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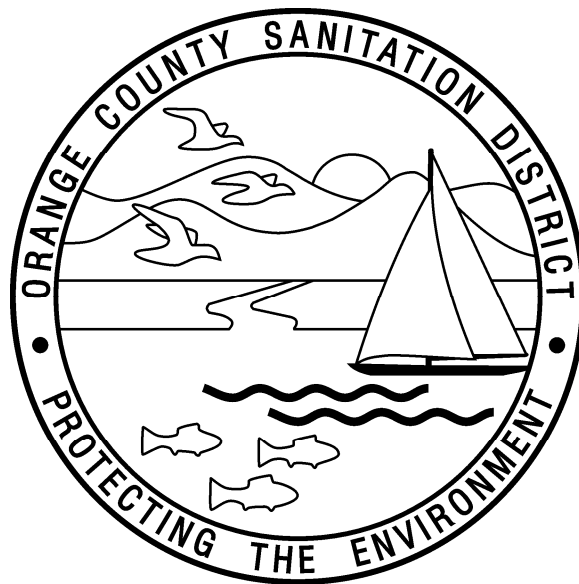
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November 2019

DAILY PILOT

Around Town:

O.C. districts to break ground on final phase of groundwater replenishment system



By DAILY PILOT STAFF
NOV. 7, 2019
1:49 PM

The Orange County Water District and Orange County Sanitation District will host a groundbreaking event Friday for the final expansion of the groundwater replenishment system in Fountain Valley.

The system, billed as the world's largest potable reuse facility, treats sewer water and protects the county's groundwater basin.

The final expansion, set to be complete in 2023, will allow the system to provide enough water for one million people in north and central Orange County.

The groundbreaking ceremony will run from noon to 1:30 p.m. at 18700 Ward St.

ORANGE COUNTY REGISTER

Orange County's pioneering wastewater recycling system embarks on major expansion

The virtually drought-proof program is touted as the largest of its kind in the world.



By [MARTIN WISCKOL](#) | mwisckol@scng.com | Orange County Register
PUBLISHED: November 8, 2019 at 4:01 pm | UPDATED: November 8, 2019 at 8:42 pm

Orange County’s wastewater recycling program, a pioneering idea that’s already touted as the largest of its type in the world, is about to get bigger.

Big enough, in fact, to serve the tap water needs of about 1 million residents, according to the Orange County Water District and Orange County Sanitation District. Dubbed the Groundwater Replenishment System, the project produces water that is half the price of imported water and is virtually immune to both drought and reductions in imports.



The water and sanitation districts, partners in the 11-year-old project, hosted a groundbreaking ceremony Friday to celebrate its expansion. The Fountain Valley event drew about 250 local, state and federal officials, consultants and employees. Actual construction is scheduled to begin next week and be completed in early 2023.

“It’s probably one of the most innovative water systems in the world,” Vicente Sarmiento, chairman of the water district board, told attendees over the whine of the system’s machinery.

The program runs treated wastewater through an additional cleansing process that includes microfiltration, reverse osmosis and ultraviolet light. The result is water that’s purer than imports or storm water. The process removes virtually all contaminants, including any trace of PFAS carcinogens.

The water is then used to replenish the groundwater aquifer, where it’s stored until the Orange County Water District’s 19 member retailers pump it to residential and business customers.

The Orange County Water District supplies water to the north and central parts of the county, accounting for about 2.5 million of the county’s 3.2 million residents. The 103,000 acre feet of water currently produced annually by the recycling project accounts for about 25% of the district’s total water supply, with imported water providing another 25%.

The expansion will increase annual production of the recycled water to 134,000 acre feet and use all of the sanitation district’s reclaimable water, which would otherwise be pumped into the ocean. One acre foot is enough water for about two households of four annually, according to the water district.

Sarmiento reminded attendees at Friday’s ceremony that the concept of making wastewater potable wasn’t even a pipe dream in the 1960s and 1970s. Today, that idea is increasingly being implemented. Just a few miles up the 405 Freeway in Carson, a pilot project was launched in October that could eventually result in a recycled water project producing 150,000 acre feet a year.

Imported water costs Orange County agencies about \$1,100 an acre foot while groundwater suffused with purified wastewater costs them \$587 including pumping costs, according to John Kennedy, Orange County Water District's executive director of engineering and water resources.

GWRS
November 8, 2019

PRESS RELEASE



FOR IMMEDIATE RELEASE

CONTACTS: Gina Ayala, (714) 378-3323, gayala@ocwd.com
Rebecca Long, (714) 593-7444, rlong@ocsd.com

ORANGE COUNTY WATER AND SANITATION DISTRICTS BREAK GROUND ON PROJECT THAT RECYCLES 100% OF AVAILABLE WASTEWATER FLOWS INTO DRINKING WATER FOR 1 MILLION PEOPLE

FOUNTAIN VALLEY, Calif. (November 8, 2019) – Today, the Orange County Water District (OCWD) and Orange County Sanitation District (OCSD) celebrated the Final Expansion of the Groundwater Replenishment System (GWRS) with a groundbreaking ceremony attended by elected officials, project stakeholders and industry professionals.

The Final Expansion of the GWRS is the third and final phase of the project. The GWRS first began operating in 2008 producing 70 million gallons of water a day (MGD) and in 2015, it underwent a 30MGD expansion. When the Final Expansion is completed in 2023, the plant will produce 130 MGD.

“Today marks an important milestone in Orange County’s water future,” said OCWD President Vicente Sarmiento. This is what we work for day in and day out—to provide a high-quality, reliable water supply to 2.5 million people in our service area. Total production will be enough water for 1 million people when the expansion is completed. The GWRS is vital to combatting climate change and sustaining Orange County’s water supplies and its thriving economy.”

The GWRS, the world’s largest water reuse project of its kind, is the result of decades of collaboration between OCWD and OCSD to overcome the stigma associated with these types of projects and bring water reliability to the region.

OCWD and OCSD see wastewater as a resource. Instead of discharging treated wastewater to the Pacific Ocean, OCSD treats it and produces water clean enough to undergo purification at the GWRS. This water is then purified at the GWRS using a three-step advanced process consisting of microfiltration, reverse osmosis and ultraviolet light with hydrogen peroxide. The result is high quality water that meets and exceeds state and federal drinking water standards. This purified water is then injected into a seawater barrier and pumped to recharge basins where it naturally percolates into the

Orange County Groundwater Basin, managed by OCWD, and supplements Orange County’s drinking water supplies. Currently, GWRS water accounts for one-third of the water that is put into the basin. “We are honored to partner with the Orange County Water District in ensuring strict source control of the wastewater and working to increase the amount of water sent to the GWRS,” stated OCSD Board Chairman, David J. Shawver. “We have made significant investments and are dedicated to the prudent use of public funds for this and all future projects benefiting our community.”

The Final Expansion requires a total treated wastewater flow from OCSD of approximately 175 MGD in order to produce 130 MGD of advanced purified recycled water. “This project will allow the region to recycle 100% of OCSD’s reclaimable flows, which will be yet another first in the industry,” added Shawver.

The GWRS is a financially responsible project that produces water at a lower cost than imported water. Funding for the Final Expansion includes \$135 million from the Environmental Protection Agency’s Water Infrastructure Finance and Innovation Act (WIFIA) program and \$1.1 million in grants from the U.S. Department of the Interior Bureau of Reclamation Title XVI Water Infrastructure Improvements for the Nation (WIIN) program.

“The Orange County Water District’s advanced system expansion will benefit the local community, the economy and the environment,” said EPA Pacific Southwest Regional Administrator Mike Stoker. “We are honored to help fund this project and reduce borrowing costs through our WIFIA loan program.”

Additionally, the Final Expansion received the highest ratings for all North Orange County projects submitted through the Integrated Regional Water Management (IRWM) program for Prop 1 grant funding managed by the California Department of Water Resources. The project is currently slated to receive \$3.6 million in grants through the IRWM program. The remaining \$186 million will be funded through the Clean Water State Revolving Fund (SRF) Loan program.

For more information about the GWRS and the Final Expansion, please visit <https://www.ocwd.com/gwrs>.

About the Orange County Water District

The Orange County Water District is committed to enhancing Orange County’s groundwater quality and reliability in an environmentally friendly and economical manner. The following cities rely on the groundwater basin, managed by OCWD, to provide 77% of their water demands: Anaheim, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, La Palma, Los Alamitos, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster and Yorba Linda. For more information about OCWD, please visit www.ocwd.com, like @OCWaterDistrict on Facebook, follow @OCWDWaterNews on Twitter, follow @OCWD on Instagram, and follow Orange County Water District on LinkedIn.

About the Orange County Sanitation District

OCSD is a public agency that provides wastewater collection, treatment, and recycling for approximately 2.6 million people in central and northwest Orange County. OCSD is a special district that is governed by a 25-member Board of Directors comprised of 20 cities, four special districts, and one representative from the Orange County Board of Supervisors. OCSD has two operating facilities that treat wastewater from residential, commercial and industrial sources. For more information, about the Orange County Sanitation District visit www.ocsd.com.

EPA
November 8, 2019



United States Environmental Protection Agency

News Releases from Region 09

U.S. EPA celebrates WIFIA project with groundbreaking at Orange County Water District

11/08/2019

Contact Information:

Soledad Calvino (calvino.maria@epa.gov)

415-972-3512

FOUNTAIN VALLEY, Calif. – Today, the U.S. Environmental Protection Agency (EPA) and the Orange County Water District (OCWD) participated in a groundbreaking ceremony for the Groundwater Replenishment System (GWRS) Final Expansion in Orange County, California. This project is funded in part by a \$135 million Water Infrastructure Finance and Innovation Act (WIFIA) loan.

“Not only will OCWD’s Ground Water Replenishment System provide Orange County residents and businesses with an additional local drinking water supply, it will also ensure the community is more resilient against periods of drought,” **said EPA Pacific Southwest Regional Administrator Mike Stoker.** “Good water quality and wastewater management is vital to our health, communities, and economy. Through the WIFIA loan program, EPA is helping renew our nation’s aging water infrastructure.”

“OCWD greatly appreciates the WIFIA funding that will support public water infrastructure in Orange County,” **said OCWD President Vicente Sarmiento.** “The GWRS Final Expansion will produce enough water for 1 million people, while also recycling 100% of the reclaimable wastewater from the Sanitation District. It’s truly a win-win and we will continue to implement projects and programs that bring increased water reliability to the region.”

Today, the OCWD hosted an event in Fountain Valley, California, to break ground on the GWRS Final Expansion project. Speakers included officials from OCWD, Orange County Sanitation District, State Water Resources Control Board and EPA, as well as elected officials. In August 2018, EPA [announced the closing of this WIFIA loan](#).

Upon completion, the expanded system will purify treated wastewater from the Orange County Sanitation District to produce an additional 30 million gallons per day of drinking water, which will be stored in the Orange County Groundwater Basin. This additional drought-proof drinking water supply reduces the region’s need to import water, benefits the environment through reduced discharges into the ocean, and increases replenishment of the local groundwater source.

The Orange County Water District estimates the project will cost \$310 million. Because the WIFIA program offers loans with low interest rates, the Orange County Water District is expected to save up to \$16 million compared to municipal bonds. Project construction is expected to create 700 jobs and is scheduled to begin in 2019 and be completed in 2023.

Background on WIFIA

Established by the Water Infrastructure Finance and Innovation Act of 2014, the WIFIA program is a federal loan and guarantee program administered by EPA. WIFIA’s aim is to accelerate investment in the nation’s water infrastructure by providing long-term and low-cost supplemental credit assistance for regionally and nationally significant projects.

EPA has issued 14 WIFIA loans totaling over \$3.5 billion in credit assistance to help finance over \$8 billion for water infrastructure projects and create over 15,000 jobs. Through WIFIA, EPA is playing a leading role in President Trump’s efforts to upgrade our nation’s infrastructure, protect public health, and create jobs.

For more information about the WIFIA program, visit <https://www.epa.gov/wifia>.

NS ENERGY

OCWD breaks ground on GWRS final expansion project in California

POWERCLEAN TECHNOLOGY WATER AND WASTEWATER
By **NS Energy Staff Writer** 11 Nov 2019

The Groundwater Replenishment System final expansion project will help in producing an additional 30 million gallons of drinking water per day



Image: EPA supports water treatment plant in California. Photo: Courtesy of DengdaiFengQi/Pixabay.

The US Environmental Protection Agency (EPA) and the Orange County Water District (OCWD) have announced the start of construction on a new Groundwater Replenishment System (GWRS) final expansion project in Orange County, California.

The plant will help in purifying treated wastewater from the Orange County Sanitation District to produce an additional 30 million gallons per day of drinking water. The drinking water will be stored in the Orange County Groundwater Basin.

It is funded in part by a \$135m Water Infrastructure Finance and Innovation Act (WIFIA) loan.

The plant will act as an additional drought-proof drinking water supply source and will reduce the region's need to import water, benefiting the environment through reduced discharges into the ocean and will increase the replenishment of local groundwater.

The total cost of the project is estimated to be \$310m and with the support from EPA's WIFIA programme, the Orange County Water District could save up to \$16m compared to municipal bonds.

EPA Pacific Southwest Regional Administrator Mike Stoker said: "Not only will OCWD's Ground Water Replenishment System provide Orange County residents and businesses with an additional local drinking water supply, it will also ensure the community is more resilient against periods of drought.

"Good water quality and wastewater management is vital to our health, communities, and economy. Through the WIFIA loan program, EPA is helping renew our nation's aging water infrastructure."

During the project's construction phase, 700 new jobs will be created

The construction phase of the project, which is expected to be completed in 2023, could create up to 700 jobs.

Orange County Water District president Vicente Sarmiento said: “OCWD greatly appreciates the WIFIA funding that will support public water infrastructure in Orange County.

“The GWRS Final Expansion will produce enough water for 1 million people, while also recycling 100% of the reclaimable wastewater from the Sanitation District. It’s truly a win-win and we will continue to implement projects and programs that bring increased water reliability to the region.”

EPA announced the \$135m loan to Orange County Water District last August.

U.S. Breaking News

Orange County's pioneering wastewater recycling system embarks on major expansion

November 12, 2019

Orange County's wastewater recycling program, a pioneering idea that's already touted as the largest of its type in the world, is about to get bigger.

Big enough, in fact, to serve the tap water needs of about 1 million residents, according to the Orange County Water District and Orange County Sanitation District. Dubbed the Groundwater Replenishment System, the project produces water that is half the price of imported water, and is virtually immune to both drought and reductions in imports.



Cups of water filtered from wastewater sit on stage as Vicente Sarmiento, president of the Orange County Water District, addresses visitors during an expansion groundbreaking ceremony in Fountain Valley, CA, on Friday, Nov 8, 2019. (Photo by Jeff Gritchen, Orange County Register/SCNG)



Assemblyman Steven Choi (CA-68) joins other officials, including, Vicente Sarmiento, president of the Orange County Water District, striped tie, and David Shawver, chairman of the Orange County Water District, as they toast to, and drink, water that has been filtered from wastewater during an expansion groundbreaking ceremony in Fountain Valley, CA, on Friday, Nov 8, 2019. (Photo by Jeff Gritchen, Orange County Register/SCNG)



Vicente Sarmiento, president of the Orange County Water District, addresses visitors during an expansion groundbreaking ceremony in Fountain Valley, CA, on Friday, Nov 8, 2019. (Photo by Jeff Gritchen, Orange County Register/SCNG)

The water and sanitation districts, partners in the 11-year-old project, hosted a groundbreaking ceremony Friday to celebrate its expansion. The Fountain Valley event drew about 250 local, state and federal officials, consultants and employees. Actual construction is scheduled to begin next week and be completed in early 2023.

“It’s probably one of the most innovative water systems in the world,” Vincente Sarmiento, chairman of the water district board, told attendees over the whine of the system’s machinery.

The program runs treated wastewater through an additional cleansing process that includes microfiltration, reverse osmosis and ultraviolet light. The result is water that’s purer than imports or storm water. The process removes virtually all contaminants, including any trace of PFAS carcinogens.

The water is then used to replenish the groundwater aquifer, where it’s stored until the Orange County Water District’s 19 member retailers pump it to residential and business customers.

The Orange County Water District supplies water to the north and central parts of the county, accounting for about 2.5 million of the county’s 3.2 million residents. The 100,000 acre feet of water currently produced annually by the recycling project accounts for about 25% of the district’s total water supply, with imported water providing another 25%.

The expansion will increase annual production of the recycled water to 130,000 acre feet and use all of the sanitation district’s reclaimable water, which would otherwise be pumped into the ocean. One acre foot is enough water for about two households of four annually, according to the water district.

Sarmiento reminded attendees at Friday's ceremony that the concept of making wastewater potable wasn't even a pipe dream in the 1960s and 1970s. Today, that idea is increasingly being implemented. Just a few miles up the 405 Freeway in Carson, a pilot project was launched in October that could eventually result in a recycled water project producing 150,000 acre feet a year.

Imported water costs Orange County agencies about \$1,100 an acre foot while groundwater suffused with purified wastewater costs them \$587 including pumping costs, according to John Kennedy, Orange County Water District's executive director of engineering and water resources.

As part of Friday's ceremony, Sarmiento invited the officials on stage to a toast with glasses of the purified wastewater.

"The tradition is that we have to finish every last drop," he told them.

Environmental PROTECTION



The World's Largest Water Reuse Project is in its Final Stages

The final expansion of the Groundwater Replenishment System was celebrated in Orange County yesterday. The project poses high hopes for the future of California's water systems.

- Nov 13, 2019

Technology allows us to repurpose used water in a number of ways through chemical processes. Agricultural runoff, potable drinking water, and even wastewater can all undergo water treatment systems to be filtered, repurposed, and used again. But, not surprisingly, this kind of recycling requires funds and the right organizations to support it.

The Orange County Water District (OCWD) and Orange County Sanitation District (OCSD) celebrated the final expansion step in California’s most recent water system initiative: the Groundwater Replenishment System (GWRS).

In attendance at the ceremony were elected officials, project stakeholders, and industry professionals to see the last step in the project, due to be completed in 2023. The GWRS first began operating nearly 11 years ago and then produced an average of 70 million gallons of water a day (MGD). Upon completion, it will produce almost double at 130 MDG.

The state of California has long seen struggles in serving its millions of residents with clean and accessible water. Now, with the success of the GWRS, the state and organizations alike have hopes that the project will help serve their water demands to the approximate 2.6 million people in central and northwest Orange County.

The [Orange County Water District](#) released the following press release on the ceremony and final step in the project:

Today, the Orange County Water District (OCWD) and Orange County Sanitation District (OCSD) celebrated the Final Expansion of the Groundwater Replenishment System (GWRS) with a groundbreaking ceremony attended by elected officials, project stakeholders and industry professionals.

The Final Expansion of the GWRS is the third and final phase of the project. The GWRS first began operating in 2008 producing 70 million gallons of water a day (MGD) and in 2015, it underwent a 30-MGD expansion. When the Final Expansion is completed in 2023, the plant will produce 130 MGD.

“Today marks an important milestone in Orange County’s water future,” said OCWD President Vicente Sarmiento. This is what we work for day in and day out—to provide a high-quality, reliable water supply to 2.5 million people in our service area. Total production will be enough water for 1 million people when the expansion is completed. The GWRS is vital to combatting climate change and sustaining Orange County’s water supplies and its thriving economy.”

The GWRS, the world’s largest water reuse project of its kind, is the result of decades of collaboration between OCWD and OCSD to overcome the stigma associated with these types of projects and bring water reliability to the region.

OCWD and OCSD see wastewater as a resource. Instead of discharging treated wastewater to the Pacific Ocean, OCSD treats it and produces water clean enough to undergo purification at the GWRS. This water is then purified at the GWRS using a three-step advanced process consisting of microfiltration,

reverse osmosis and ultraviolet light with hydrogen peroxide. The result is high quality water that meets and exceeds state and federal drinking water standards. This purified water is then injected into a seawater barrier and pumped to recharge basins where it naturally percolates into the Orange County Groundwater Basin, managed by OCWD, and supplements Orange County's drinking water supplies. Currently, GWRS water accounts for one-third of the water that is put into the basin.

"We are honored to partner with the Orange County Water District in ensuring strict source control of the wastewater and working to increase the amount of water sent to the GWRS," stated OCSD Board Chairman, David J. Shawver. "We have made significant investments and are dedicated to the prudent use of public funds for this and all future projects benefiting our community."

The Final Expansion requires a total treated wastewater flow from OCSD of approximately 175 MGD in order to produce 130 MGD of advanced purified recycled water. "This project will allow the region to recycle 100% of OCSD's reclaimable flows, which will be yet another first in the industry," added Shawver.

The GWRS is a financially responsible project that produces water at a lower cost than imported water. Funding for the Final Expansion includes \$135 million from the Environmental Protection Agency's Water Infrastructure Finance and Innovation Act (WIFIA) program and \$1.1 million in grants from the U.S. Department of the Interior Bureau of Reclamation Title XVI Water Infrastructure Improvements for the Nation (WIIN) program.

"The Orange County Water District's advanced system expansion will benefit the local community, the economy and the environment," said EPA Pacific Southwest Regional Administrator Mike Stoker. "We are honored to help fund this project and reduce borrowing costs through our WIFIA loan program."

Additionally, the Final Expansion received the highest ratings for all North Orange County projects submitted through the Integrated Regional Water Management (IRWM) program for Prop 1 grant funding managed by the California Department of Water Resources. The project is currently slated to receive \$3.6 million in grants through the IRWM program. The remaining \$186 million will be funded through the Clean Water State Revolving Fund (SRF) Loan program. For more information about the GWRS and the Final Expansion, please visit <https://www.ocwd.com/gwrs>.



California's OCWD breaks ground on GWRS final expansion project



Orange County Water District

OCWD takes the limited water supply found in nature and supplements it to provide water for more than 2.5 million people in Orange County, California.

14/11/2019

The Orange County Water District and Orange County Sanitation District celebrated the Final Expansion of the Groundwater Replenishment System with a groundbreaking ceremony attended by elected officials, project stakeholders and industry professionals.

The Final Expansion of the GWRS is the third and final phase of the project. The GWRS first began operating in 2008 producing 70 million gallons of water a day (MGD) and in 2015, it underwent a 30- MGD expansion. When the Final Expansion is completed in 2023, **the plant will produce 130 MGD.**

“Today marks an important milestone in Orange County’s water future,” said OCWD President Vicente Sarmiento. This is what we work for day in and day out—to provide a high-quality, reliable water supply to 2.5 million people in our service area. **Total production will be enough water for 1 million people** when the expansion is completed. The GWRS is vital to combatting climate change and sustaining Orange County’s water supplies and its thriving economy.”

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This purified water is then injected into a seawater barrier and pumped to recharge basins where it naturally percolates into the Orange County Groundwater Basin, managed by OCWD, and supplements Orange County's drinking water supplies. Currently, GWRS water accounts for one-third of the water that is put into the basin.

Chairman, David J. Shawver. "We have made significant investments and are dedicated to the prudent use of public funds for this and all future projects benefiting our community."

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BY CRISTINA TUSER

NOV 18, 2019

[FACEBOOK](#)[TWITTER](#)[LINKEDIN](#)

BUSINESS NEWS: U.S. EPA CELEBRATES WIFIA PROJECT

The U.S. EPA and the Orange County Water District (OCWD) participated in a groundbreaking ceremony for the Groundwater Replenishment System (GWRS) expansion in Orange County, Calif.,

U.S. EPA Celebrates WIFIA Project

The U.S. EPA and the Orange County Water District (OCWD) participated in a groundbreaking ceremony for the Groundwater Replenishment System (GWRS) Final Expansion in Orange County, Calif. The project is funded in part by a \$135 million Water Infrastructure Finance and Innovation Act (WIFIA) loan, [according to an EPA press release](#).

“Not only will OCWD’s Groundwater Replenishment System provide Orange County residents and businesses with an additional local drinking water supply, it will also ensure the community is more resilient against periods of drought,” [said EPA Pacific Southwest Regional Administrator Mike Stoker](#). “Good water quality and wastewater management is vital to our health, communities, and economy. Through the WIFIA loan program, EPA is helping renew our nation’s aging water infrastructure.”

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WaterWorld.

Metropolitan, Sanitation Districts launch new water recycling demo plant

Facility in Carson to develop new local water source for the region, could become one of largest recycling plants in the U.S.

Oct 15th, 2019



CARSON, CA, OCT 15, 2019 -- In a major step toward the potential construction of one of the largest water recycling plants in the nation, the

Metropolitan Water District of Southern California and the Sanitation Districts of Los Angeles County were joined today by federal, state and local water leaders to celebrate the start of operations at the Regional Recycled Water Advanced Purification Center.

The 500,000-gallon-per-day demonstration facility takes cleaned wastewater from the Sanitation Districts' Joint Water Pollution Control Plant and purifies it using an innovative process that could significantly improve efficiencies and reduce costs in water recycling.

Over the next 15 months, Metropolitan will put this treatment process through rigorous testing to ensure the process effectively removes impurities and the resulting water meets the highest quality standards. The testing and other analyses will help the agencies determine whether to grow the facility to a full-scale plant that could potentially produce up to 150 million gallons of purified water daily – enough to serve more than 500,000 homes and industrial facilities.

“Today marks a key step in Metropolitan’s endeavor to directly develop a drought-proof local water supply for millions of Southern Californians,” said Metropolitan Board Chairwoman Gloria D. Gray. “Over the last two decades, Metropolitan has steadily diversified the region’s water supply portfolio and prepared for a changing climate by investing in conservation and local supply projects. Metropolitan is now scaling that commitment up to a higher level.”

Congresswoman Grace Napolitano, State Water Resources Control Board Chairman Joaquin Esquivel and Los Angeles Regional Board Chairwoman Irma Muñoz joined Metropolitan and the Sanitation Districts in celebrating the launch of operations.

“We have long been leaders and advocates in recycling water,” said Sanitation Districts General Manager Robert Ferrante. “Most of the water from our other ten plants is currently reused. This project would use the region’s largest untapped source of cleaned wastewater. We are excited to have Metropolitan as a partner in finding a solution that will benefit the entire Southern California region.”

Construction on the \$17 million demonstration plant began in late 2017. While the water purification process being tested at the facility is based on proven technologies, it uses a new combination of treatment processes – starting with membrane bioreactors and followed by reverse osmosis, ultraviolet light and advanced oxidation – that could significantly increase efficiencies in treatment.

“There are certainly proven technologies to safely recycle water. But as we embark upon this major future investment, we need to explore how the process can be improved,” Metropolitan General Manager Jeffrey Kightlinger said. “Others around the globe are watching as well.”

In addition to gaining regulatory approval, the research facility will help confirm treatment costs, assess economic viability, and produce data to inform decisions for the future design, operation and optimization of a full-scale project. A later phase of testing will explore the potential of direct potable reuse, through raw water augmentation.

“The Regional Recycled Water Program is an ambitious project that requires the partnership of two large regional agencies with the right knowledge and expertise. We are thankful to be partnering with the Sanitation Districts,” Kightlinger added.

As envisioned, the full-scale program, including associated distribution lines, would take about 11 years to construct, once approved. Purified water would be delivered through 60 miles of new pipelines to: four groundwater basins in Los Angeles and Orange counties for groundwater recharge and storage, industrial facilities, and, potentially, two of Metropolitan’s existing water treatment plants for direct potable reuse.



News | October 22, 2019

OCWD Wins AMWA Gold Award For Exceptional Utility Performance

Fountain Valley, CA — The Orange County Water District (OCWD; the District) received the Association of Metropolitan Water Agencies' (AMWA) 2019 Gold Award for Exceptional Utility Performance. The presentation was made on October 21 at AMWA's Executive Management Conference in Newport, Rhode Island.

The AMWA Gold Awards for Exceptional Utility Performance recognize the large public drinking water systems that exhibit high levels of performance in the areas of product quality, customer satisfaction, employee and leadership development, operational optimization, financial viability, community sustainability, enterprise resiliency, infrastructure strategy and performance, stakeholder understanding and support, and water resource sustainability. Gold Award winners also show achievement in the areas of leadership, strategic business planning, knowledge management, measurement, and continual improvement management. The honor was bestowed by a distinguished panel of peer judges for OCWD's significant contribution to the drinking water industry.

“This award is recognition by your colleagues that your agency has made remarkable efforts to compete in a highly challenging and constantly changing environment. Congratulations on this high achievement,” said Diane VanDe Hei, AMWA chief executive officer.

“Acknowledgement by our industry peers for our strong record of effective utility management is a true honor,” said OCWD President Vicente Sarmiento. “This prestigious award spotlights our efforts towards community sustainability and pays special tribute to our employees and executive leadership.”

The Orange County Water District began in 1933 as a California Special District to protect the local rights to Santa Ana River water and to manage the vast Orange County Groundwater Basin. It is now an international leader in water reuse and groundwater management and is home to the Groundwater Replenishment System—the world’s largest advanced water purification project for potable reuse.

OCWD was the first to use reverse osmosis to purify wastewater to drinking water quality; and staff were called as consultants as California shaped its Sustainable Groundwater Management Act in 2014. The District’s Philip L. Anthony Water Quality Laboratory is one of four public agency labs in the nation to have an Environmental Protection Agency (EPA) Unregulated Contaminant Monitoring Rule (UCMR) 4 program for five EPA methods. It is also the first laboratory in California to receive certification for polyfluoroalkyl substances (PFAS) detection.

OCWD created the largest constructed wetlands in the West to help purify Santa Ana River waters and for greater water yield while protecting endangered species. The Orange County Groundwater Basin, which OCWD manages, is non-adjudicated, and yet, because of a unique method of assessments and incentives, its 19-member groundwater producers can pump 77% of their drinking water (approx. 104 billion gallons per year) while the basin remains reliable.

Sound planning and investment, high standards for water reliability, exceptional water quality, environmental stewardship, sound financial management, and transparency are the District’s hallmarks and standards, and they guide its ultimate mission to provide a reliable, high quality water supply in a cost-effective and environmentally responsible manner for 2.5 million people in north and central Orange County, California.

About Orange County Water District (OCWD)

The Orange County Water District is committed to enhancing Orange County's groundwater quality and reliability in an environmentally friendly and economical manner. The following cities rely on the groundwater basin, managed by OCWD, to provide 77 percent of their water demands: Anaheim, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, La Palma, Los Alamitos, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster and Yorba Linda. For more information about OCWD, please visit www.ocwd.com, like @OCWaterDistrict on Facebook, follow @OCWDWaterNews on Twitter, and follow @OCWD on Instagram.

About Association of Metropolitan Water Agencies (AMWA)

The Association of Metropolitan Water Agencies is an organization of the largest publicly owned water utilities in the United States. AMWA is the voice of metropolitan water systems on federal water policy issues, and its programs foster sustainable, innovative utility management. Headquartered in Washington, DC, additional information about AMWA may be obtained by visiting <https://www.amwa.net/>. You can follow @AMWA_water on Twitter.

SOURCE: Orange County Water District (OCWD)

ORANGE COUNTY REGISTER

Poseidon, Doheny desalination plants advance in EPA funding quest

The low-interest federal loans would help make the projects more financially viable.



By [MARTIN WISCKOL](#) | mwisckol@scng.com | Orange County Register

PUBLISHED: October 22, 2019 at 4:11 pm | UPDATED: October 22, 2019 at 4:41 pm

Desalination plants proposed for Huntington Beach and Dana Point got a boost Tuesday when the federal EPA selected them to apply for huge low-interest loans that would increase the viability of the projects.

Poseidon's \$1-billion plan for Huntington Beach and the South Coast Water District's \$110 million proposal near Doheny State Beach were two of [38 water projects nationwide](#) chosen to proceed with final applications for the money. Poseidon is pursuing a \$585 million loan while South Coast is seeking \$60 million.

"It's significant," said Karl Seckel, assistant general manager of the Municipal Water District of Orange County. "The loans would improve the economics of the projects. This is good news for both of these projects."

While both plants would provide a drought-proof alternative to imported water, they also have detractors and regulators in their path.

The more controversial Poseidon project needs to receive permits from the Regional Water Quality Control Board and the state Coastal Commission before it can try to finalize a contract with the Orange County Water District. Cost of the desalinated water could prove a key issue in contract approval.

While Poseidon is a private, investor-backed project that would need such a contract, the much smaller Doheny plan is being pursued by a public agency that would sell the water to its own retail customers. But the South Coast Water District is still studying the economics of the proposal and has not yet begun the regulatory permit process beyond approving an environmental study for its own project.

Nonetheless, the Doheny project has been praised by some environmentalists who oppose the Poseidon plan. And those environmentalists aren't the only ones who prefer South Coast's desalination.

The Doheny project also fared better in [a study last year](#) by the Municipal Water District. The district, which oversees the distribution of water imported into the county, examined and ranked six major water projects — including variations of two — proposed throughout the county. One variation of the Doheny project ranked first and another ranked fourth. Two versions of the Poseidon project ranked at the bottom of the list.

Seckel was unable to say whether the federal loan would improve Poseidon's ranking. But he did note the impact it would have on the project's financing.

His district's study of the six projects did not include federal loan money for Poseidon and calculated the interest rate at 4.87%. With a \$585 million federal loan at 2% interest, the total blended interest rate for the project would drop to 3.5%, he said.



U.S. EPA to Provide \$585 Million for Climate-Resilient Huntington Beach Seawater Desalination Plant

BY [BUSINESS WIRE](#) ARTICLE RATING: [GIVE IT 1/5](#)

OCTOBER 22, 2019 02:21 PM EDT

Poseidon Water released the following statement in response to [today's announcement](#) that the U.S. Environmental Protection Agency has selected the proposed Huntington Beach Desalination Project to apply for \$585 million in credit assistance under the federal government's Water Infrastructure Finance and Innovation Act (WIFIA).

"We are pleased by the U.S. EPA's acknowledgment that the Huntington Beach Desalination Project is an environmentally sound, regionally significant project that will produce clean, safe drinking water and high-quality jobs," said Poseidon Water CEO Carlos Riva. "WIFIA will make a tangible difference for Orange County, providing ratepayers with affordable water that is locally controlled and climate resilient. The program is an excellent example of how the federal government can foster Public-Private Partnerships that modernize our nation's water infrastructure."

In 2015, Poseidon Water and the Orange County Water District entered into a Water Purchase Agreement Term Sheet for the purchase of the plant's full 50 MGD capacity. The Project's WIFIA application was [sponsored by the Orange County Water District](#), which stated, "A WIFIA financing award will help reduce the ratepayer cost of the potable water produced by the desalination Project, accelerating the Project development and ultimately provide a new, locally controlled drought-proof supply of drinking water for Southern California."

The WIFIA program accelerates investment in the nation's water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects. The benefits of the credit assistance provided by WIFIA to the Huntington Beach Project will result in a direct financial pass through to Orange

County water ratepayers, which Poseidon estimates will reduce consumer water costs by \$290 million over the life of the Project as compared to current financing options.

The WIFIA program was established by the Water Infrastructure Finance and Innovation Act of 2014, during the last term in public office for former U.S. Senator Barbara Boxer, a California environmental icon.

“When the WIFIA program was established by Congress, it passed with overwhelming bipartisan support. Everyone, regardless of party, knew it would be a great way to reduce costs to the consumer, encourage state of the art technology, create jobs, and help our country meet the challenges of climate change. The legislation created a high bar for a project to meet and the Huntington Beach Project meets every criteria,” said Senator Boxer.

This year, EPA will help finance over \$6 billion in water infrastructure investments that will create up to 190,000 jobs, upgrade aging infrastructure, reduce lead exposure, and improve the lives of millions of Americans across the country. In 2018, construction of the final phase of the Orange County Water District’s Groundwater Replenishment System received a WIFIA loan.

After a robust, statutorily required review process, the Huntington Beach Desalination Project was selected as one of 38 projects nationwide, representing large and small communities, who submitted letters of interest to EPA in response to the 2019 WIFIA Notice of Funding Availability (NOFA). Together, the selected borrowers will receive WIFIA loans totaling up to \$6 billion to help finance over \$12 billion in water infrastructure investments and create up to 190,000 jobs.

With EPA’s WIFIA loan, the Huntington Beach Desalination Plant will provide 50 million gallons per day (56,000-acre-feet per year) of reliable, climate-resilient water to approximately 400,000 people in Orange County. The plant will be Orange County’s largest single source of local supply water supply.

The plant will provide a highly reliable water supply produced with state-of-the-art technology to reduce energy demands, and it will also be one of the only water infrastructure projects in the state to have a zero net carbon footprint. The Huntington Beach Desalination Project will include over 1.5 million labor hours in Orange County, supporting an estimated 3,000 jobs and infusing \$500 million into the local economy.

The Huntington Beach Desalination Plant will open a new chapter in water supply reliability for the Orange County region and the state by tapping the potential of the Pacific Ocean and reducing dependence on strained resources such as the Sacramento-San Joaquin Bay-Delta. It is bolstering the region’s self-reliance, and in turn, its future by meeting the needs of future generations.

About Poseidon Water

Poseidon Water is a private company that partners with public agencies to deliver water infrastructure projects. The company’s primary focus is developing large-scale reverse osmosis seawater desalination plants implemented through innovative public-private partnerships in which private enterprise assumes the developmental and financial risks. For more information on Poseidon’s Carlsbad Desalination Plant, visit carlsbaddesal.com and for more information on Poseidon’s Huntington Beach desalination plant, visit HBfreshwater.com.

View source version on businesswire.com: <https://www.businesswire.com/news/home/20191022006058/en/>

ORANGE COUNTY REGISTER

Orange County College invests \$22 million in new training center for its maritime programs



By [LOU PONSI](#) |

PUBLISHED: October 23, 2019 at 3:35 pm |

After years of planning, a complicated land purchase and sale and necessary approvals from multiple public agencies, expansion of Orange Coast College's School of Sailing & Seamanship is finally underway.

Construction has begun on a 12,000-square-foot, \$22 million Mariners Training Center across the street from the existing harbor-front school facility in Newport Beach.

A skyway bridge over Pacific Coast Highway will connect the sailing school with the new center, which will be built above ground-level parking and will feature a radar training room, a full mission bridge simulator, state-of-the-art lab space, classrooms, a conference room and a student lounge.

The project is scheduled for completion in fall 2021. It's being paid for through the bond measure voters approved in 2012 to finance nearly \$700 million in improvements and construction in the Coast Community College District.

Brad Avery, director of the School of Sailing and Seamanship, said the program only had two classrooms at the harbor and one back on the Orange Coast College campus. "So this was about providing a new home for this program. It's going to be fantastic."

OCC's School of Sailing & Seamanship opened almost 60 years ago, offering basic boating instruction for the general population.

The program, which currently serves more than 1,500 students annually, has since expanded to include a professional program, offering certificates and associates degrees to students pursuing maritime careers.

Opportunities exist working on commercial shipping vessels, private yachts, charter boats, whale watching and dive boats, cruise ships, passenger ferries and tugboats. Many students go on to earn four-year degrees at maritime colleges.

"We're getting more calls from people looking for employees than we have students," said Sarah Hirsch, director of OCC's Community Boating program. She was recently hired to help oversee the expansion. "It's exciting down here. For us, this is an opportunity to have more classroom space right here where we already have our program."

The seamanship and sailing school had been looking to expand for several years, Avery said. When seven contiguous lots across the street went up for sale 17 years ago, he finally saw the opportunity.

But it took about 15 years for the Coast Community College District to acquire the land, he said.

The Orange County Sanitation District was looking to rebuild pump stations at the time and partnered with college district on the land acquisition.

The sanitation district bought the land, built a pump station first, which took about six years, and then sold a portion of the property to the community college district

“This is an exciting step forward for the college and the community,” John Weispenning, chancellor of the Coast Community College District, said at the recent groundbreaking ceremony. “The Mariners Training Center solidifies Orange Coast College and Newport Beach in preparing students for boating and maritime-related industries.”

Nearly all of the vessels and equipment used for teaching students has been donated over the years, Avery said. That includes a 92-foot yacht, the Nordic Star, along with smaller sail boats and power boats.

“One of the provisions is that we keep bettering and expanding to match the needs of the community,” Avery said. “A lot of partnerships are going on here to make this work.”

Los Angeles Times
October 23, 2019

Los Angeles Times

Here's what you can (and can't) do about PFAS contamination in your water



Hundreds of drinking water utilities across California have been ordered to test for PFAS, a class of toxic chemicals linked to cancer.

(Dania Maxwell / Los Angeles Times)
By ANNA M. PHILLIPSSTAFF WRITER
OCT. 23, 2019
3 AM

WASHINGTON —

After The [Times reported last week](#) that nearly 300 drinking water wells and other water sources in California had been contaminated with toxic chemicals linked to cancer, readers wanted to know what they could do. For many, it was the first time they had read about this class of chemicals, called perfluoroalkyl and polyfluoroalkyl substances — or PFAS. We talked to industry experts, and the following are their best answers to some of the most often-asked questions we received.

Will the water filter pitcher I have in my fridge remove PFAS?

If only it were that easy. Common water pitcher brands like Brita and Pur are perfectly fine if you want to reduce bad-tasting chlorine and contaminants like heavy metals. But they weren't designed to remove PFAS or even reduce their concentration in your tap water.

NSF International, a group that tests and certifies water filtration systems, lists [77 products that can reduce PFAS](#) to below the Environmental Protection Agency's health advisory level. Some of them function like pitchers — you fill them manually and they don't have to be installed under your sink — but they do have to be docked into a filtration system that sits on your counter and has to be plugged in. They cost about \$100-\$150.

What type of home filtration system is best?

According to the [Environmental Working Group](#), or EWG, a public health advocacy organization that has called for more regulation of PFAS, the gold standard for in-house filtration is a reverse osmosis filter, commonly called RO.

Reverse osmosis filters work by forcing water through a membrane that traps contaminants. These filters are considered the most effective, but they produce large amounts of wastewater — about three times as much water as they treat. Ranging from \$200 to \$1,800, a reverse osmosis system is typically the most expensive option and may require a professional plumber to install it under the sink.

The second best option is an activated carbon filter, which also goes under the sink. These systems are less expensive than reverse osmosis and their cartridges are often cheaper to replace.

EWG doesn't endorse any particular brand and NSF International gives you 10 different manufacturers to choose from.

There are several caveats to these recommendations.

First, the federal government does not regulate PFAS and there is no agreed-upon safe level for drinking water. Though NSF-certified filters are proven to reduce contaminant levels below the EPA guideline, there's debate among scientists and public health advocates about whether the federal government's advisory level is too high.

For example, New Hampshire has [the strictest PFAS standards](#) in the country, which are significantly lower than the EPA's level. Whether a home filtration system can meet these tighter standards is unclear.

Also, NSF certifies products to remove the two most common variants in the PFAS class — PFOA and PFOS — but there are thousands more. It's unknown how effective water filters are on the second generation of PFAS.

Just because you live close to a well with elevated levels of PFAS does not mean your tap water comes from that source. California has about 3,000 water providers, some of which purchase water from wholesalers that operate their own groundwater wells.

However, if your water does come from a utility with one or more contaminated wells, keep in mind that the PFAS level found in a well may not be the same as what comes out of your faucet. Some California water utilities have shut down contaminated wells, put them on “emergency-only” status or processed their water through treatment plants. Others have begun blending contaminated sources with clean ones to lower the concentration.

If you’re concerned, the best course of action is to call your water provider.

Can I test my tap water for PFAS?

Yes, you can hire a certified laboratory to test your water. It’s also possible to sample water yourself and send it to a laboratory, but it’s quite complicated. Because these chemicals have been used in a dizzying array of consumer products, cross-contamination is a serious concern.

Michigan’s Department of Environmental Quality has [detailed instructions](#) that warn against wearing latex gloves, water resistant clothing, or even certain kinds of lotion and sunscreen that contain the contaminants, while collecting samples. It’s easy to inadvertently ruin a sample by wearing or touching something with PFAS in it.

If you're interested in testing, California drinking water officials recommend that you contact a [laboratory that's accredited](#) for PFAS testing. However, testing is expensive. Prices range from \$400 to \$1,000 per sample.

I get my water from a private well. Should I wait for the state to test it or do it myself?

So far, California's State Water Resources Control Board has tested about 600 water sources — a small fraction of the whole system — and it's unclear how quickly the state will move to require more. State officials have said they are prioritizing wells and other sources near areas that are known to be contaminated, such as military bases, wastewater treatment plants, municipal airports and landfills.

Unlike Michigan, which has committed to testing all of its public water providers, California has not said whether it will do the same, much less turn its attention to private drinking water wells. If you don't want to wait for the state to act, you can have a laboratory test your water.

Will my water bill go up if PFAS are found in my area?

It's possible. Although state-ordered PFAS testing is only beginning in California, already there are examples of water districts spending money to build new treatment facilities or purchasing clean water from elsewhere to replace wells that were shut down. Orange County officials have warned that if the chemicals spread throughout the groundwater basin, residents there could see their water bills rise by as much as 15%.

But because testing is ongoing, it's unclear how widespread or how expensive the cleanup effort will ultimately be. California is still trying to understand the scale of

the problem. As more testing is conducted, it seems likely that state officials will focus on the chemical companies and military branches that introduced PFAS into the environment. In the end, "who pays?" may be a question for the courts.



EPA to Provide \$585 Million for Climate-Resilient Huntington Beach Seawater Desalination Plant

October 23, 2019
by [Efficient Gov Staff](#)



The assistance comes through the federal government's Water Infrastructure Finance and Innovation Act.

HUNTINGTON BEACH, Calif. — Poseidon Water released the following statement in response to yesterday’s announcement that the U.S. Environmental Protection Agency has selected the proposed Huntington Beach Desalination Project to apply for \$585 million in credit assistance under the federal government’s [Water Infrastructure Finance and Innovation Act \(WIFIA\)](#).

We are pleased by the U.S. EPA’s acknowledgment that the Huntington Beach Desalination Project is an environmentally sound, regionally significant project that will produce clean, safe drinking water and high-quality jobs,” said Poseidon Water CEO Carlos Riva.

“WIFIA will make a tangible difference for Orange County,” he continued, “providing ratepayers with affordable water that is locally controlled and [climate resilient](#). The program is an excellent example of how the federal government can foster [Public-Private Partnerships](#) that modernize our nation’s water infrastructure.”

In 2015, Poseidon Water and the Orange County Water District entered into a Water Purchase Agreement Term Sheet for the purchase of the plant’s full 50 MGD capacity.

The Project’s WIFIA application was sponsored by the Orange County Water District, which stated, “A WIFIA financing award will help reduce the ratepayer cost of the potable water produced by the [desalination](#) Project, accelerating the Project development and ultimately provide a new, locally controlled drought-proof supply of drinking water for Southern California.”

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This year, EPA will help finance over \$6 billion in water infrastructure investments that will create up to 190,000 jobs, upgrade aging infrastructure, [reduce lead exposure](#), and improve the lives of millions of Americans across the country. In 2018, construction of the final phase of the Orange County Water District’s Groundwater Replenishment System received a WIFIA loan.

After a robust, statutorily required review process, the Huntington Beach Desalination Project was selected as one of 38 projects nationwide, representing large and small communities, who submitted letters of interest to EPA in response to the 2019 WIFIA Notice of Funding Availability (NOFA).

Together, the selected borrowers will receive WIFIA loans totaling up to \$6 billion to help finance over \$12 billion in water infrastructure investments and create up to 190,000 jobs.

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The plant will provide a highly reliable water supply produced with state-of-the-art technology to reduce energy demands, and it will also be one of the only water infrastructure projects in the state to have a [zero net carbon footprint](#). The Huntington Beach Desalination Project will include over 1.5 million labor hours in Orange County, supporting an estimated 3,000 jobs and infusing \$500 million into the local economy.

The Huntington Beach Desalination Plant will open a new chapter in water supply reliability for the Orange County region and the state by tapping the potential of the Pacific Ocean and reducing dependence on strained resources such as the Sacramento-San Joaquin Bay-Delta. It is bolstering the region's self-reliance, and in turn, its future by meeting the needs of future generations.

American School & University



Rendering of plans for the Orange Coast College's Mariners Training Center in Newport Beach.

PLANNING & DESIGN>NEW CONSTRUCTION

California college begins construction of Mariner training center

The 12,000-square-foot, \$22 million Mariners Training Center in Newport Beach will enable Orange Coast College's School of Sailing & Seamanship to expand.

After years of planning, the expansion of **Orange Coast College's** School of Sailing & Seamanship is finally underway.

The Orange County Register reports that construction has begun on a 12,000-square-foot, \$22 million **Mariners Training Center** across the street from the existing harbor-front school facility in **Newport Beach, Calif.**

A skyway bridge over Pacific Coast Highway will connect the sailing school with the center, which will be built above ground-level parking and will feature a radar training room, a full mission bridge simulator, state-of-the-art lab space, classrooms, a conference room and a student lounge.

The project is scheduled for completion in fall 2021. It's being paid for through the bond issue that voters approved in 2012 to finance nearly \$700 million in improvements in the Coast Community College District.

Brad Avery, director of the School of Sailing and Seamanship, says the program had only two classrooms at the harbor and one on the Orange Coast College campus in Costa Mesa.

"So this was about providing a new home for this program," he says. "It's going to be fantastic."

The college's School of Sailing & Seamanship opened almost 60 years ago, offering basic boating instruction for the general population.

The program, which now serves more than 1,500 students annually, has since expanded to include a professional program that offers certificates and associate degrees to students pursuing maritime careers.

Opportunities exist working on commercial shipping vessels, private yachts, charter boats, whale watching and dive boats, cruise ships, passenger ferries and tugboats.

"We're getting more calls from people looking for employees than we have students," says Sarah Hirsch, director of the college's Community Boating program. "It's exciting down here. For us, this is an opportunity to have more classroom space right here where we already have our program."

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The sanitation district bought the land, built a pump station first, which took about six years, and then sold a portion of the property to the community college district

Nearly all of the vessels and equipment used for teaching students have been donated over the years, Avery says. That includes a 92-foot yacht, the Nordic Star, along with smaller sail boats and power boats.



London sewer's 40-ton fatberg cleared after 3 weeks, debris removed by hand, officials say

By [Stephen Sorace](#) | [Fox News](#)

British engineers have finally cleared a massive 40-ton block of waste known as a “fatberg” from a South London sewer after spending three weeks chiseling down the clog, officials said.

Engineers with Thames Water, a private utility company serving the London area, used high-powered water jets that blast the congealed blockage loose, the company said in a [news release](#) Wednesday. Workers then removed the debris, a combination of fat, grease and other materials, by hand.

“This was a massive and disgusting blockage that took a great deal of effort and teamwork to clear and get the sewer working well again,” said Matt Rimmer, Thames Water’s head of waste networks.

The mammoth clog, discovered earlier this year, weighed the same as three of London's famed red double-decker buses and took up as much as 80 percent of the sewer's capacity, the news release said. If the huge blob wasn't handled, it could have grown even bigger, causing sewage to back up into homes and businesses. It could have also harmed the environment.



The blob of congealed waste weighed 40 tons, about the same as three of London's famed red buses, Thames Water said. (Thames Water)

WORK BEGINS TO REMOVE MAMMOTH 'FATBERG' UNDER BRITISH TOWN

Fatbergs are formed when grease, fat and oil are disposed of down sinks or other drains and fuse with “unflushable” items like wet wipes, diapers and cotton swabs, according to Thames Water.

“We’d urge everyone to help fight the fatberg by only flushing the 3Ps -- pee, poo and paper -- as well as disposing of fat and oils in the bin, not the sink,” Rimmer said.

Several enormous fatbergs have popped up in England over the past several years.

Earlier this year, a 210-foot fatberg was removed from a popular southwestern English resort town. In 2017, an 820-foot fatberg was found in sewers beneath Whitechapel in east London.



November 4, 2019

2019 Excellence in Environmental Engineering and Science™ Awards Competition Winners



The award recipients are listed below. Detailed information on the project categories and awards can be found at: <https://www.aaees.org/e3scompetition>. Click on the links below to view a full profile of each winning project.

Superior Achievement

[Multipronged Collection System Odor Control Program at OCSD; Less Odors and Lower Costs](#)

Entrant: Orange County Sanitation District

Engineer in Charge: Jeffrey Brown, P.E., BCEE

Location: Fountain Valley, California

Planning

Honor Award

[Wastewater Collection and Treatment Facilities Master Plan](#)

Entrant: Orange County Sanitation District

Engineer in Charge: Eros Yong, P.E., BCEE

Location: Fountain Valley, California

Twitter Posts November 2019



Account home
OC Sewers @OCsewers

Page updated daily

28 day summary with change over previous period

Tweets
29 ↑ 20.8%

Tweet impressions
22.6K ↓ 12.8%

Profile visits
175 ↓ 31.4%

Mentions
19 ↑ 11.8%

Followers
1,626 ↑ 13



Nov 2019 · 19 days so far...

TWEET HIGHLIGHTS

Top Tweet earned 2,646 impressions

Reminder, major traffic restrictions at State College and Orangewood in @City_of_Anaheim start today at 8:30am. Please use alternate routes and allow extra time to reach your destination. #SorryAboutTheTraffic ##FixingTheSewers [twitter.com/ocsewers/statu...](https://twitter.com/ocsewers/status...)

👍 1 🗨️ 2 ❤️ 7

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Top Follower followed by 4,491 people



Sonoma Water
@sonomawater (follows you)

Sonoma Water provides naturally filtered drinking water to cities and water districts in Sonoma and Marin counties.

[View profile](#)

[View followers dashboard](#)

Top mention earned 45 engagements

Orange County Water District
@OCWDWaterNews · Nov 8

A toast to the final expansion!
#GWR5 @OCsewers pic.twitter.com/fXInW9uIxp



👍 2 ❤️ 9

[View Tweet](#)

Top media Tweet earned 2,282 impressions

Construction Alert in @City_of_Anaheim - Major construction restricting thru traffic on northbound State College and westbound Orangewood Ave. Nov 18-27, 8:30am - 3:30pm. Allow extra time to reach destination and use alternate routes. Details at ocsd.com/StateCollege. pic.twitter.com/8YDJZDbmTW



👍 1 ❤️ 3

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ADVERTISE ON TWITTER

Get your Tweets in front of more people

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NOV 2019 SUMMARY

Tweets
22

Tweet impressions
14.3K

Profile visits
134

Mentions
13

New followers
8

Facebook Posts November 2019

Page Summary Last 28 days Export Data

Results from Oct 23, 2019 - Nov 19, 2019
 Note: Does not include today's data. Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.
■ Organic ■ Paid


<p>Actions on Page i</p> <p>October 23 - November 19</p> <div style="text-align: center;"> We have insufficient data to show for the selected time period. </div>	<p>Page Views i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">519</p> <p>Total Page Views ▲ 13%</p>	<p>Page Previews i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">20</p> <p>Page Previews ▲ 0%</p>
<p>Page Likes i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">11</p> <p>Page Likes ▲ 38%</p>	<p>Post Reach i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">5,459</p> <p>People Reached ▲ 260%</p>	<p>Story Reach i</p> <p>October 23 - November 19</p> <p style="text-align: center;">Get Story Insights</p> <p style="text-align: center;">See stats on how your Page's recent stories have performed.</p> <p style="text-align: center;">Learn More</p>
<p>Recommendations i</p> <p>October 23 - November 19</p> <div style="text-align: center;"> We have insufficient data to show for the selected time period. </div>	<p>Post Engagement i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">1,461</p> <p>Post Engagement ▲ 71%</p>	<p>Videos i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">1,092</p> <p>3-Second Video Views ▼ 1%</p>
<p>Page Followers i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">14</p> <p>Page Followers ▲ 56%</p>	<p>Orders i</p> <p>October 23 - November 19</p> <p style="font-size: 24px; font-weight: bold;">0</p> <p>Number of Orders ▲ 0%</p> <p style="font-size: 24px; font-weight: bold;">0</p> <p>Earnings from Orders ▲ 0%</p>	

Reach: Organic / Paid Post Clicks Reactions, Comments &

Published	Post	Type	Targeting	Reach	Engagement
11/20/2019 12:57 PM	 Tonight at Plant No. 1 our Steering Committee and Board meeting will			63	0 2
11/19/2019 2:06 PM	 Today is #WorldToiletDay! At OCSD we make it our mission to protect			119	5 7
11/19/2019 9:00 AM	 Did you know your kitchen plumbing is generally only an inch and a half in			828	87 28
11/18/2019 6:30 PM	 Construction Alert in @cityofanaheim - tomorrow from 7			126	0 1
11/18/2019 7:21 AM	 Reminder, major traffic restrictions at State College and Orangewood in			132	2 5
11/16/2019 10:00 AM	 Construction Alert in City of Anaheim- Municipal Government -			369	6 14
11/15/2019 12:00 PM	 Happy America Recycles Day! At OCSD every day is America			179	14 14
11/15/2019 9:00 AM	 Happy #FlashBackFriday! Today's photo shows the construction of our			223	18 13
11/13/2019 12:00 PM	 Today is #WorldKindnessDay. What random acts of kindness have you			98	0 4
11/13/2019 9:00 AM	 Tonight OCSD's Administration Committee meeting starts at 5 p.m.			148	2 5
11/11/2019 9:00 AM	 Today we honor all who served our Country. Thank you from the Orange			270	19 23
11/08/2019 1:08 PM	 Good until the very last drop. Tastes like water because it is water.			264	9 14
11/08/2019 9:00 AM	 Just a reminder that our Administrative Offices will be closed			158	0 5
11/07/2019 12:20 PM	 Congratulations and thank you to our 2020 Safety Contest winners who			234	21 16
11/06/2019 9:00 AM	 Join us for OCSD's Operations Committee meeting tonight at 5 p.m.			147	5 3
11/05/2019 10:00 AM	 Happy #NationalDonutDay! It's a bummer that our toilets can't eat			208	3 8
11/05/2019 8:00 AM	 Today is Election Day! California is holding general district elections, so			197	8 4

11/05/2019 8:00 AM		Today is Election Day! California is holding general district elections, so			197		8 4	
11/03/2019 12:00 PM		Don't put grease down your kitchen sink because your pipes could end			4K		443 122	
11/02/2019 9:55 AM		Stop by and get the coolest bag in town at our booth over at the			328		21 16	
11/02/2019 9:00 AM		Don't forget to "fall back" this weekend! Daylight savings time			264		3 12	
11/01/2019 12:00 PM		Have anything fun planned this weekend? If not, come visit our			151		1 2	
11/01/2019 9:00 AM		Happy November!!! 'Tis the season for peppermint mochas, cozy			180		3 3	
10/31/2019 12:00 PM		Join us on Monday, November 4 at noon for the Legislative and Public			158		3 4	
10/31/2019 11:48 AM		OCSD got all dressed up this year for Halloween. 🍷 #Halloween			254		72 25	
10/31/2019 9:00 AM		Happy Halloween from the Orange County Sanitation District!			179		6 13	
10/30/2019 7:44 PM		From Night to Day...starting tomorrow construction on State			227		5 6	
10/26/2019 3:10 PM		Pills should not be flushed down the toilet. Learn what to flush and how to			422		17 23	
10/25/2019 10:47 AM		Making all the right moves for 65 years. #StateOfTheDistrict			481		21 28	
10/24/2019 8:45 AM		Here at OCSD we're fond of the good ol' days. Meet the Buffalo Pipe,			303		25 20	
10/23/2019 1:50 PM		Imagine dinosaurs destroyed our treatment plants. Imagine if we			400		37 20	
10/23/2019 9:20 AM		Tonight at Plant No. 1 our Steering Committee and Board meeting will			180		11 4	
10/21/2019 12:31 PM		Here's the Monday pick me up you didn't know you needed. Another tip			186		13 6	
10/18/2019 9:00 AM		#FlashbackFriday to yesterday when our #OCSDleadership had			161		27 6	
10/17/2019 11:30 AM					142		9 5	

**Instagram Posts
November 2019**



ocsewers [Edit Profile](#)

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OC Sanitation District
The OC Sanitation District provides wastewater collection, treatment, and recycling for approx. 2.6 million people in central & north Orange County.
www.ocsd.com

POSTS IGTV SAVED TAGGED

STATE COLLEGE REBER CONSTRUCTION

MAJOR TRAFFIC RESTRICTIONS

Intersection of State College & Grangewood

NO THRU TRAFFIC
NORTHBOUND STATE COLLEGE & WESTBOUND ORANGEWOOD AVENUE

Veterans Day
Honoring All Who Served

Happy **Veterans Day**
Honoring All Who Served

Our offices will be closed
Monday, November 11, 2019

Don't forget to **FALL BACK**