

Municipal Water District of Orange County 2018 Water Reliability Study Summary

Prepared by Orange County Coastkeeper



Providing Orange County with a Cost-Effective and Reliable Water Supply

Municipal Water District of Orange County (MWDOC)¹ recently completed a Water Reliability Study² to assess Orange County’s water supply and demand through 2050. The evaluation included a review of the region’s ability to meet water needs during droughts, earthquakes and other disasters and various alternative ways to ensure residents have a secure source of water. The study is designed to inform decisions about the purchase of imported water and the development of new local water sources.

The MWDOC studied concluded that:

- The Poseidon desalination project is the most expensive of the alternative water sources evaluated.
- The Poseidon desalination project is the most financially risky of the alternative water sources evaluated.
- Orange County water agencies have less expensive ways of ensuring that residents have dependable continuing supplies of water.
- The MWDOC study should inform public agency decisions on water supplies to help ensure ratepayers don’t overpay for their water.

Table 5-4. Cost Summary for Orange County Water Projects

| Water Project | Capital Cost in Initial Year (\$M) | Annual O&M Cost in Initial Year (\$M) | Total Unit Cost in Initial Year (\$/AF) | Total Unit Cost in Year 2050 (\$/AF) |
|--|------------------------------------|---------------------------------------|---|--------------------------------------|
| Poseidon Desalination – OC Basin ⁽¹⁾⁽⁵⁾ | \$1,041.1 | \$34.9 | \$2,197 | \$3,519 |
| Poseidon Desalination – SOC ⁽¹⁾⁽⁵⁾ | \$433.4 | \$15.7 | \$2,132 | \$3,485 |
| Doheny Desalination – SCWD ⁽¹⁾⁽²⁾ | \$107.2 | \$6.2 | \$1,622 | \$3,225 |
| Doheny Desalination – Regional ⁽¹⁾ | \$133.1 | \$13.9 | \$1,712 | \$3,296 |
| San Juan Watershed Project ⁽¹⁾ | \$148.5 | \$10.3 | \$1,521 | \$3,257 |
| Cadiz Water Bank – SMWD ⁽³⁾ | NA | NA | \$1,276 | \$3,236 |
| Cadiz Water Bank – Retail ⁽³⁾ | NA | NA | \$1,652 | \$3,710 |
| Strand Ranch Water Banking – Pilot ⁽³⁾ | NA | NA | \$1,971 | NA |
| Expanded SOC Emergency Water ⁽⁴⁾ | \$15.0 | \$3.0 | NA | NA |

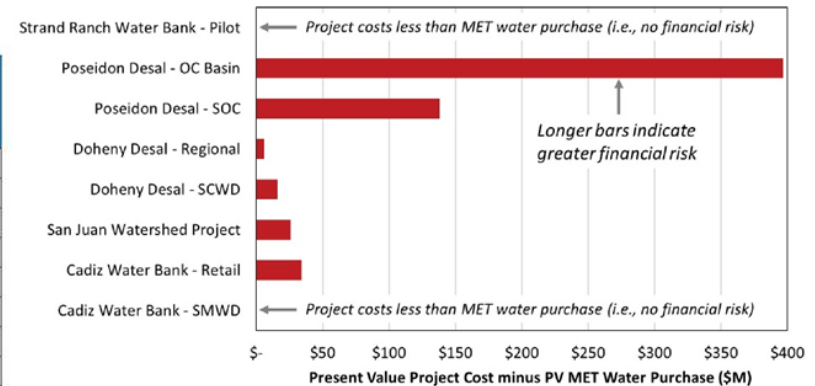


Figure 5-5. Potential Downside Financial Risk, Based on Scenario 1B

¹ MWDOC helps supply water for Orange County residents and businesses through purchases of imported water from the Metropolitan Water District. MWDOC is a public agency that serves in a wholesale role and sells that water to other Orange County water utilities. (OR AGENCIES?)

² The 2018 Water Reliability Study https://www.mwdoc.com/wp-content/uploads/2019/02/2018-FINAL-OC-Study-Report_Final-Report_02-01-2019-with-appendices.pdf builds on a [2016 study](#), and is updated to reflect new investments like California WaterFix and new conditions like the proposed Drought Contingency Plan designed to reduce the risk of an official shortage on the Colorado River.

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North and South Orange County

North Orange County consists of the Orange County Water District (OCWD) service area and the Brea/La Habra area. Both have ample groundwater, while South Orange County imports almost all of its water. The MWDOC study analyzed the respective water needs and alternatives for OCWD and South Orange county. The overarching conclusion is that North Orange County can rely on its large aquifer to manage its way through droughts and disasters, and should evaluate new local supply projects based on cost-effectiveness. South Orange County is much more vulnerable to drought and disaster-related shortages of imported water and must develop local supplies to ensure water reliability.

- **North Orange County:**

- Local groundwater makes up more than 75% of North Orange County's supplies. With effective groundwater management, this region can even manage potential shortages that occur only about once every 20 years with conservation mandates alone.
- The projected average shortage for OCWD is 13,500 AF. That is less than 1/4 of the amount of water that would be produced by Poseidon's proposed seawater desalination plant (56,000 AF per year).
- MWDOC concludes that OCWD has a number of affordable options to meet even worst-case scenario water needs, including capturing and storing rainwater behind Prado Dam, or through the West Orange County Wellfield, or Santa Ana Conservation and Conjunctive Use Projects.
- The Carson water recycling project may be the cheapest new water supply available to the OC Basin, pending the final terms and conditions.
- MWDOC concludes that Poseidon's seawater desalination plant is the least cost-effective and financially riskiest water supply alternative. The plant would produce 4x the average amount of water needed and that water will have to be purchased whether needed or not.

- **South Orange County:**

- The most cost-effective local supply option for South Orange County is the Doheny seawater desalination plant³, which uses new underground intake technology to reduce harm to sea life with lower operations and maintenance costs.
- South Orange County has additional options that are also less expensive than water from the Poseidon project.

³ Orange County Coastkeeper supports the Doheny desalination plant

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Countywide Water Demand (Section 4.1 of MWDOC report)

2020 projected water demand: 517,000 AF)

2050 Projected water demand: 560,000 AF

2050 Projected average new water needed: 42,200 AF (OCWD 13,500 AF and SOC 28,700 AF)

Price of Existing and Proposed Water Supplies

Groundwater from Orange County Water District: \$472/AF

Metropolitan Water District (MWD) Tier 1 (ready to drink) water: \$1015/Acre Foot (AF)

Anticipated price range of Tier 1 MWD water by 2050: \$3,000/AF NOTE: this rate includes the cost of California WaterFix (table 2.7 of MWDOC report)

For comparison, the projected price of an acre-foot of Poseidon water in initial year of operation is \$2,132 for South Orange County and \$2,197 for North Orange County. In 2050, the projected price is \$3,485 for South Orange County and \$3,519 for North Orange County. (table 5.4 of MWDOC report)

Findings & Recommendations – 2018 OC Reliability Study

MWDOC's Recommendations for the OC Basin –

- OCWD should evaluate all of the available supply options before they move forward with future investments
- Carson Indirect Potable Reuse Project may be the next least costly supply for OCWD. MWDOC & OCWD should work together to fully evaluate this opportunity.
- OCWD is pursuing the Santa Ana River Conservation and Conjunctive Use Project (SARCCUP) to develop extraordinary supplies (drought protection). If supplies are available, OCWD and MWDOC should evaluate their use in other portions of OC.
- The study indicated minimal system (emergency) supply needs for the OC Basin, but recommends that all retail agencies review their needs for backup generators for emergency response throughout Orange County.

