out of service since March 2022 to maintain the quality of the water provided to local communities and to facilitate upgrades to a key pipeline that supplies the reservoir and community, the Second Lower Feeder.

When the reservoir was taken out of service, a new bypass pipeline was installed that delivers the same flow and pressure that the reservoir provided, ensuring all demands, including for fire suppression, are met as effectively as when the reservoir is in use.

Since Palos Verdes Reservoir is a treated water reservoir, covered to protect water quality and comply with regulatory requirements, it is not accessible for firefighting by helicopters.

The future long-term use of Palos Verdes Reservoir is under evaluation. With lower water demands and resulting water quality challenges, the reservoir cannot be used in its current configuration.

Wasn't the reservoir out of service before?

In 2009, after 60 years of use, Palos Verdes Reservoir was taken out of service for needed improvements and maintenance, including a new liner, cover, and seismic upgrades. Construction was completed in January 2019 and the reservoir was returned to service and it was periodically used until 2022.

Reliable water for Peninsula communities in emergencies

Metropolitan has taken multiple measures to ensure the Palos Verdes Peninsula and nearby communities have reliable water in the event of a wildfire, earthquake, or other emergency:

Record water in storage: Metropolitan has a record amount of water in storage with 3.8 million acre-feet of water (an acre-foot of water is nearly 326,000 gallons, about the amount used annually by three typical Southland households).

Infrastructure investments: To maintain reliable water deliveries with the reservoir out of service, a new bypass pipeline was installed that delivers the same flow and pressure that the reservoir provided, ensuring all demands, including for fire suppression, are met as effectively as when the reservoir is in use.

Multiple ways to deliver water: Metropolitan operates multiple regional pipelines, service connections and other infrastructure, in addition to the bypass line, that draw water from various sources and reservoirs to serve the Palos Verdes Peninsula. If one pipeline is disrupted in an emergency, Metropolitan has alternative ways to deliver water to the area, and from multiple sources.

Future of Palos Verdes Reservoir challenged by nitrification

Southern California has made great strides in water conservation – reducing per person potable water use by 45% since 1990. This increased efficiency is critical to the region's sustainability and long-term water security.

However, the lower water demand meant that when Palos Verdes Reservoir was returned to service in 2019, water remained in the reservoir longer than desired, leading to a growing water quality challenge known as nitrification.

What is Nitrification? Nitrification can occur in drinking water systems that use chloramines as a disinfectant, particularly during periods of low water flow and warmer temperatures. With climate change and lower water demands, severe nitrification events may become more frequent.

Metropolitan, like many water agencies, uses chloramines to help maintain the quality of treated drinking water as it travels through our distribution system. Chloramines are formed when ammonia is added to chlorine. Nitrification involves the conversion of ammonia to nitrite which, if not properly managed, can reduce the disinfectant residual in a distribution system.

A reduction in disinfectant residual could potentially affect water quality by decreasing the system's ability to address potential contamination within a distribution system.

Because of the risk of nitrification and out of an abundance of caution, Metropolitan only utilized the reservoir intermittently between 2019 and 2022 for specific operational needs, while always ensuring water quality was maintained. For example, the reservoir provided reliable deliveries when nearby pipelines were shut down for maintenance and inspection.

Metropolitan is evaluating the future operation of the reservoir, considering evolving water demands, and operational needs. The reservoir property remains a critical piece of water infrastructure, along with its associated pipelines, helping to provide reliable water deliveries to the Palos Verdes Peninsula.



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The Metropolitan Water District of Southern California is a state-established cooperative that, along with its 26 cities and retail suppliers, provide water for 19 million people in six counties. The district imports water from the Colorado River and Northern California to supplement local supplies, and helps its members to develop increased water conservation, recycling, storage and other resource-management programs.