San Diego Union-Tribune: San Diego's water desalination efforts could get boost in federal funding

July 27, 2021

Desalination projects in the San Diego area could get millions in federal funding under a bill Rep. Mike Levin introduced Tuesday.

The *Desalination Development Act* would provide $260 million over five years for desalination projects across the country, including the City of Oceanside's Mission Basin Groundwater Purification Facility, which converts brackish flows into potable water, said Levin, D-San Juan Capistrano.

It also sets environmental standards for projects that get federal funding, with requirements for energy efficiency, wildlife protection and water conservation.

Levin said our federal government should invest in desalination to enhance local water sources, especially while California's communities confront climate-driven droughts.

"Climate change is increasing the frequency and intensity of extreme drought," Levin said. "This is a big challenge for our water supply. We've got to advance anything we can to increase our supply of drinking water, and we've got to do it in a sustainable way."

Levin said he hopes the bill will be included in the bipartisan infrastructure packages under consideration in Congress. The House of Representatives passed a $715 billion package of transportation and water funding earlier this month, and the Senate is debating a roughly $1 trillion bipartisan infrastructure package.

If the desalination funding doesn't go through that legislation, Levin said it could be included in a broader $3.5 trillion spending plan that Democrats expect to introduce through the budget reconciliation process.

The desalination bill would pay 25 percent of project costs for desalination systems, up to $20 million per project, and it would give precedence to facilities in areas facing severe drought conditions.

It also sets criteria for funding, to make sure projects comply with state environmental laws and are compatible with local ecosystems.

To qualify for federal funding, desalination projects must reduce reliance on imported water, use renewable energy as much as possible to power the desalination process and maximize energy efficiency.

Funding recipients also have to show they have water conservation strategies in place and are taking steps to capture and recycle stormwater and wastewater in their regions.

The systems also must be designed to reduce impacts on marine life and avoid harming coastal wildlife.

A common way desalination produces fresh water is by forcing saltwater through reverse osmosis filters that remove salts, other minerals and bacteria. The method has been used as a supplemental water resource in the San Diego area for decades.

Since 1992 Oceanside wells have pumped brackish water from the Mission Basin area, near the municipal airport and San Luis Rey River, through reverse osmosis filters, to generate potable water.

In 2019, Oceanside added two new wells and a "brine optimization" system that extracts a higher percentage of fresh water from each well. With those additions, the desalination system provides about 15 percent of the city's water supply.

The Sweetwater Authority also has produced drinking water from brackish groundwater at the Reynolds Desalination Facility since 1999. It underwent a $42 million expansion in 2017 through a partnership with the City of San Diego, and now produces 10 million gallons per day — enough to supply 18,000 families, according to the authority.

Desalination moved further into the spotlight in 2015, when the privately run Poseidon Water opened its plant in Carlsbad, producing 50 million gallons per day — enough to supply 7 to 10 percent of the regional water supply.

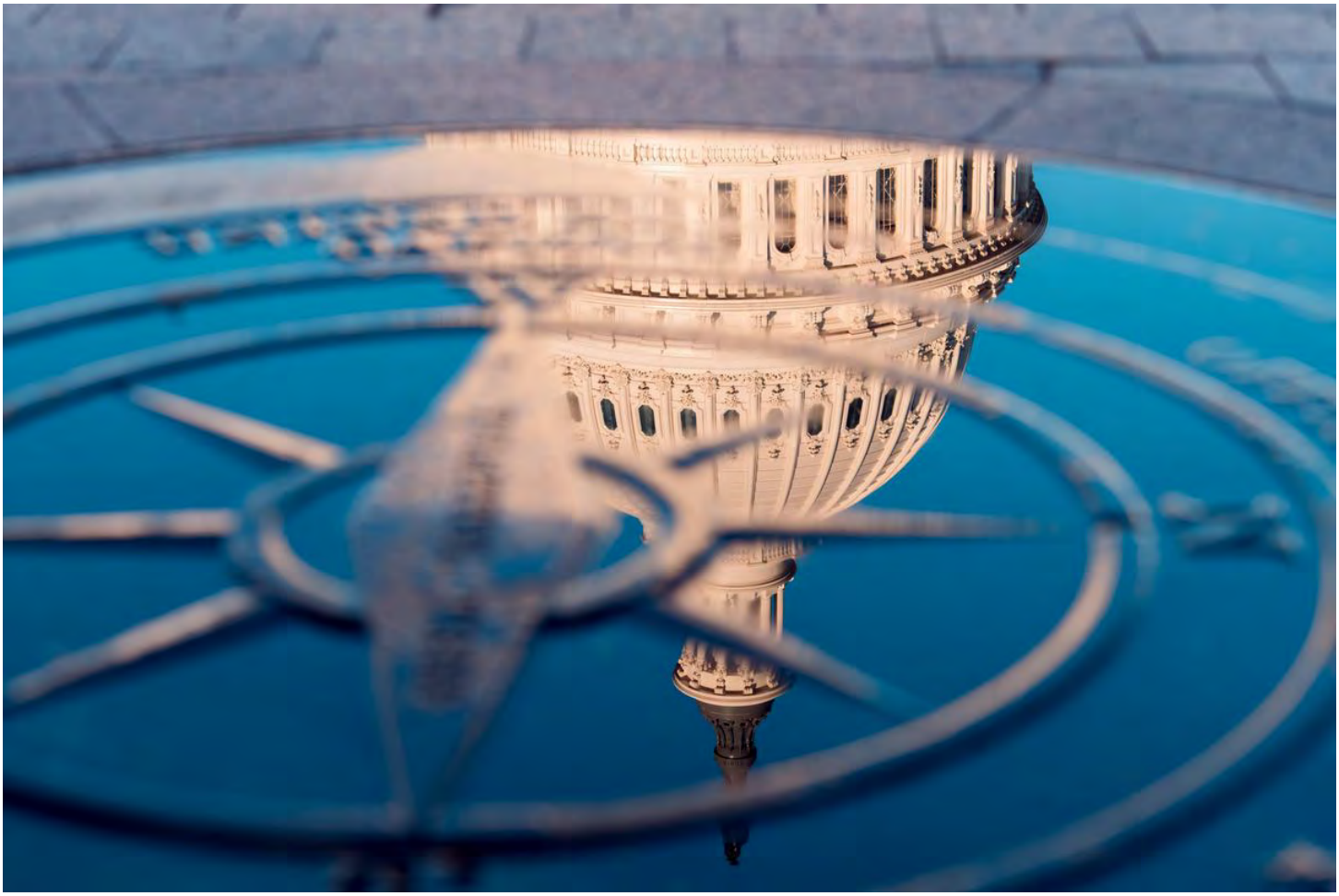
Another potential project is in the pipeline with Olivenhain Municipal Water District, which supplies customers in Encinitas, Carlsbad, San Diego, San Marcos, Solana Beach and neighboring communities. In 2019, the district began tests to see if it could successfully operate a desalination system and estimated the facility would cost $30 million if it moves forward.

“For a drought-prone coastal community like ours, desalination is very viable, and can be done in an environmentally responsible manner, because we have an urgent and fundamental need for clean drinking water.” Levin said.

Levin is introducing the bill with Rep. Jared Huffman, D-San Rafael, chair of the House Natural Resources Subcommittee on Water, Oceans, and Wildlife.

By: Deborah Sullivan Brennan
Source: **San Diego Union-Tribune**

Reps. Mike Levin and Nancy Mace Introduce Bipartisan Bill to Support Environmentally Responsible Desalination Projects



April 28, 2022

Washington, D.C. – Today, U.S. Representatives Mike Levin (D-CA) and Nancy Mace (R-SC) introduced the bipartisan *Desalination Research Advancement Act*, which would reauthorize the Bureau of Reclamation's desalination research grant authorities and increase its funding authorization from $5 million per year to $20 million per year through FY 2026.

The Bureau of Reclamation's Desalination and Water Purification Research (DWPR) Program provides funding for desalination efforts that reduce environmental impacts, lower energy consumption, and develop more advanced desalination technologies. Currently the DWPR Program is prohibited from providing more than $1 million in total grants for academic institutions, effectively preventing federal investments in modern, innovative desalination and water purification research, as academic institutions are typically the first to take risks on new technologies. Rep. Levin's bill would increase the cap on annual funding for academic research

grants under the program to $15 million. The bill would also add research on approaches to better monitor and decrease the impact of seawater desalination on coastal ecosystems to the DWPR Program's list of priority funding areas.

"As we confront increasingly frequent and intense droughts in California, we must advance desalination projects that use the latest technologies to protect our environment while increasing our local supply of drinking water," **said Rep. Levin**. "This bipartisan bill will ensure the federal government is making adequate investments in academic institutions and others that are doing this critical work, which can support projects like the South Coast Water District's Doheny Ocean Desalination Project. I look forward to partnering with Rep. Mace to advance this bill and help secure water independence for communities across the country."

"I represent many coastal communities in the Lowcountry of South Carolina, and I know how important the desalination process is in providing clean drinking water. By re-authorizing grants in the Desalination and Water Purification Research Program, we can ensure our technology can provide clean drinking water for years to come," **said Rep. Mace.** "This legislation will have a direct impact on the Hilton Head Public Service District's Reverse Osmosis Drinking Water Treatment Facility and help it treat brackish groundwater at an affordable price for ratepayers."

Previously, Rep. Levin reintroduced legislation to raise the funding authorization for the Bureau of Reclamation's desalination grant program. The *Desalination Development Act* authorizes $260 million over the next five years for desalination projects and creates new environmental safeguards for the funded projects. The bill expands a federal program that has delivered funding for local projects like the South Coast Water District's Doheny Ocean Desalination Project and the City of Oceanside's Mission Basin Groundwater Purification Facility Well Expansion and Brine Minimization project. Similar to Rep. Levin's bill, the bipartisan infrastructure law included $250 million for desalination projects, as well as $1 billion for water recycling projects.

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Olivenhain tries desalinating groundwater

Phil Diehl ⋮⋮ 4/4/2019

Construction starts this month on a $1.5 million test well to show whether desalinated groundwater could supplement the drinking water supply for 86,000 customers of the Olivenhain Municipal Water District.

The district serves parts of Encinitas, Carlsbad, San Diego, San Marcos, Solana Beach and neighboring communities, and relies almost entirely on water imported from the Colorado River and Northern California. Like agencies throughout Southern California, it's looking for ways to diversify its water supply.

Drilling will begin in about two weeks on a 120-foot-deep well in the San Dieguito River watershed, water district officials said. Beginning around May, the well will be pumped for a year or longer at different rates to determine its effects on the water levels and quality in nearby existing wells on private property within the aquifer.

The district would have to produce at least 1 million gallons of water per day for the project to work, which probably would require a minimum of two wells.

Feasibility studies show the project could be cost-competitive with other water sources and that it would have no negative effects on other wells or the environment, district General Manager Joey Randall said in a recent presentation to the Del Mar City Council.

Groundwater was pumped heavily for agricultural irrigation through the 1970s in the area and some of those wells remain in use, Randall said.

Construction of the complete desalination project, should the pilot well prove successful, would cost about $30 million, he said. That would include the wells, water filtration equipment and pipes linking to the water supply and for the concentrated brine removal. Most of the money is expected to come from government grants.

Groundwater desalination is rare in Southern California, but the Oceanside municipal water district has been doing it for 20 years.

Oceanside announced earlier this year it will receive a $2.6 million grant to add two more wells, that will bring the city's total to 10, all in the Mission Basin aquifer near the city's airport along the San Luis Rey River.

With the additional wells, the city expects to get about 15 percent of its water from the Mission Basin aquifer.

Pushed by the increasing cost of imported water, agencies throughout the region also are increasing their reliance on recycled water.

Another local source is the Carlsbad seawater desalination plant, completed in 2015. It produces about 50 million gallons per day or about 10 percent of the drinking water used throughout San Diego County.

OMWD receives $650,000 in grant funding

encinitasadvocate.com/news/sd-cm-enc-0323-omwd-grant-20180315-htmlstory.html

March 15, 2018 2:06 PM PT

Olivenhain Municipal Water District received notice recently that it has been awarded $650,000 in grant funding from California's Department of Water Resources (DWR) to continue exploring the feasibility of brackish groundwater desalination in the San Dieguito Valley.

In an effort to boost water supply in the wake of the state's historic, five-year drought, DWR awarded Proposition 1 funding to eight projects throughout California. OMWD's award will facilitate the design and construction of a test well and field testing of treatment technologies for its San Dieguito Valley Brackish Groundwater Desalination Design Pilot.

Should results remain positive following the design pilot testing, OMWD intends to proceed with an environmental impact analysis and construction of a brackish groundwater desalination project. The potential desalination project would extract groundwater from wells located in the San Dieguito Valley Groundwater Basin and deliver it to a nearby desalination facility. Treated through reverse osmosis, a filtration process that improves water quality by removing impurities such as salts, hardness, and other dissolved minerals, the water would be available for uses like drinking, sanitation, and fire protection, without adversely impacting the environment or current water users.

The project would also provide water supply redundancy should imported supplies be cut off. The minimum project goal is to generate a potable water supply of at least 1 million gallons per day, enough to provide the water needs of over 2,000 families of four. The cost of the water produced must also be competitive with projected imported water rates and other feasible local supply development projects in order for the project to move forward.

"The development of a local, sustainable water source is becoming increasingly important as imported water costs continue to rise and water availability becomes more uncertain," said OMWD Board Director Bob Topolovac. "This project would lesson OMWD's heavy reliance on imported water, increasing reliability for our ratepayers."

OMWD has conducted a series of studies by which to determine the viability of extraction and treatment of brackish groundwater within OMWD's service area. In September 2014, OMWD was successful in achieving $250,000 in grant funds to conduct a feasibility study in the San Dieguito Basin to evaluate its potential as a new local water supply via brackish groundwater desalination. Study results were favorable in terms of sustainable yield, water quality, brine management considerations, the ability to complete a project while avoiding significant environmental impacts, and consistency with existing local and regional water management plans.

Once all data from the design pilot is analyzed, OMWD's board will decide whether the project moves forward. With board approval, OMWD could begin producing a new, locally sourced drinking water supply as early as 2022.

To learn more about OMWD's efforts to explore groundwater desalination as a potential local source of potable water, visit www.olivenhain.com/groundwater. — *News release*

www.encinitasadvocate.com /news/sd-cm-nc-olivenhain-water-20190404-story.html

Olivenhain to start desalinating groundwater with test well

Phil Diehl ⋮⋮ 4/5/2019

By Phil Diehl

Construction starts this month on a $1.5 million test well to show whether desalinated groundwater could supplement the drinking water supply for 86,000 customers of the Olivenhain Municipal Water District.

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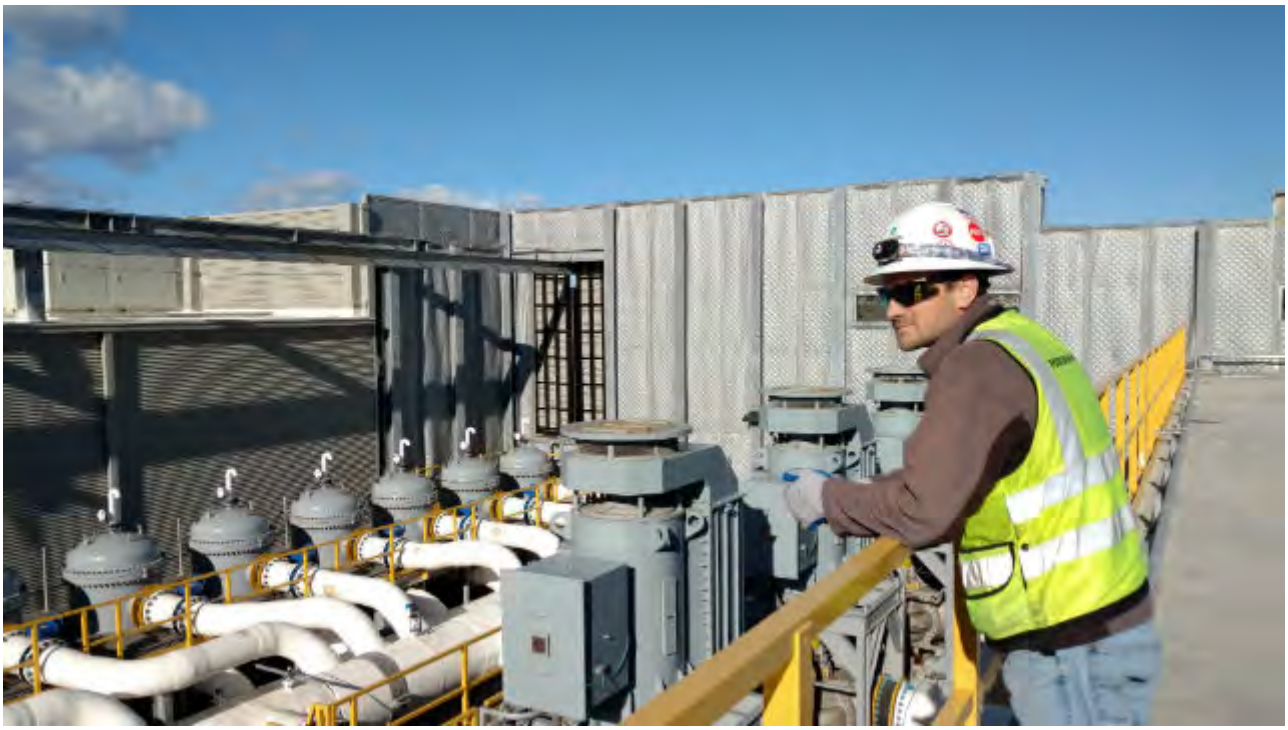
—Phil Diehl is a reporter for The San Diego Union-Tribune

San Diego Region Gets $500,000 for Water Technology Projects

More by Chris Jennewein ⋮⋮ 1/7/2019



The Metropolitan Water District of Southern California has awarded the San Diego region $500,000 for three water supply technology projects.

The grant will fund projects by the San Diego County Water Authority, Padre Dam Municipal Water District and a collaboration by the City of San Diego and Olivenhain Municipal Water District to diversify water supplies.

The three projects are:

- New seawater intake screens at the Claude “Bud” Lewis Carlsbad Desalination Plant. The screens are designed to minimize the amount of fish larvae that enter the water treatment process.
- New treatment technology at the East County Advanced Water Treatment Project.
- Brackish water optimization in the San Dieguito River watershed.

“These pioneering projects showcase our region’s ongoing commitment to developing locally controlled water supplies to sustain 3.3 million people and our $220 billion regional economy,” said Jim Madaffer, chair of the water authority’s board.

The grant is part of $3.5 million awarded across Southern California.

San Diego County's Evolving Water Supply

Erik Anderson ⋮⋮ 12/20/2012

Environment

Monaliza Noor

Wes Danskin, USGS

The Olivenhain Water District hopes to know soon whether a three month drilling project hits pay dirt. The agency is spending just over $400,000 to see if there's a groundwater reservoir that the district can turn into drinking water. The drill is easy to spot, for those looking. An American flag waves at the top of the forty foot tall rig.

San Diego County's Evolving Water Supply

Geologists and San Diego water managers are hoping to tap into an ancient underground river that might run under the ecologically delicate San Elijo Lagoon.

"So if you're going down Interstate 5 and look over toward San Elijo Lagoon, you'll likely see us," says Wes Danskin, research geologist of the U.S. Geological Survey.

Danskin is using this drill to find out if the rocks below are hiding a vein of water worth tapping. Danskin sweeps his arm across the high ground to the east as he talks about the potential. He says this has been the edge of the North American continent for 60 million years.

"And the rain that falls in the mountains, slowly filter into that sediment and rock, and moves very slowly over a period of tens of thousands of years to eventually empty into the ocean, flowing beneath us and emptying into the ocean," says Danskin.

The crew here used a drill to bore a 1,200 foot deep hole into the narrow strip of land between the interstate and lagoon. They are currently pumping air into the well, hoping to force water up.

"As the air is injected, it bubbles up, somewhat like a geyser and you'll see the hose dancing and moving as the air bubbles flush out, sporadically," Danskin says as he points at the jumping water line.

Next to the pump sits a filter unit that about the size of an ocean going shipping container. Steam rises from the water as it squirts and splashes into what's essentially a large mechanical pan. A warm blanket of air rises from the water.

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"Part of this heat is that we're pumping from about a thousand feet of depth," says Danskin.

Monaliza Noor

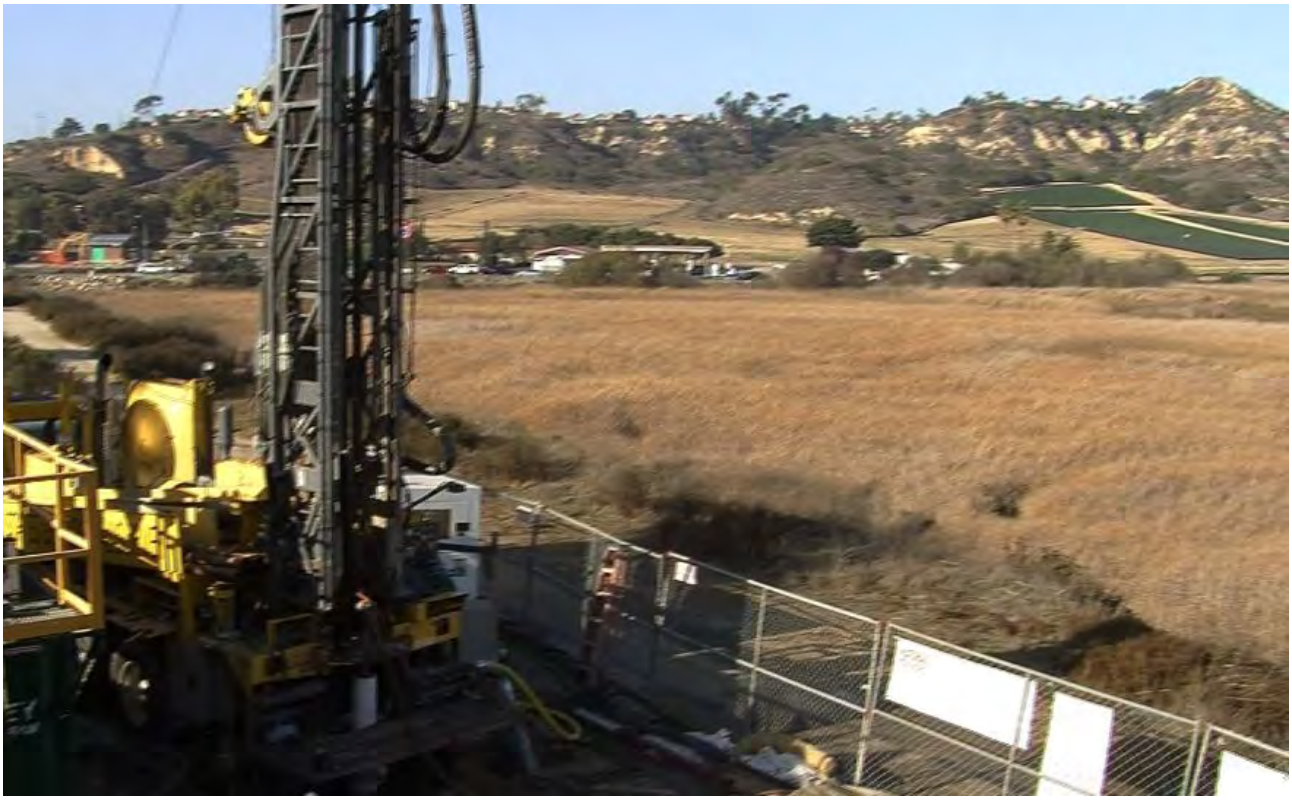
Right now the slurry is a mixture of sand, stone and water. But once the well hole is cleaned out, Kimberly Thorner hopes it will be mostly water. She's the general manger of the Olivenhain Water District. San Diego's last drought pushed the water agency to start seeking out local water.

"As we started looking at the data, one of the interesting things that we found was, in this lagoon, in San Elijo Lagoon in the early 1900's, the Cardiff Oil Company dropped a well 800 feet looking for oil and they found water," says Thorner.

Water, not oil, is the liquid that packs an economic punch in San Diego these days. If crews do tap an underwater aquifer, the water district is poised to invest $20 million in a plant that would purify the brackish soup. That's why the drilling project holds so much hope.

"It's to find out what's down there. What the potential is, so we can kinda get an idea if this is the area or do we need to look elsewhere," says Thorner.

A successful local drilling project could allow the agency to pump 1.5 million gallons of water a day, from the ground.



Monaliza Noor

This project is a small but important piece of the region's water supply portfolio according to Ken Weinberg, director of Water Resources for the San Diego County Water Authority.

"We're limited in what we can do here. Geologically, we don't have big groundwater basins. But where we can recover groundwater, that's important," says Weinberg.

Local supplies already meet 16 to 17 percent of demand in San Diego County, and that's sharply higher than 5 percent of locally produced water back in 1990.

"Seawater desalination, that's going to raise it another 7 percent," says Weinberg. "And we've got more recycling under development, more groundwater projects, we're going to have a pretty healthy part of our water supply coming from local sources here in San Diego County."

The soaring price of imported water is part of what's making these local projects so attractive, according to Weinberg, who goes on to say the price of water has only gone up in recent years and there is no indication it will retreat anytime soon.

Erik Anderson

I focus on the environment and all the implications that a changing or challenging environment has for life in Southern California. That includes climate change, endangered species, habitat, urbanization, pollution and many other topics.

See stories by Erik Anderson

How is climate change impacting your everyday life?

0/500

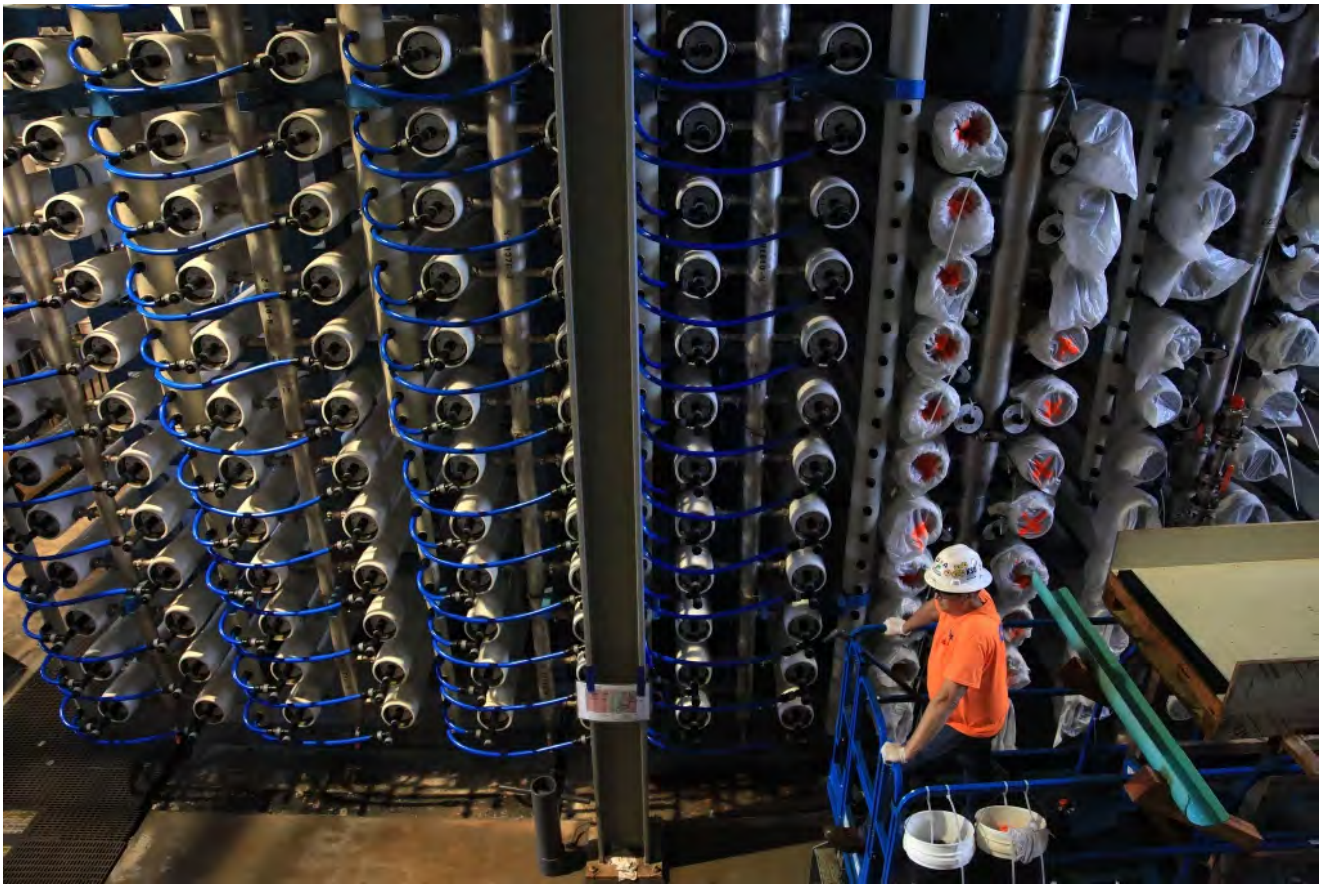
Your contact info

San Diego’s water desalination efforts could get boost in federal funding

sandiegouniontribune.com/news/politics/story/2021-07-27/san-diego-desalination-efforts-could-get-boost-from-federal-funding

Deborah Sullivan Brennan

July 27, 2021 8:26 PM PT



Desalination is a process that turns ocean water into fresh drinking water by removing salt and impurities. One method, using reverse osmosis membranes, is used at the Poseidon desalination plant in Carlsbad. Rep. Mike Levin introduced a bill to provide more federal funding for desalination facilities in drought-prone areas.

(Misael Virgen/San Diego Union-Tribune/Zuma Pre)

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Levin is introducing the bill with Rep. Jared Huffman, D-San Rafael, chair of the House Natural Resources Subcommittee on Water, Oceans, and Wildlife.

Diversification and Efficiency

Water Authority and Member Agencies Win Funding for Pioneering Research

Three projects designed to enhance water supply reliability across the San Diego region secured a total of $500,000 in grant funds for advanced planning activities from the Metropolitan Water District of Southern California in December.

The funding will allow the Water Authority, Padre Dam Municipal Water District and a collaborative effort by City of San Diego and Olivenhain Municipal Water District to take a variety of supply development plans to the next level, continuing the region's successful efforts to diversify its water supplies.

The funding was praised by local water leaders. The three funded projects were:

1. New seawater intake screens to support the Claude "Bud" Lewis Carlsbad Desalination Plan
2. Brackish water optimization and integrated planning in the San Dieguito River watershed
3. A new treatment technology at the East County Advanced Water Treatment Project

The East County Advanced Water Purification Program is a collaborative effort between Padre Dam Municipal Water District, Helix Water District, the City of El Cajon, and the County of San Diego to create a local, drought-proof drinking water supply using innovative technology to purify recycled water.

> "These projects will help remove barriers to the development of local water supplies. And grant funding helps minimize the impact on ratepayers."

Local water district shows financial strength

admin ⋮⋮ 10/7/2011

ENCINITAS — Fitch Ratings reaffirmed in September that Olivenhain Municipal Water District's bond rating of AA+ with a stable outlook, citing OMWD's "excellent financial performance in the face of drought and recession as well as strong liquidity."

Fitch reported that OMWD shared characteristics with AAA-rated agencies, such as debt service coverage and its debt-to-equity ratio. With respect to the latter, Fitch noted that OMWD's ratio "is very close to the 1.6x median for AAA-rated utilities, while OMWD's debt-to-net plant assets ratio is very low at 24 percent."

To prevent reliance on increasingly expensive imported water, OMWD has invested in diversifying its water supply portfolio by expanding its recycled water system and studying the development of a brackish groundwater desalination facility.

Diversification efforts were praised by Fitch, as a source of more reliable water supplies for OMWD customers at more predictable prices. Though OMWD may issue bonds to finance important new water facilities, maintaining its exemplary bond rating will afford it lower interest rates when doing so. Favorable interest rates can help to alleviate the upward pressure on water rates resulting from increasing wholesale water costs.

"OMWD customers benefit directly from their water agency's financial performance. This rating is a testament to the well-founded policies and principles guiding both our water supply and financial planning efforts." Said Mark Muir, treasurer of OMWD's board of directors.

Bond ratings are key indicators of the financial health and long-term sustainability of an agency. OMWD has seen a positive, upward trend with its bond ratings. Standard & Poor's upgraded OMWD to a highly favorable AA+ rating in 2009, and Fitch followed suit in 2010. OMWD's outlook is considered by both agencies to be stable.

Planning for dry times: The West considers more reservoirs and aquifers

The Columbian ⋮⋮ 12/26/2022

SAN DIEGO, Calif. — As parched California receives much needed rain and snow this winter, some local water officials are calling on state leaders to invest in new infrastructure projects that will store freshwater for inevitable dry times to come.

The worst megadrought in 1,200 years is devastating the water supply in the Western United States. It's drying up the Colorado River basin, a major North American river system, while also depleting reservoirs and underground aquifers and forcing communities to make drastic cuts to their freshwater use.

Western states can no longer rely on snowmelt and rain to supply their communities in a drier, more arid landscape caused by climate change, water experts say.

Environmental groups have called for increased conservation efforts, such as pushing people to limit watering of ornamental lawns and upgrade to more efficient appliances. And they want officials to invest more in wastewater recycling or desalination projects. But some local water officials in California and across the West see a massive opportunity in storing rainwater in new or expanded reservoirs and groundwater aquifers.

“We can’t just keep conserving our way out of this,” said Gary Arant, general manager at Valley Center Municipal Water District, which serves communities throughout San Diego County. “Our supplies are becoming less and less reliable, our population is growing, our economy is growing. We’re at a point where we need to make investments in the statewide water system.”

March 19, 2023

Arant is one of several dozen local water officials, along with cities and business associations, that are part of the Solve the Water Crisis statewide coalition. The group is calling on California leaders to invest more heavily in water infrastructure and better coordinate the response to the drought, including by creating new ways to store freshwater.

With $8.3 billion in new federal money designated for drought resilience nationwide, as part of the bipartisan infrastructure law Congress passed earlier this year, now is the time to make those investments, Arant argued.

But critics say the water shortage requires other solutions. Needed actions include water recycling, cutbacks, desalination, wetlands restoration and more efficient use, especially by agriculture, said Heather Cooley, director of research at the Pacific Institute, an Oakland-based think tank focused on water issues.

“Adding more to storage isn’t really doing much,” Cooley said. “It doesn’t create more water. We’ve really met our limits of traditional supplies.”

In recent years, the drought has meant less snow in the mountains of California. When that snow melts in the spring, it replenishes reservoirs statewide. But snowpack has been unreliable in this three-year drought.

Without snowpack, precipitation instead has come in the form of sporadic and brief periods of heavy rain and atmospheric rivers — regions in the atmosphere that carry water vapor that can drop massive amounts of precipitation. The West’s water systems were not designed to handle such intense downpours, said Andrew Ayres, a research fellow with the Public Policy Institute of California, a nonpartisan think tank.

But with the right stormwater capture projects, that water not only can be stored in above-ground reservoirs but also injected underground to recharge depleted aquifers, especially in agricultural parts of the state that have over-pumped to meet their needs, he said. Local water officials also can divert rainwater to recharge ponds, where the water will slowly seep underground.

“Our success in managing the really tough dry times is going to start depending more and more on how we manage the wet times,” he said. “Increasingly, we’re going to have to do more deliberate planning, not only

for new projects, but effective management of existing projects to get ourselves set up for dry times that are coming in the future."

Despite recent heavy snows in the Sierra Nevada Mountains, the past three years have been the driest on record in California. As of the week of Dec. 4, 85% of the state is still in severe, extreme or exceptional drought conditions, according to the U.S. Drought Monitor, which is operated out of the University of Nebraska-Lincoln in partnership with the federal government.

With these ongoing drought conditions, the state cannot rest easy when it gets a brief reprieve of precipitation, said Kimberly Thorner, general manager of the Olivenhain Municipal Water District, which serves parts of San Diego County. The state must act now to invest in its water reserves, she said.

In October, U.S. Interior Department officials allocated $210 million throughout the West for new water infrastructure. This includes three projects in California that would raise dams and create a new reservoir off the Sacramento River that would capture rainwater. That new Sites Reservoir is set to break ground in 2024.

California lawmakers also have earmarked $8 billion in new water infrastructure over the next three years, which includes hundreds of millions for storage projects. The statewide water strategy, which Democratic Gov. Gavin Newsom released in August, outlines several ways the state could expand storage opportunities through a "streamlined" permitting process.

Thorner, who is also part of the Solve the Water Crisis coalition, applauds these commitments from federal and state officials. However, she said she will continue to press state officials to make historic investments in water infrastructure, including new or raised reservoirs.

"A plan is great, but we need action," she said. "We need to do something different."

Adding more reservoirs might be challenging, however. The most economical and effective sites already have reservoirs, said Jay Lund, vice director of the Center for Watershed Sciences at the University of California, Davis.

"Building new or expanded reservoirs is often expensive and provides much less water than people might think," he said in an email to Stateline. "New reservoirs also often involve sizable additional environmental damages. So, calls for new reservoirs usually go unrequited."

In lieu of new reservoirs, it has become more common throughout the West to instead store additional water as groundwater, pumping it into underground aquifers for later use, Lund said. This tends to be less expensive and more flexible during droughts, he said, adding that it is easier to permit.

Storage isn't the issue, said Cooley, of the Pacific Institute. It's the water supply. She points to the Colorado River basin, which provides water for Arizona, California and Nevada and has four times the storage

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Lake Mead and Lake Powell, two of the country's largest reservoirs, are dangerously low and are projected, by some estimates, to hit a water level known as dead pool in the next two years if conditions continue, officials warn. Dead pool refers to a water level too low to operate the electricity-generating turbines in the dam or to allow water to flow downstream.

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Cooley said that water shortage requires Western states to look for nontraditional supplies, including conserving water, recycling wastewater, desalinating ocean and brackish water, fixing leaks in the water distribution system, replacing ornamental lawns and investing in more efficient home appliances, such as dishwashers and washing machines.

State and local water officials also should invest in restoring wetlands and forests, which act as natural conduits that flow rain into groundwater aquifers, Cooley said. Overall, there are millions of acre-feet of water in untapped potential, according to an April report from the Pacific Institute, which Cooley helped author.

California's agricultural sector, which uses more than 70% of the state's water supply, also needs to use that water more efficiently and effectively, she added.

But farmers already are feeling the pinch, said Mike Wade, executive director of the California Farm Water Coalition, a nonprofit that educates the public on the agricultural sector's water supply.

Draconian cuts to water use are not going to sustain California farmers' ability to feed the rest of the country, he said. Moving ahead with new water projects, such as the Sites Reservoir, is how the state should proceed, he said.

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The uncertainty over state water actions leaves local water officials in a precarious position as they face potential cutbacks to water usage, possibly forcing them to limit residents' intake, said Arant, at the Valley Center Municipal Water District.

"I've got my hand on the valve and my eyes on the horizon looking for rain clouds," he said. "And if I don't see rain clouds, I'm going to start squeezing the valve."

Meet San Diego County ‘Stewards of Water’

⋮ 1/31/2023

“What comes out of the tap today has been in planning for the last 20 years.” This quote has been ringing in my ears every time I turn on the faucet since my interview with Kimberly Thorner and Sandra Kerl, General Managers for the Olivenhain Municipal Water District and the San Diego County Water Authority.

What goes into making water come out of the faucet? “A lot of people think, ‘Water falls from the sky. Therefore, you guys store it, you treat it, and it comes.’ They don’t realize what actually goes into what comes out of the tap. It’s the same misconception that I kind of had in the beginning (of this job),” said Thorner.

Common Water Misconceptions & Questions

- ***Misconception: A couple of rainy days will solve the problem. Fact: Long dry spells in between rain can outweigh the benefits of a few rainy days.*** “It’s not particularly useful to talk about the ‘last drought’ or the ‘current drought,’” said Kerl. “Since 2014, we’ve only had a few wet years, and [our region is] getting hotter, drier, and heading toward aerification of the West. We have drier conditions than we’ve ever seen before, and that is expected to continue.”

- ***Misconception: We need rain, we need it here, and we need it now. Fact: It matters where and even when it rains***. “People get excited if it rains in San Diego County, but it hits, and then it goes,” said Thorner. “If it snows in the Sierras or Colorado, we’re more excited about that. But we’re even down to the timing of WHEN it snows. If it snows too early and gets warm, you don’t get the Spring melt runoff.”

- ***Question: Where can I focus my water conservation efforts? Answer: 68 percent of water is used outdoors. Fixing leaks and adjusting landscape can make a huge difference.*** “Taking your irrigation down to 2-3 days a week is such a big impact,” said Thorner. “Take advantage of the free water use efficiency evaluations (sponsored by the Water Authority). Someone comes out and gives you minor tweaks and adjustments. It’s a fantastic tool to reduce your water use and still have the landscaping that you want.”

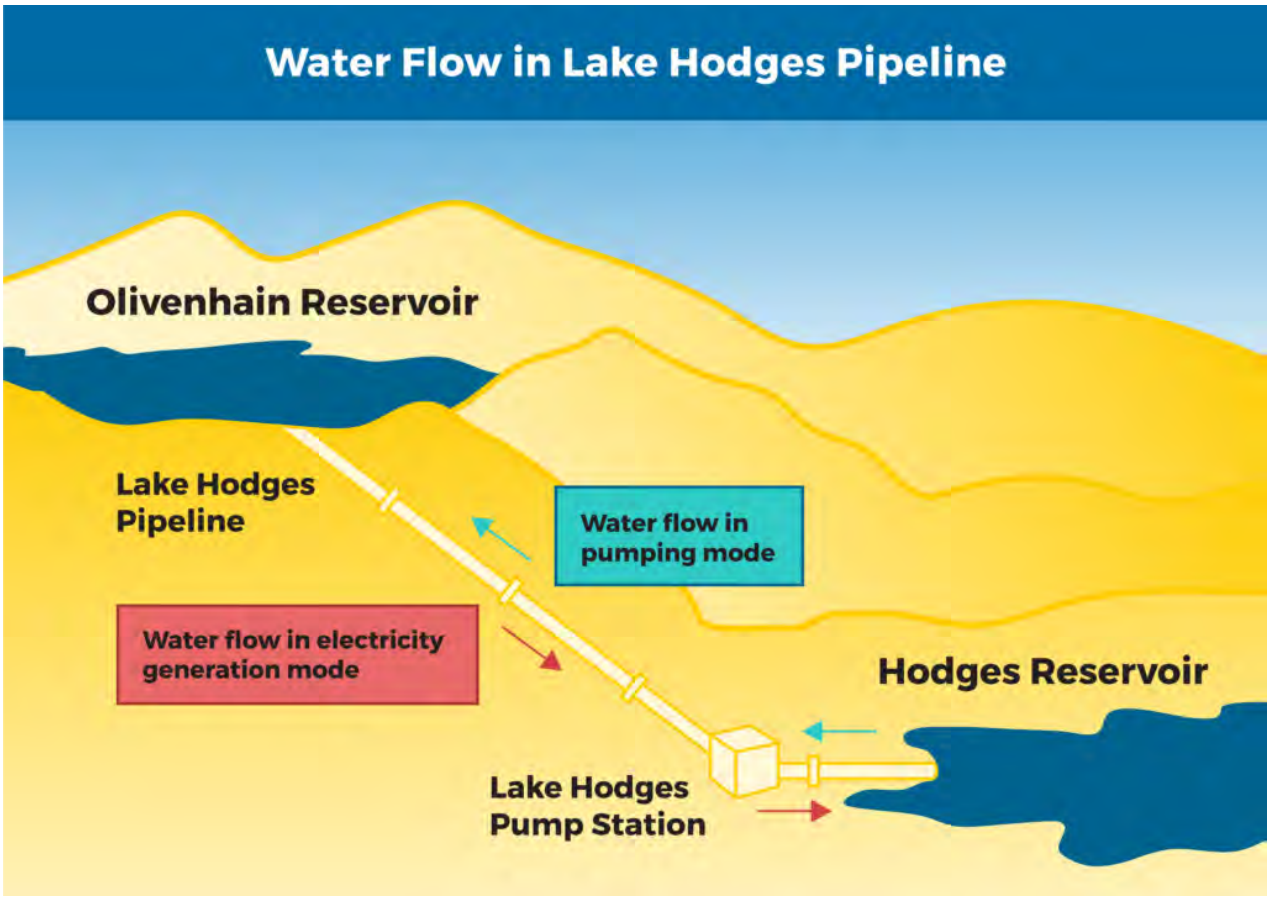
- ***Question: How much water do we actually conserve as a region? Answer: San Diego County has reduced its per capita water consumption by 40% since 1990***. That amounts to a reduction from 235 gallons per person per day in 1990 to 126 gallons per person per day in 2022. Countywide, over 16,000 homes and businesses have used WaterSmart Checkups to make sure they are using water efficiently, and 42 million acre-feet of grass has been removed in the region using rebates. “We’re very appreciative of what [customers have] done so far in conversation and supporting the investments regionally,” said Kerl. “We’ve made great progress in conservation. We’re continuing to ask folks to do more. That’s part of the whole picture of becoming water resilient.”

What does the San Diego Water Authority Do?

“As a water wholesaler, the San Diego County Water Authority is ultimately responsible for ensuring there is sufficient water supply to serve the region with 3.3 million residents and a $24 billion economy,” said Kerl.

The Water Authority secures and delivers water to its 24 member agencies who then sell it to residential, commercial, and agricultural customers. They also maintain 310 miles of large-diameter pipes, own and operate a dam and a water treatment facility, partner in a public/private desalination plant, and advocate at the state and federal levels for investments in San Diego County water infrastructure.

“There needs to be increased investment (in water infrastructure) and San Diego is a great place to do that because of our track record of delivering on projects outside of the region and our ongoing need,” said Kerl.



Water & Electricity

If that were not enough, the Water Authority looks for opportunities to create hydroelectricity with the water supply to support the energy grid. They own and operate the Lake Hodges hydroelectric facility, and they create in-line hydroelectricity at Rancho Peñasquitos, by using the pipeline pressure to generate power. Their biggest current energy project is a partnership with the City of San Diego to build a 500-megawatt energy storage project at the San Vicente Reservoir.

“San Diego has the most rooftop solar in the state of California. To be able to utilize that effectively when the sun goes down, you need to be able to store that power for high demand periods,” said Kerl. “Doing this project will help stabilize the grid and reduce the chance of rolling blackouts.”

Projects like this also help reduce the cost of water for ratepayers by monetizing infrastructure investments.

“The San Vicente energy storage project, if it moves forward, will create a venue stream for the city and for the Water Authority to reduce the cost of water. We’re looking for those opportunities wherever they exist,” said Kerl.

What does a “Member Agency” do?

As one of the Water Authorities’ member agencies, Olivenhain Municipal Water District, serves about 86,00 residents from San Diego, Solana Beach, Carlsbad, and Encinitas. They supply water to customers, create

hydroelectricity, treat wastewater, create recycled water, and even have their hand in parks and recreation.

After receiving the Elfin Forest Recreation Reserve land for one dollar from the Bureau of Land Management, OMWD received permission to build a reservoir there on the condition that they also operate it as an open space recreational reserve.

Eflin Forest Recreational Reserve operated by Olivenhain Municipal Water District

Diversification of the Water Supply

Prior planning is truly the way to prevent poor performance when it comes to the region's water supply. One of the ways the Water Authority plans is by diversifying its supply portfolio. While the Colorado River is a main water source, the Water Authority and its 24 member agencies have developed potable water reuse and desalination projects.

"For [OMWD], we used to be 100% potable water. Now 15% of our supply is recycled water. Golf courses, HOA common areas, parks, and medians now use recycled water," said Thorner. "We're also studying the feasibility of a brackish desalinization plant within our service area and utilizing automated meters (AMI) that connect to towers so customers can get instantaneous water use information."

Colorado River Supply

The Water Authority has also invested in infrastructure to support the water supply. This is part of the reason that California, and San Diego County, have high-priority rights on the Colorado River water.

“Our water out of the river was secured both through conservation practices as well as lining two earthen canals. The saved seepage conserved water that was transferred to San Diego over long-term agreements,” said Kerl. This means that the government-mandated demand cuts don’t apply to California or San Diego County (yet), but the Water Authority continues to diversify the region’s supply.

“We’re looking for ways to support others who depend on the river to reduce their take,” said Kerl. “The situation on the river is very challenging, but through what we’ve done in new investments, supplies, and conservation, we’ve been supporting actions for the river to be healthy for a long time.”

Challenges of the Water Industry

North County is facing many of the same challenges that we’re seeing on a national and global scale. Kerl and Thorner agreed that one of their biggest challenges is balancing affordability for customers while supply chain issues create rising costs for them as suppliers.

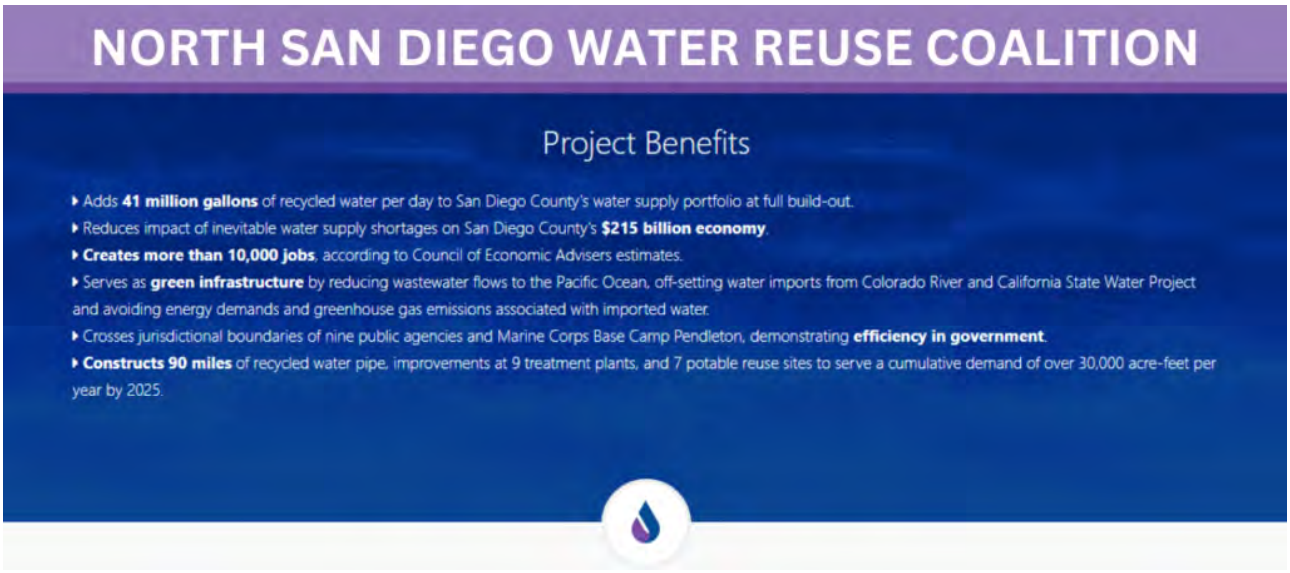
“Change is happening globally, nationally, regionally, and locally, every minute of every day, and it impacts our ability to provide water,” said Kerl. “The pandemic, civil tension, the inflation – it is just a ball of stuff that never stops, and we’re always trying to put our A-Game forward to keep up with it.”

“Water doesn’t have a downtime. Water is life, and you have to supply it. Balancing the challenges of the world that everyone is facing, and maintaining the water supply reliability and delivery is a daily battle,” said Thorner.

North San Diego Water Reuse Coalition

Since 2012, nine cities, water agencies, and wastewater agencies have partnered to form the North San Diego Water Reuse Coalition. Their goal is to expand recycled and potable reuse water throughout San Diego County. Each of them have a water recycling project, some with wastewater plants, some with recycled water needs.

They meet monthly to discuss how they can enhance the use of recycled water without regard to jurisdictional boundaries. Recently, they were awarded $24 million in federal funding to enhance potable water reuse throughout the region.



The Buck Stops with You

Both Thorner and Kerl have been located in San Diego County for most of their professional careers. Thorner became the General Manger of OMWD in 1996. A lawyer by training, she received two job offers: one, to build the Olivenhain Water storage project, and two, to work for the general counsel. When asked which one “felt better” to her, she chose the water job.

“The part that I love (about my job is) every single day there is something different. As general manager, the buck stops with you to make sure the safe reliable water supply makes it to the residents,” said Thorner.

Thorner loves the diversity of North County, the ability to go surfing in the morning and hiking in the mountains in the afternoon. “People come here to play, and it’s where we live. Why would you go anywhere else?”

No Higher Mission

Kerl became the General Manager of the Water Authority in 2009 after working as the city manager of La Mesa. After meeting her predecessor, Maureen Stapleton, she became fascinated with the field.

“There are a lot of things you can live without, and water is not one of them. To be responsible for delivering a critical, life-affirming service… there’s really no higher mission to me,” said Kerl.

Kerl grew up in an agricultural community, and so the agricultural industry in North County appeals to her. She takes a lot of pride in the Water Authority’s programs to sustain farming in the region, both because of its economic impact and the quality of life that it provides.

“There’s really no finer corner of the country in my view,” said Kerl. “Part of it is the diversity of the economic base – from biotech, to manufacturing, to farming – and part of it is all the natural assets here.”

Read the story covering Max Villalobos, COO for Kaiser Permanente North County Project here for more content.

Get to know some of North County's entrepreneurs, innovators, and leaders, and learn why they believe this region is a world-class place to do business. If you would like your company featured in "Meet North County Stewards," or if you'd like to nominate someone for an interview, click this link to submit your nomination!

About the Author

Caitlyn Canby loves to discover and share people's stories. She has her bachelor's degree in Communications, Print Journalism with over 8 years of journalism experience. An Escondido native, she just moved back from Catalina Island to North County with her husband and two children to the town of Fallbrook. Caitlyn enjoys collaborating on projects as Marketing and Events Coordinator at SDNEDC, traveling, and exploring new restaurants, venues, experiences, and cultures.

Planning for Dry Times: The West Considers More Reservoirs and Aquifers

Matt Vasilogambros ⋮⋮ 12/15/2022

Read more *Stateline* coverage of how communities across the West are grappling with drought that's worsening because of climate change.

SAN DIEGO, Calif. — As parched California receives much needed rain and snow this winter, some local water officials are calling on state leaders to invest in new infrastructure projects that will store freshwater for inevitable dry times to come.

The worst megadrought in 1,200 years is devastating the water supply in the Western United States. It's drying up the Colorado River basin, a major North American river system, while also depleting reservoirs and underground aquifers and forcing communities to make drastic cuts to their freshwater use.

Western states can no longer rely on snowmelt and rain to supply their communities in a drier, more arid landscape caused by climate change, say water experts.

Environmental groups have called for increased conservation efforts, such as pushing people to limit watering of ornamental lawns and upgrade to more efficient appliances. And they want officials to invest more in wastewater recycling or desalination projects. But some local water officials in California and across the West see a massive opportunity in storing rainwater in new or expanded reservoirs and groundwater aquifers.

"We can't just keep conserving our way out of this," said Gary Arant, general manager at Valley Center Municipal Water District, which serves communities throughout San Diego County. "Our supplies are becoming less and less reliable, our population is growing, our economy is growing. We're at a point where we need to make investments in the statewide water system."

Arant is one of several dozen local water officials, along with cities and business associations, that are part of the Solve the Water Crisis statewide coalition. The group is calling on California leaders to invest more heavily in water infrastructure and better coordinate the response to the drought, including by creating new ways to store freshwater.

With $8.3 billion in new federal money designated for drought resilience nationwide, as part of the bipartisan infrastructure law Congress passed earlier this year, now is the time to make those investments, Arant argued.

But critics say the water shortage requires other solutions. Needed actions include water recycling, cutbacks, desalination, wetlands restoration and more efficient use, especially by agriculture, said Heather Cooley, director of research at the Pacific Institute, an Oakland-based think tank focused on water issues.

"Adding more to storage isn't really doing much," Cooley said. "It doesn't create more water. We've really met our limits of traditional supplies."

Stateline Story October 6, 2022

California Takes Leading Edge on Climate Laws. Others Could Follow.

The Golden State wants carbon neutrality by 2045.

In recent years, the drought has meant less snow in the mountains of California. When that snow melts in the spring, it replenishes reservoirs statewide. But snowpack has been unreliable in this three-year drought.

Without snowpack, precipitation instead has come in the form of sporadic and brief periods of heavy rain and atmospheric rivers — regions in the atmosphere that carry water vapor that can drop massive amounts of precipitation. The West's water systems were not designed to handle such intense downpours, said Andrew Ayres, a research fellow with the Public Policy Institute of California, a nonpartisan think tank.

But with the right stormwater capture projects, that water not only can be stored in above-ground reservoirs but also injected underground to recharge depleted aquifers, especially in agricultural parts of the state that have over-pumped to meet their needs, he said. Local water officials also can divert rainwater to recharge ponds, where the water will slowly seep underground.

"Our success in managing the really tough dry times is going to start depending more and more on how we manage the wet times," he said. "Increasingly, we're going to have to do more deliberate planning, not only for new projects, but effective management of existing projects to get ourselves set up for dry times that are coming in the future."

Despite recent heavy snows in the Sierra Nevada Mountains, the past three years have been the driest on record in California. As of last week, 85% of the state is still in severe, extreme or exceptional drought conditions, according to

the U.S. Drought Monitor, which is operated out of the University of Nebraska-Lincoln in partnership with the federal government.

With these ongoing drought conditions, the state cannot rest easy when it gets a brief reprieve of precipitation, said Kimberly Thorner, general manager of the Olivenhain Municipal Water District, which serves parts of San Diego County. The state must act now to invest in its water reserves, she said.

In October, U.S. Interior Department officials allocated $210 million throughout the West for new water infrastructure. This includes three projects in California that would raise dams and create a new reservoir off the Sacramento River that would capture rainwater. That new Sites Reservoir is set to break ground in 2024.

California lawmakers also have earmarked $8 billion in new water infrastructure over the next three years, which includes hundreds of millions for storage projects. The statewide water strategy, which Democratic Gov. Gavin Newsom released in August, outlines several ways the state could expand storage opportunities through a "streamlined" permitting process.

Thorner, who is also part of the Solve the Water Crisis coalition, applauds these commitments from federal and state officials. However, she said she will continue to press state officials to make historic investments in water infrastructure, including new or raised reservoirs.

"A plan is great, but we need action," she said. "We need to do something different."

Stateline Story June 2, 2022

Water Cuts Are Coming for the West

If Californians don't meet conservation goals, mandatory water cuts are imminent.

Adding more reservoirs might be challenging, however. The most economical and effective sites already have reservoirs, said Jay Lund, vice director of the Center for Watershed Sciences at the University of California, Davis.

"Building new or expanded reservoirs is often expensive and provides much less water than people might think," he said in an email to *Stateline*. "New reservoirs also often involve sizable additional environmental damages. So, calls for new reservoirs usually go unrequited."

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But farmers already are feeling the pinch, said Mike Wade, executive director of the California Farm Water Coalition, a nonprofit that educates the public on the agricultural sector's water supply.

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Stateline Story February 22, 2022

A Parched West Remains Divided on Desalinating Seawater

Environmentalists criticize the technology as economically and ecologically harmful.

Matt Vasilogambros Staff Writer
Stateline

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