

IRVINE RANCH WATER DISTRICT POLICY POSITION ORANGE COUNTY WATER RELIABILITY IMPROVEMENTS

Revised: October 26, 2026

Issue Summary:

Unplanned interruptions in a retail water agency's ability to provide water can have dire consequences to its customers and local economy. It is in the best interest of all water agencies to work with each other to ensure that all customers in Orange County have access to reliable supplies of water. Irvine Ranch Water District is positioned from a geographic, supply, and hydraulic perspective to assist Orange County water agencies to implement new projects and programs that will further increase water supply and system reliability countywide.

Background:

Orange County water agencies remain dependent on imported water supplies. These imported water supplies are provided through major pipeline systems that deliver treated and untreated water from Metropolitan Water District of Southern California (MWD) and through water deliveries made from IRWD's Baker and Howiler Water Treatment Plants as well as other retail agency treatment facilities. The water sources for the Baker and Howiler Plants consist of untreated Colorado River water from MWD (available through the Santiago Lateral) and water captured in Irvine Lake. MWD's Diemer Water Treatment Plant provides most of the treated imported water supply to Orange County.

The regional potable water supply system serving South Orange County has limited looping or redundancy options and has limited local storage capacity. A large earthquake or other disaster could damage the East Orange County Feeder Number 2 (EOCF No. 2) or the Allen McCulloch Pipeline, potentially causing significant reductions in water deliveries to South Orange County for multiple days. A major earthquake that damages the Diemer Water Treatment Plant could potentially interrupt South Orange County water supplies for more than a month.

Many South County water agencies have constructed storage facilities to rely upon during such potential supply interruptions and some of the agencies have developed recycled water systems that diversify their water supplies and improve reliability. While these storage and recycled water projects have improved regional supply reliability, they are not expected to provide complete potable system and supply reliability for South Orange County.

2004 South County Reliability Plan:

In September 2004, the Municipal Water District of Orange County (MWDOC) and the South Orange County retail water agencies (with support from the Bureau of Reclamation) completed a four-year reliability planning effort with the release of the South Orange County System Reliability Plan. The Plan appraised system risks and identified projects to increase system reliability. The Plan concluded that water system reliability in South Orange County could be substantially increased by accessing the Orange County Groundwater Basin. It also concluded that some emergency water supplies for retail water agencies in South Orange County could be provided through IRWD's potable water distribution system. It identified IRWD interconnections that would strengthen the backbone distribution system of the South County water agencies.

Emergency Interconnect Agreement:

The 2004 Plan was the impetus for the Emergency Service Program Participation and Operations Agreement for South County and Irvine Ranch Water District Interconnection Projects (Emergency Interconnect Agreement) that was executed in November 2008. This agreement led to the construction of pump station improvements and pipeline connections that provide emergency supplies to participating South County water agencies. The agreement acknowledges that IRWD's ability to deliver such emergency supplies will diminish over time with flow reservations ending by the year 2030. The maximum flow reservation is limited to 50 cfs for up to 30 days and 3,000 AF per incident. The program has been used six times to provide water to South County agencies from IRWD's system. Any groundwater delivered to South County through the Emergency Interconnect Agreement is exchanged, accounted for, and charged as imported water upon the end of each event.

Baker Water Treatment Plant:

The plan also contemplated the Baker Water Treatment Plant and an inland well field connected to the EOCF No. 2. Construction of the Baker Plant began in 2014 and was placed into service in January 2017. The project provides 28.8 million gallons per day of drinking water to IRWD and four South Orange County water districts. The Baker Plant was designed to treat MWD supplies from the Colorado River. It also can treat native water available from Irvine Lake. IRWD holds exclusive rights to store and use water from Irvine Lake.

Recent Orange County Reliability Studies:

MWDOC has performed three Orange County reliability studies with similar findings. These studies were completed in 2016, 2018, and 2023. The conclusions from these studies are consistent in that they recommend South County agencies pursue access to groundwater from the Basin and groundwater banking projects. The conclusions from these studies are described below:

2016 OC Reliability Study:

In December 2014, MWDOC initiated a comprehensive assessment of the current and future water supply and system reliability for all of Orange County. This evaluation, known as the "Orange County Water Reliability Study", was completed in 2016. MWDOC led the study in collaboration with the managers from MWDOC's member agencies, Orange County Water District (OCWD) as well as the cities of Anaheim, Fullerton and Santa Ana. These managers formed the Working Group that provided direction and technical support to the study. IRWD staff actively participated in the Working Group.

The findings of the 2016 OC Water Reliability Study indicated that if MWD and its member agencies were to implement a reasonable list of projects that have a high likelihood of success, that future water supply shortages in the Brea / La Habra and Orange County Basin areas would be small enough to manage through enhanced groundwater management and additional water conservation efforts. The findings further indicated that shortages in the South Orange County

area would require additional water supply projects and programs to improve both supply and system reliability during shortage periods. The study demonstrated that substantial improvements in South County reliability could be achieved through access to water banking projects, water use efficiency efforts, and access to emergency groundwater supplies from the Orange County Groundwater Basin. Such improvements could be realized without having to invest in costly base loaded supplies from sources such as seawater desalination projects. Base loaded supplies from such sources would not be needed in most years and would provide limited benefit to Orange County.

2018 OC Reliability Study:

In February 2019, MWDOC published its 2018 Orange County Reliability Study, which was based on a more advanced approach to modeling imported supplies from MWD. The study concluded that emergency supply needs are the major driver for water reliability projects in South County. It concluded that emergency driven shortages in South County can be met in the future through extension of the Emergency Interconnect Agreement and the introduction of groundwater from the Basin into the EOCF No. 2 pipeline. The study also concluded that South County should consider securing access to Extraordinary Supplies through participation in the IRWD Water Bank.

2023 OC Reliability Study:

In its 2023 Orange County Reliability Study, MWDOC relied upon a better understanding of climate change and declining availability of imported water from MWD. It also evaluated the benefits and uncertainties associated with MWD's proposed advanced recycled water treatment project and the California Department of Water Resource's proposed tunnel(s) project to convey water around the Sacramento-San Joaquin River Delta. The study recommended that Orange County water agencies make additional investments in recycled water projects, water use efficiency, access to water banking programs, expanded use of groundwater, and desalination projects.

OCWD Policy to Assist South County:

In July 2021, the OCWD Board of Directors adopted a policy to assist South County agencies during emergencies. The policy principles call for OCWD to work with South County agencies to explore providing access to groundwater when imported supplies are unavailable and to coordinate the effort with any extension of the Emergency Interconnect Agreement. The policy further states that any South County access to groundwater must be consistent with the OCWD District Act, financially benefit OCWD, and not negatively impact OCWD's operations. The OCWD District Act requires that any program benefits involving Basin storage of water must accrue primarily to properties within the OCWD District boundaries (i.e., the Groundwater Producer Agencies).

Conveying Groundwater into EOCF No. 2:

The EOCF No. 2 is a regional pipeline that is held in trust by MWD for members of a Joint Powers Authority (JPA) and the capacity owners in the pipeline. IRWD is one of 15 Orange County water agencies that own capacity in the EOCF No. 2. The pipeline is used to deliver treated water from MWD's Lower Feeder. MWD operates and maintains the pipeline. The JPA agreement and capacity assignment agreements do not establish mechanisms for resolution of disputes or for the introduction of non-MWD supplies of water into the pipeline. The introduction of groundwater into the EOCF No. 2 is likely to require written amendments to the JPA and capacity assignment agreements. Such amendments would require signatures of all the capacity owners.

MWD Administrative Code:

The introduction of groundwater into the EOCF No. 2 for delivery to South County agencies during an emergency would need to occur through MWDOC and would be governed by Section 4519 of MWD's Administrative Code. This provision of the code would allow delivery of groundwater into the EOCF No. 2 in an emergency when MWD is physically unable to make deliveries of imported water due to a natural disaster or other catastrophic event lasting greater than seven days. There would need to be no feasible alternative to delivery water to the affected South County agencies. The determination of such non-feasibility and the approval of introduction of groundwater into the EOCF No. 2 would be at the discretion of MWD's General Manager. MWDOC would assume all risk of any adverse water quality or system impacts due to the introduction of groundwater. MWDOC would pay all MWD's direct costs and administrative fees incurred as a result of the emergency deliveries. MWDOC has agreed with MWD to participate in a pilot project to assist in the development of protocols and procedures for implementing Section 4519.

South Orange County Interconnection Study:

IRWD and MWDOC cooperated in a planning level analysis of alternatives for IRWD to continue providing emergency supplies through the IRWD potable water system to South County agencies beyond the current termination date of the Emergency Interconnect Agreement. The study evaluated supplies available from the IRWD Dyer Road Wellfield, IRWD demands, and hydraulic capacities. A study report was prepared by consultants at Dudek in April 2019. The study concluded that viable solutions exist to convey groundwater from the Dyer Road Wellfield into the EOCF No. 2.

IRWD Water Supply Reliability Improvement Programs:

Since the Board adopted the 2018 version of the policy position paper, IRWD has implemented reliability improvement programs with South Coast Water District (SCWD) and Serrano Water District (SWD). In 2024, IRWD executed a Water Purchase and Sale Agreement with SCWD to improve SCWD's water supply reliability and diversity. The agreement provides for the delivery of 3 cubic feet per second (cfs) of Baker Water Treatment Plant production to SCWD from IRWD's capacity in the plant.

In early 2025, Serrano Water District (SWD) transferred its interests in Irvine Lake, the Howiler Treatment Plant, and associated conveyance facilities to IRWD. Upon completion of the transfer, IRWD entered into a Water Service Reliability Agreement through which IRWD provides water supplies to SWD from a connection to IRWD's potable system and from supplies treated at the Howiler Treatment Plant.

Extending IRWD Water Bank Benefits to Orange County Agencies:

As IRWD continues to implement its water banking programs in Kern County, it will become possible to share this reliability benefit with other water agencies, including those within Orange County. Between 2018 and 2021, IRWD held discussions with MWDOC to implement a shared reliability pilot program that would provide access to emergency supplies from IRWD's Water Bank to other Orange County water agencies. MWDOC concluded in January 2022 that its member agencies had insufficient interest in the program to warrant further discussions.

IRWD intends to establish a guideline for the pricing of water from the IRWD Water Bank to prepare for MWDOC member agency interest in the IRWD Water Bank that is likely to occur during a future major disruption in imported water supplies. IRWD's Policy Position Paper on Water Banking, Transfers and Wheeling provides guidance on when IRWD will be positioned to share reliability benefits from the IRWD Water Bank.

Policy Principles:

Following are policy principles to help guide IRWD in advocating for and pursuing an extension of the Emergency Interconnect Agreement as well as projects and programs to assist Orange County water agencies in improving water supply and system reliability.

- IRWD should work with all the water agencies in Orange County to ensure that all agencies have access to water supplies for use during emergency conditions.
- Orange County water agencies should be encouraged to pool resources (proportional to benefits) to finance the facilities necessary to achieve supply and system reliability. MWDOC should work with affected agencies to encourage participation and should act as a facilitator on behalf of the beneficiary agencies.
- IRWD supports efforts by MWDOC to secure the ability to convey groundwater in an emergency through the EOCF No. 2. IRWD and MWDOC should coordinate with capacity owners in the pipeline, promote written amendments to the pipeline JPA and capacity agreements, and secure the written approval of MWD consistent with its Administrative Code.
- IRWD should work with MWDOC, OCWD and the South County agencies to amend the Emergency Interconnect Agreement in pursuit of projects that continue the ability to deliver emergency supplies through the IRWD system, including groundwater supplies introduced into the EOCF No. 2.

- IRWD should work with the Groundwater Producers, MWDOC, and OCWD to ensure that groundwater supplies introduced into the EOCF No. 2 for emergency use in South County, are exchanged, accounted for, and charged for as imported water through contract provisions extending the Emergency Interconnect Agreement.
- The Groundwater Producers and OCWD staff should work together to identify ways to optimize the management of the Basin to increase water in storage, reduce pumping costs, and increase dry-year water supply reliability.
- Any storage and exchange program within the Basin should first be made available to the Groundwater Producers and should benefit the producers consistent with OCWD District Act.
- Any program to assist South County agencies with supply reliability using water from the Basin, must be vetted with the Groundwater Producers. It must also be compliant with the OCWD District Act and not infringe on other agency jurisdictions. The supply needs of the Groundwater Producers must be met first and the producers must be protected from cost impacts or any infringement on groundwater rights.
- IRWD and other agencies providing emergency supplies must recover costs for any capital improvements, operations, maintenance, energy, administrative processes, replacements, and refurbishments of facilities used to assist South County agencies with supply reliability.
- Use of IRWD infrastructure by South County agencies should be subject to current and future availability, with the needs of IRWD's customers taking top priority.
- IRWD should establish a guideline for the pricing of water from the IRWD Water Bank to prepare for future MWDOC member agency interest in the IRWD Water Bank that is likely to occur during emergencies.
- IRWD should consider further using its rights to store and use water from Irvine Lake, its capacity rights in the Baker Plant, and other IRWD water supply assets to provide shared water supply reliability benefits to South County.
- Any sharing of benefits from IRWD supplies projects with Orange County water agencies should not result in negative impacts to the ability of IRWD to meet the water supply needs of its service area, increase rates, or financially impact its customers.
- IRWD should encourage and work with MWDOC to regularly re-evaluate the water supply and system reliability needs of South County agencies and explore options for making infrastructure improvements and developing programs to meet those needs.