



Building on
the Past
**Planning for
the Future**

19
20

Orange County Sanitation District





Letter from the General Manager

The ongoing global pandemic has driven home the importance of planning, preparation, and resiliency. As the regional wastewater utility providing an essential service to 2.6 million people in central and northwest Orange County, the Orange County Sanitation District (OCSD) has continued its 24/7 operation uninterrupted, providing our community with one less thing to worry about as they face this unprecedented challenge.

Throughout the pandemic, our hands-on staff have been working at our facilities with safety precautions, while our staff who can work remotely have done so. Our entire workforce has been flexible and adapted to new tools, innovative approaches, and being physically separated from their co-workers. Despite these challenges, OCSD's operations have not merely maintained status quo — we continue moving forward and meeting the future with new and innovative projects and initiatives that are highlighted in this annual report.

Progress continues on more than 125 capital projects in various stages of planning, design, and construction to ensure that our community has reliable, resilient infrastructure with up-to-date technology that can meet future demands. We are planning for future demands on our operations including regulations, extreme rain events, drought, earthquakes, and sea level rise to name a few. In the next 12 months, we are on track to take competitive bids on over 25 infrastructure projects with a total value of more than \$550 million. These projects are not only essential to safely and reliably deliver our mission, they will also provide a much needed boost to our local economy.

I would like to thank our current and past Board Members for their vision and foresight. Under their leadership, we are ensuring that we continue our tradition of building on the past and planning for the future. I would also like to thank the public for their continued trust and support for our agency, and our staff for always going beyond the call of duty and never wavering in their commitment to protecting public health and the environment — even under the most challenging of circumstances.

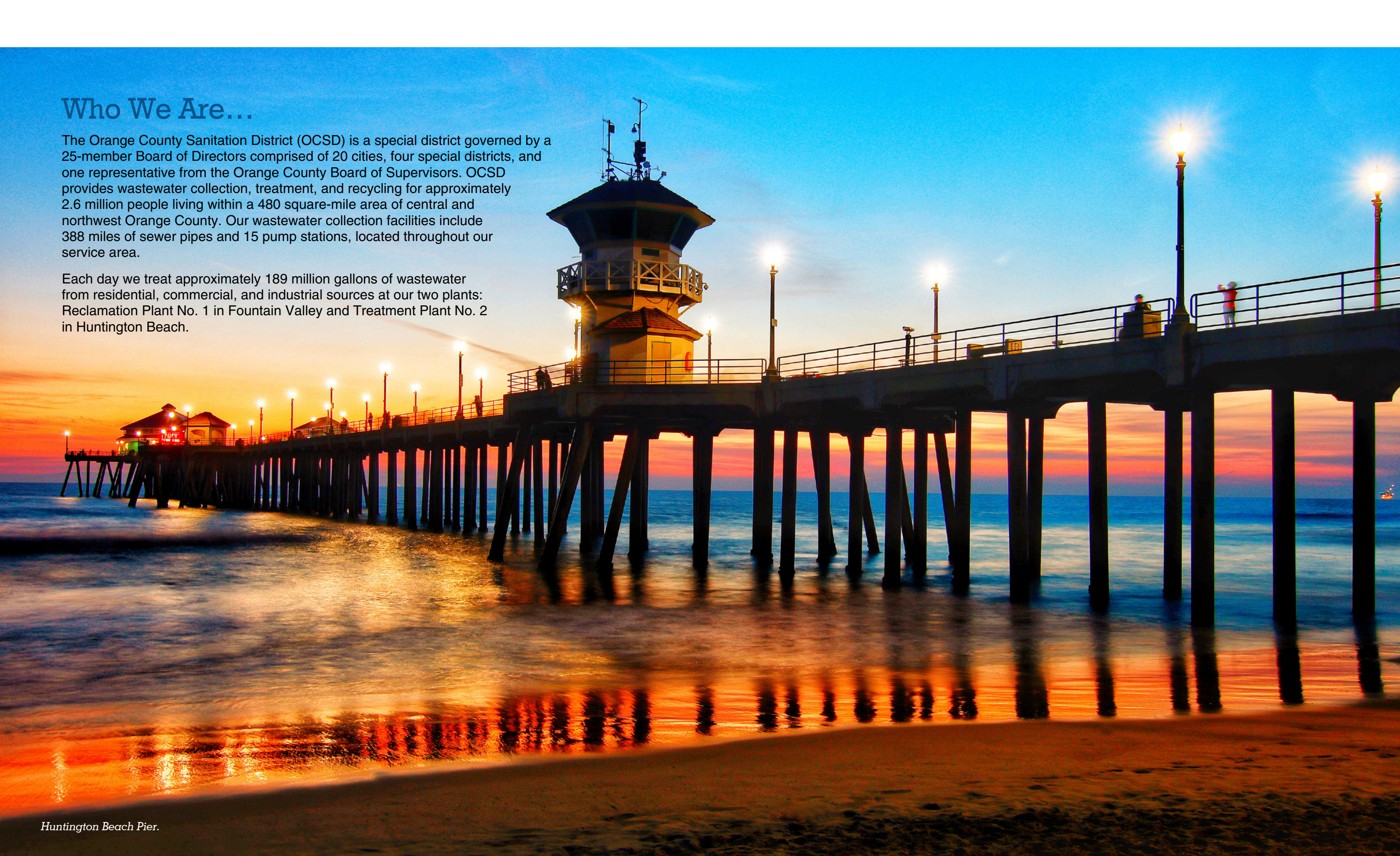
Sincerely,

James D. Herberg
General Manager

Who We Are...

The Orange County Sanitation District (OCSD) is a special district 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 provides wastewater collection, treatment, and recycling for approximately 2.6 million people living within a 480 square-mile area of central and northwest Orange County. Our wastewater collection facilities include 388 miles of sewer pipes and 15 pump stations, located throughout our service area.

Each day we treat approximately 189 million gallons of wastewater from residential, commercial, and industrial sources at our two plants: Reclamation Plant No. 1 in Fountain Valley and Treatment Plant No. 2 in Huntington Beach.



Huntington Beach Pier.



Secondary clarifier with trickling filter in the background at Plant No. 1 in Fountain Valley.

Our Mission

To protect public health and the environment by providing effective wastewater collection, treatment, and recycling.

Our Vision

Orange County Sanitation District Will Be A Leader In:

- Providing reliable, responsive, and affordable services in line with customer needs and expectations.
- Protecting public health and the environment utilizing all practical and effective means for wastewater, energy, and solids resource recovery.
- Continually seeking efficiencies to ensure that the public's money is wisely spent.
- Communicating our mission and strategies with those we serve and all other stakeholders.
- Partnering with others to benefit our customers, this region, and our industry.
- Creating the best possible workforce in terms of safety, productivity, customer service, and training.



Left to right: Centrifuge; trickling filter at Plant No. 1 in Fountain Valley.

Bottom: Secondary clarifier at Plant No. 1 in Fountain Valley.



Board of Directors

City

Anaheim
Brea
Buena Park
Cypress
Fountain Valley
Fullerton
Garden Grove
Huntington Beach
Irvine
La Habra
La Palma
Los Alamitos
Newport Beach
Orange
Placentia
Santa Ana
Seal Beach
Stanton
Tustin
Villa Park

Active Director

Lucille Kring
Glenn Parker
Fred Smith
Mariellen Yarc
Steve Nagel
Jesus J. Silva
Steve Jones
Erik Peterson
Christina Shea
Tim Shaw
Peter Kim
Richard Murphy
Brad Avery
Mark Murphy
Chad Wanke
Nelida Mendoza
Sandra Massa-Lavitt
David Shawver (Chair)
Allan Bernstein
Robert Collacott

Sanitary Districts

Costa Mesa Sanitary District
Midway City Sanitary District

James Ferryman
Andrew Nguyen

Water Districts

Irvine Ranch Water District
Yorba Linda Water District

John Withers (Vice-Chair)
Brooke Jones

County Areas

Member of the
Board of Supervisors

Doug Chaffee

Executive Management Team

James Herberg General Manager

Robert Thompson Assistant General Manager and Director of Operations and Maintenance

Lorenzo Tyner Assistant General Manager and Director of Finance and Administrative Services

Kathleen Millea Director of Engineering

Celia Chandler Director of Human Resources

Lan Wiborg Director of Environmental Services



Left: Kathleen Millea; Lorenzo Tyner; James Herberg; Lan Wiborg; Robert Thompson and Celia Chandler

Keeping Up Our Grades

The results are in — Heal the Bay has released its 2019-2020 beach report card and Orange County beaches are some of the best in the state. Orange County beaches are doing great, with 95 percent receiving above average grades during dry-season months, which is when beaches are used the most.

Seal Beach, Huntington Beach and Newport Beach, which are the beaches monitored by OCSD, made Heal the Bay's honor roll list which requires a beach to score an A+ in all three seasons (summer dry, winter dry, wet weather). This is a clear indicator that our collection, treatment and monitoring efforts and our dry weather urban runoff diversion program are protecting the ocean water quality.



Working in the general chemistry, microbiology, and the nutrient section of the laboratory, I have seen how we use what we learned to "build a better future". With increased testing and tighter regulations, we have found that looking to technology and newer ways of implementing methods and procedures we can exceed expectations and "plan for the future".

Larry Polk, Environmental Specialist



Making Room for Wastewater Operations

As part of our ongoing efforts to plan for the future and increase efficiencies, we have purchased properties across the street from our current administration building located at Reclamation Plant No. 1 in Fountain Valley. The existing structures on these properties will be demolished to make room for a new 109,000-square foot consolidated headquarters building that will house the 350 plus staff that are currently located in various aging buildings and trailers spread across the 100-acre Reclamation Plant No. 1 site.

The new headquarters building, scheduled for completion in 2023, will provide a single centralized location and greater cohesiveness for administrative staff, while preserving space at the plant site for future wastewater treatment infrastructure.



Rendering of lobby and Board Room.

Rendering of new headquarters complex in Fountain Valley.

Resource Recovery in All That We Do!

Our commitment to resource recovery includes meeting approximately 60 percent of OCSD's power requirements using methane gas recovered from our wastewater treatment process. But we haven't stopped there. To help offset any remaining power demand for our Plant No. 1 in Fountain Valley, we have entered into a public/private partnership with Stem, SK E&S and SUSI Partners and Southern California Edison utilizing the latest energy storage technology. The 4.9-megawatt, 32.5-megawatt-hour Tesla lithium-ion energy storage system is the largest single customer-sited battery system in the United States.

The battery storage operation is expected to save the Sanitation District's customers over \$300 thousand per year.



New battery storage system at Plant No. 1 in Fountain Valley.

New System, New Technology, and Overall Better for our Community

New centrifuge systems have been installed at both of our treatment plants to replace aging equipment, improve efficiency and expand our solids handling capacity. These facilities perform the critical step of removing water from the biosolids so that they can be transported for beneficial reuse as a soil amendment. Centrifuges are a high-speed process that uses the force from rapid rotation to separate liquid from wastewater solids. The two facilities at Plant No. 1 in Fountain Valley and Plant No. 2 in Huntington Beach have been up and running for a year.

In 2017, before the centrifuges went online, our biosolids budget was \$17.21 million at peak solids production. The budget for the fiscal year 2020-21 has been greatly reduced to \$12.4 million. The centrifuges have reduced the total daily volume of biosolids by 250 tons. Essentially wringing out an additional 200 tons of water per day that will no longer be hauled over 120-280 miles away. This volume reduction has eliminated about 30 percent of the hauling, equating to about 3,500 fewer trucks per year with a corresponding decrease in vehicle emissions.



Centrifuge Ribbon Cutting Ceremony at Plant No. 1. Supervisor Michelle Steel (Master of Ceremony); Assemblyman Steven Choi; Board Chairman David Shawver; Board Vice Chairman John Withers; and Directors Erik Peterson; Peter Kim; Richard Murphy; and Robert Collacott cut the ribbon to unveil the new centrifuge facility.

Partnering to Manage Organics and Increase Renewable Power

California's cities must reduce organic material entering landfills by 75 percent by 2025. To help cities meet this goal, OCSD is planning to construct an Interim Food Waste Receiving Facility at our Plant No. 2 in Huntington Beach, which is expected to be complete by the end of 2022.

The station will accept approximately 150 tons per day of preprocessed food waste slurry from waste haulers and feed it into our existing digester complex located at Plant No. 2. Adding the food waste slurry to our digesters will increase the production of methane gas used for on-site power generation. This project assists OCSD's member agencies in meeting Senate Bill 1383 organic diversion goals. This project increases on-site power generation to help OCSD move closer to its goal of becoming 100 percent energy self-sufficient.



In my workgroup, we continue to fine tune our best practice methods to ensure consistent reliability within our plant and for the ratepayer. This will ensure our core values will continue to set OCSD as the industry leader for years to come.

Ty Adnani, Senior Mechanic

OCSD Receives Its First U.S. Patent

With our customers in mind, our workforce is finding ways to advance the industry and reduce costs. The Orange County Sanitation District has been granted a patent for a process to treat odors known as "Chemical Optimization During Wastewater Treatment-Odor Control".

The process uses state-of-the-art data collection and process control to optimize dosing paired with mechanical abatement techniques to minimize odor emissions throughout our service area. This is the first patent OCSD has received and with this chemical optimization process in place, we are able to share it with other wastewater agencies.

We are proud to be leaders in the wastewater industry, doing all that we can to serve our community.



Over the last decade, the odor group has discovered a number of cost effective and new innovative technology treatment strategies. As for the future, we will continue to build on our prior field learnings with the general theme to reduce, reuse, re-purpose and recover.

Brian Reed, Principal Environmental Specialist

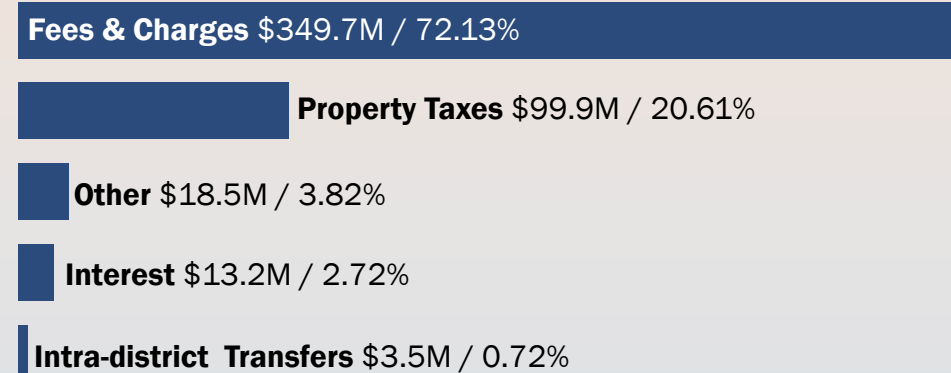


Financial Planning: Protecting our Community's Assets

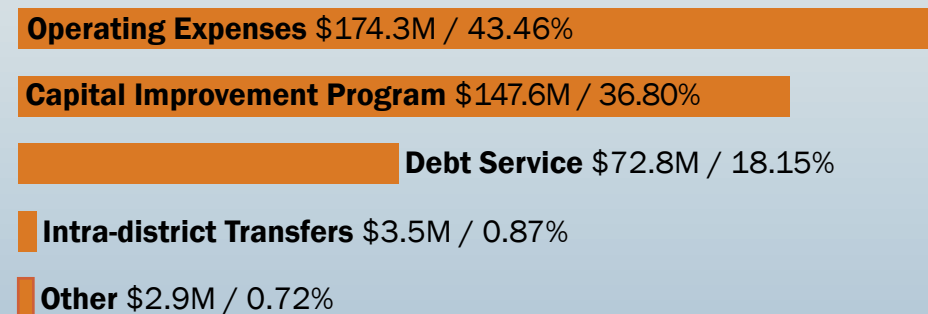
OCSD strives to ensure we are financially stable and keep our rates affordable for our ratepayers, while always meeting our mission to protect the public health and the environment. Recently, OCSD had its AAA credit rating reaffirmed based on its management practices and financial strength. This is the highest possible credit rating, which means that we have access to low interest rate financing on infrastructure improvements, resulting in cost savings for OCSD's customers.

Many government agencies are faced with growing long-term liabilities, particularly in the area of employee pensions. Due to fluctuations in financial markets, OCSD had an Unfunded Actuarial Accrued Liability of close to \$8 million. Through the proactive stance of our Board of Directors, we paid down the unfunded liability, which will save our ratepayers nearly seven percent a year in premium payments.

Where Money Comes From



Where Money Goes



OCSD Approves Budget and Foregoes Rate Increase

We understand that our community has been greatly affected by the COVID-19 pandemic and many of our ratepayers have incurred financial hardship. Given the financial impacts of COVID-19 on our community, the Orange County Sanitation District Board of Directors voted to adopt the two-year budget and not raise the sewer service fee for the 2020-21 fiscal year. The OCSD sewer service fee for a single-family residence will remain \$339 for the year, less than one dollar a day. Sewer service fees for commercial users and permitted industrial users will also remain flat during fiscal year 2020-21.



"The COVID-19 pandemic has created a very stressful and financially straining situation for Orange County. As members of this community we understand and empathize and want to provide some relief for our ratepayers," stated OCSD's Board Chairman David Shawver. "As an essential service, OCSD continues to meet the mission of protecting public health and the environment throughout this pandemic. This unexpected situation has created some operational and financial challenges, yet our fiscal stewardship over the years has allowed us to maintain our level of service and the ability to forego the rate increase for the coming year. While providing some relief to our customers, the recently adopted budget will continue to support our operational needs and the Capital Improvement Program," stated Shawver.

As a part of the Purchasing Team, I strive to ensure that the Sanitation District procures its goods and services with the highest standards in procurement. Purchasing commits to keep its processes fair and transparent and that taxpayer dollars are spent wisely.

Jackie Lagade, Principal Buyer



Studying Wastewater and COVID-19


OCSD is actively collaborating with industry and academic partners to understand the available testing methods, costs and usefulness of Wastewater Based Epidemiology also known as wastewater surveillance for COVID-19, the disease caused by the virus SARS-CoV-2.

Individuals infected with SARS-CoV-2, both asymptomatic and symptomatic, shed the virus in stool that ends up in the sewage system. Fortunately, SARS-CoV-2 has not been shown to remain infectious in wastewater, but its genetic material ribonucleic acid (RNA) can be detected and used as an indicator of the presence of COVID-19 in a community.

OCSD continues to collaborate on three SARS-CoV-2 wastewater surveillance projects with the State Water Resources Control Board, University of Arizona and Stanford University. OCSD may also consider participating in the National Wastewater Surveillance System (NWSS) led by the Centers for Disease Control (CDC), where

wastewater samples will be collected in coordination with the local public health agency, samples will then be analyzed by a public health laboratory and the data will be uploaded to a national database for interpretation, modeling and quality control. Finally, the data will be shared with the appropriate end users such as state and local health agencies, CDC's COVID Data Tracker and other key agencies. In addition, OCSD is actively evaluating other partners to continue and expand testing of the virus.

One advantage of sewage testing for SARS-CoV-2 is that the RNA of the virus can be present in stool as soon as two days after infection, thus serving as a potential early warning tool. It is believed that sewage surveillance can help gauge the magnitude of infection in a given area allowing informative decision making by public health officers. Such testing has been used for decades around the globe for other viruses such as poliovirus and hepatitis A virus. OCSD will continue working with the wastewater industry, academia and health agencies to provide research for this and other viruses and diseases.



Secondary clarifiers used in the wastewater treatment process to remove organic materials.

Our Workforce

Authorized Full-Time Employees
640

Average Years of Service
11

New Hires
41

Average Age
46.6

Number of Retirements
27

Retirements Years of Service
562

Education Level: Bachelor's Degree or Higher Percent of the Organization
60 percent

Master's Degree or Higher
18 percent

Number of employees holding positions that require a state license or certification
273

Percentage of employees holding positions that require a state license or certification
46 percent



A new learning program was created – OCSD “U”. The program provides a wide array of job-related coursework to meet the needs of our employees.



Our employees, both past and present are the future of the Orange County Sanitation District. Working in Human Resources I get to directly support and serve that future every step of the way. The key to making our future a success is to challenge ourselves daily to be better, embrace change, and to do so while staying focused on our lifelong mission of why we exist as an agency.
Adam Montoya, Human Resources Analyst

OCSD collections staff working to clean a sewer line in our service area.

Looking Ahead

As a forward-thinking agency, we are continually planning and preparing for the future. The Board of Directors and staff develop a Strategic Plan to define initiatives to be pursued by the Sanitation District that provides a basis for long-term financial, capital, and operational planning. We have developed a two-year, four-step management process that creates and maintains vision alignment between the Board of Directors, the staff and the public we serve.

Strategic planning is the first step to define the Sanitation District's ability to have people and assets in place to meet its agreed upon mission as defined by the Board. The second step is capital and operational planning based on the adopted strategic plan. The third step is budget development to execute the plan and define the tactical goals to work toward the strategic goals. The final step is execution of the budget and tactical goal attainment. These four steps are repeated every two years to maintain alignment and make course corrections based on Board Member input, legal and regulatory changes and the needs of the communities we serve.

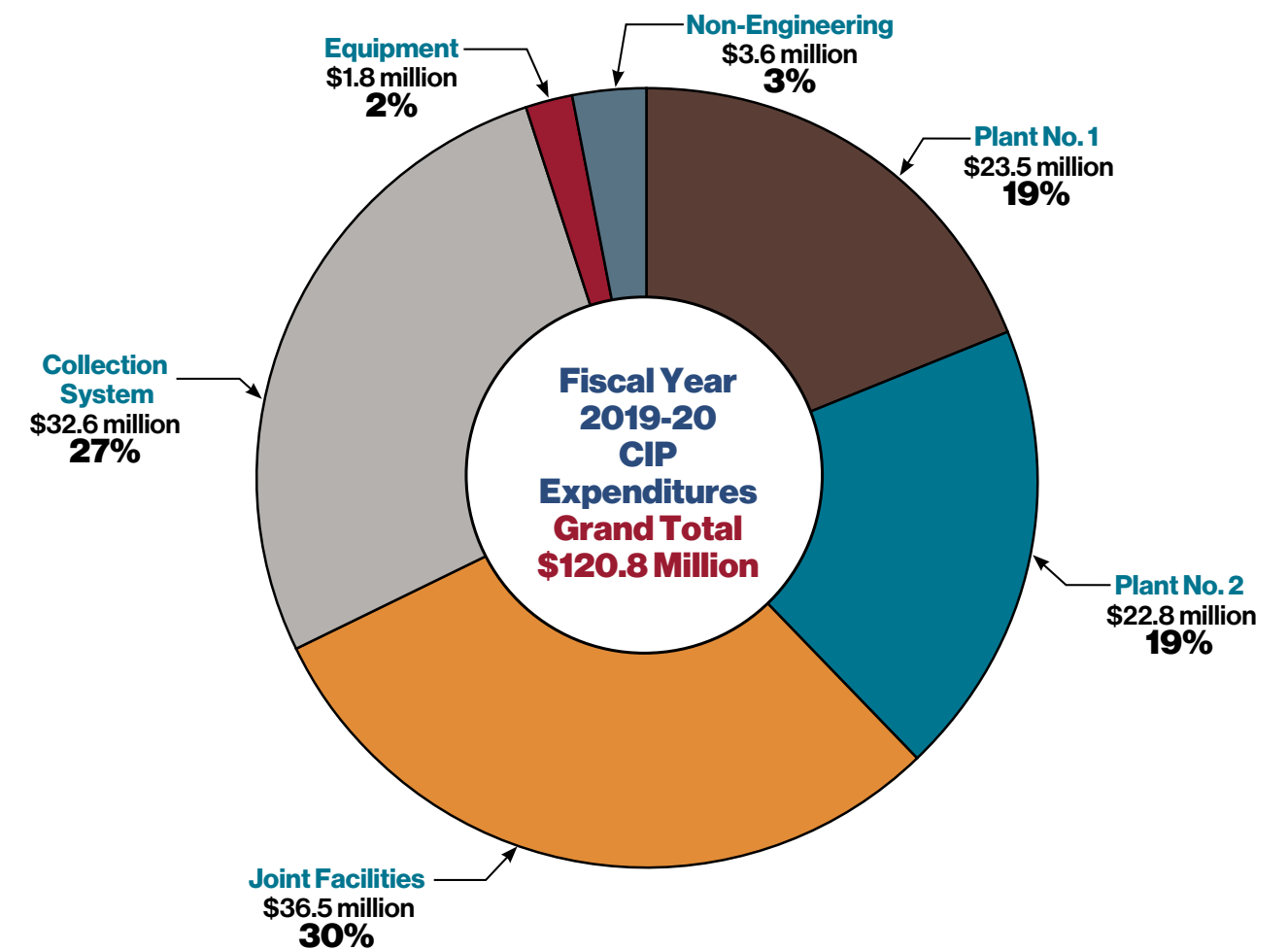


Secondary clarifier at Plant No. 1 in Fountain Valley.

Planning for the Future

OCSD's Capital Improvement Program (CIP) is a long-term plan to rehabilitate, replace, and update the agency's regional and plant facilities. OCSD's CIP has been carefully put together to cost-effectively meet future regulatory requirements, incorporating climate resiliency, seismic reliability and maximizing resource recovery. Although the focus of the CIP may shift over time, one thing remains clear, to ensure OCSD can continue to provide the necessary levels of service.

During the 2019-20 fiscal year, the CIP program included over 120 capital projects with a net CIP outlay of more than \$120 million. CIP projects take several years to complete the planning, design and construction cycle. The CIP Annual Report highlights some of the major capital projects through the various project phases OCSD staff was actively involved in during the fiscal year. For more information, please view our CIP Annual Report.



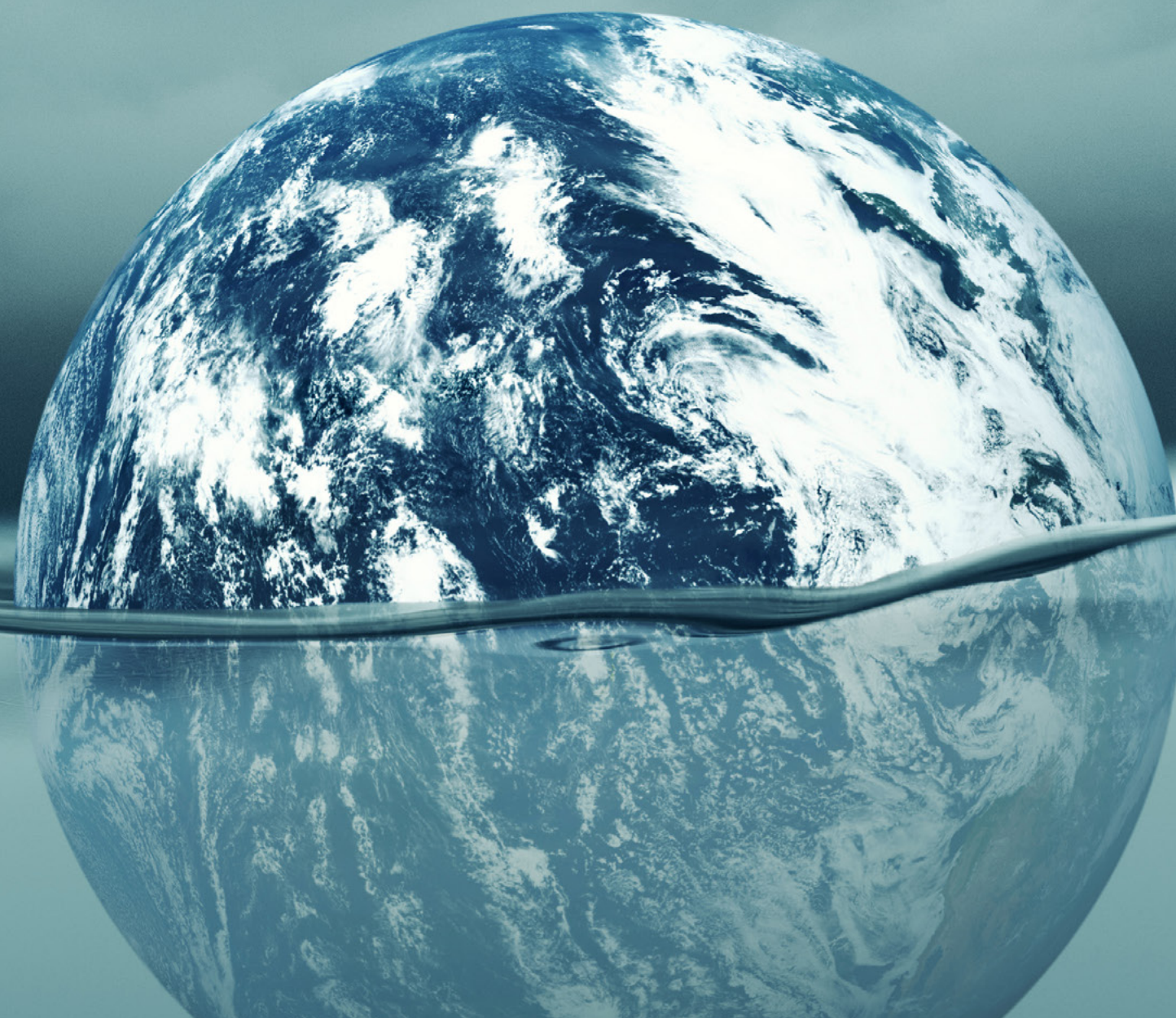
Climate Change – Weathering the Storm

If 2020 taught us one thing, it is that you can never be too prepared and to expect the unexpected. That is exactly what OCSD has been doing for over 65 years. There are many types of hazards that threaten our daily operations including, earthquakes, floods, and weather events. In addition to preparing for known natural disasters, OCSD has been studying how climate change can affect the work we do and the overall risk to our facilities, staff and the community we serve. This past year, OCSD completed the Climate Resiliency Study that involved assessing the risks posed by climate change and developing adaptations to mitigate those risks.

The result of the study was a Climate Resiliency Plan that focused on the impacts of climate change in Orange County. The plan is one of the first in California to focus on a particular county within the state. The plan combines the implications of climate change into improved design standards, emergency preparedness, and facility operations for the future. As a result of this plan and the work that staff has done to study climate change, climate resiliency is being integrated into ongoing Capital Improvement Program projects.

One of the highlights of this plan is the recognition it is receiving by our peers. The Climate Resiliency and Adaptation Plan received the American Academy of Environmental Engineers and Scientists (AAEES) 2020 Excellence in Environmental Engineering and Science Awards Grand Prize in the Planning Category.

To learn more, read the comprehensive Climate Resiliency Study.



Groundwater Replenishment Highlights

- The Final Expansion of the Groundwater Replenishment System (GWRS) is the third and final phase of the program. Upon completion in 2023, GWRS will produce 130 million gallons of high-quality water every day, which will be enough water for 1 million people.
- The Orange County Water District has begun construction of the two equalization tanks and pump station near the north end of OCSD's Plant No. 2 in the City of Huntington Beach.
- Once the Newhope Placentia Project is completed, 8 million gallons a day will be diverted to OCSD's Plant No. 1 for treatment and then sent to GWRS. OCSD has started construction of an Outfall Low Flow Pump Station project and the Headworks Modification project to split the reclaimable and non-reclaimable flows.
- The Orange County Water District started construction of the 66-inch Secondary Effluent Pipeline Rehabilitation project.



Equalization Tanks for the Groundwater Replenishment System.



As part of IT, I am constantly reminded of the importance of planning for the future. We're always on the lookout for new technologies that may benefit our users. Microsoft Teams has enabled our users to thrive and continue OCSD's mission even in an everchanging world.

Thomas Vu, Information Tech Analyst III

Legislative Affairs and Grants

- 130 bills tracked and analyzed
- 8 State Positions
- 6 Federal Positions

Grants

Two grants - \$42,000



Community Outreach

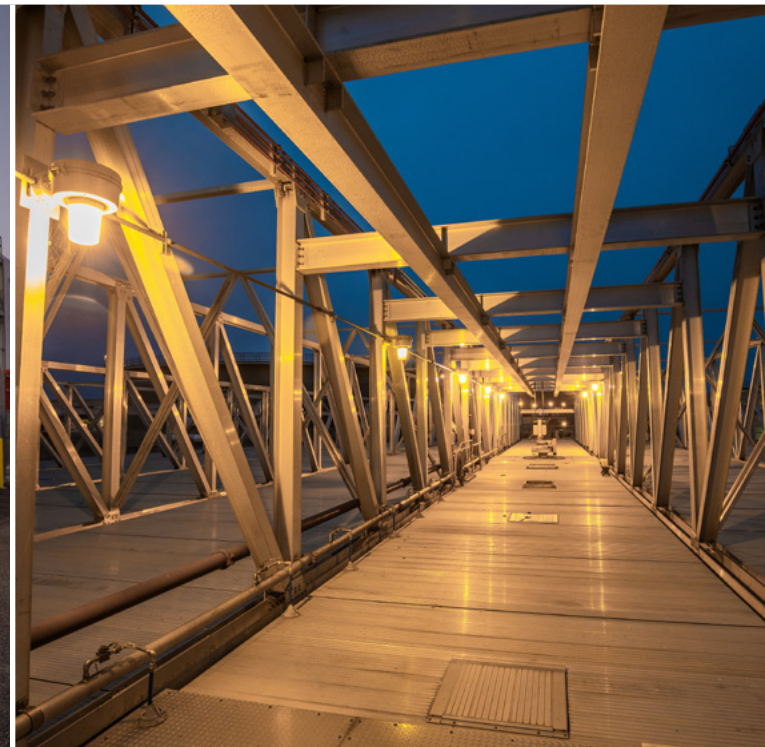
- 8 community events
- 20 speaking engagements
- 112 tours with 1,804 guests
- 2,600 students reached through the Sewer Science Program
- 669 social media posts reaching over 60,000 people
- 21 website posts
- Published 12 news releases with over 23 articles mentioning OCSD
- Reached over 80,000 people through construction outreach



OCSD employees out in the community. (Pictures taken pre-COVID-19.)

Looking Forward 2021

- Complete site preparation for the new Headquarters facility across from the Plant No. 1 facility in Fountain Valley.
- Complete market assessment from municipal solid waste haulers in Orange County for food waste feedstock for co-digestion at OCSD in order to assist local entities meet the new local regulations.
- Develop and conduct two emergency response and recovery drills for our interplant digester gas line and cybersecurity.
- Overhaul the next two Central Generation Engines to begin the second 25-year operations cycle for the Central Generation Facilities.
- Continue OCSD's leadership role in developing analytical capability, advocating for sound science and regulations and identification of significant sources in constituents of emerging concerns such as per- and polyfluoroalkyl and microplastics.
- Complete implementation of an Industrial Hygiene Program and a Job Safety Analysis program to meet the Cal/OSHA Voluntary Protection Program requirements.
- Begin preparations for an agency wide Classification and Compensation Study by completing a Request for Proposal for a specialized vendor and accessing, discussing, and meeting and conferring regarding the 17 survey agencies.
- Implement a Section 115 Pension Trust Fund for the purpose of funding future pension obligations.
- In the next 12 months, we are on track to take competitive bids on over 25 infrastructure projects with a total value of more than \$550 million.



Foul air chemical facility at Plant No. 1 in Fountain Valley.

Covered primary clarifiers at Plant No. 1 in Fountain Valley.

Digesters at Plant No. 1 in Fountain Valley.

2019/20 Awards

- **Turning Red Tape Into Red Carpet, Converting Food Waste Into Green Energy** — 2019 Orange County Business Council
- **Investment Policy Certification** — 2020 California Municipal Treasurers Association
- **Excellence in Procurement** — 2020 California Association of Public Procurement Officials
- **Santa Ana River Basin Section**
 - Community Engagement and Outreach Project of the Year, 1st Place, **State College Sewer Construction Outreach Program** (Project Lead *Daisy Covarrubias*)
 - Medium Collections System, 2nd Place
 - Laboratory Person of the Year, 1st Place, *Dawn Myers*
 - Laboratory Person of the Year, 2nd Place, *Arturo Diaz*
 - Operator of the Year, 2nd Place, *Jennifer Alexander*
 - Spotlight Award, *Cindy Murra*
- **California Water Environmental Association**
 - PICK Award, *Dindo Carrillo*
 - Film Festival Winner, 1st Place, **OCSD General Tour**
 - Community Engagement and Outreach Project of the Year, 2nd Place, **State College Sewer Construction Outreach Program**
- **Grand Prize, Climate Resiliency Study** — 2020 American Academy of Environmental Engineering Services
- **American Graphic Design Award, 65th Anniversary Annual Report and 65th Anniversary Logo** — 2020 Graphic Design USA



Surge tower at Plant No. 2 in Huntington Beach.

Reclamation Plant No. 1 (Administration Offices)
10844 Ellis Avenue, Fountain Valley, California 92708

Treatment Plant No. 2
22212 Brookhurst Street, Huntington Beach, California 92646

Phone: 714.962.2411
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