

ORANGE COUNTY SANITATION DISTRICT



***We Can Do So Much***

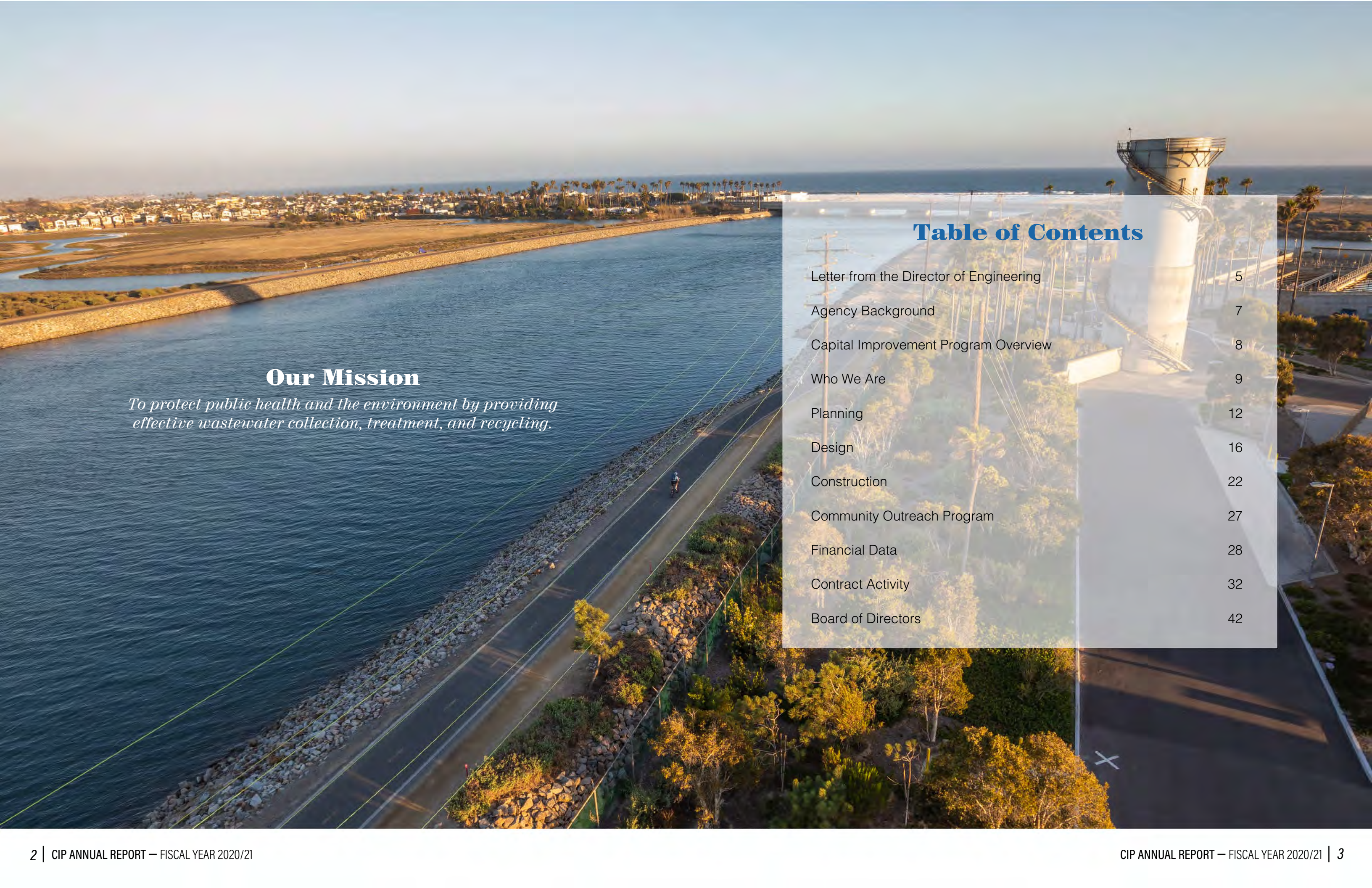
# Capital Improvement Program **ANNUAL REPORT**

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Fiscal Year 2020/21







## Our Mission

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

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Top row: Chris Forrest (Construction Inspector), Dana Andrews (Sr. Construction Inspector), Phil Sullivan (Construction Inspector).  
 Middle: Tony Acayan (Engineer), Mike O'Reilly (Construction Inspector), Michelle Spengler (Engineering Assistant II), Liz Lapite (Administrative Assistant), Matthew Perry (Engineering Associate), Hye Oh (Engineer), Mickey Whitney (Sr. Construction Inspector)  
 Bottom: Scott Ahn (Engineer), Valerie Ratto (Sr. Engineer, Consultant), Chris Cervellone (Engineering Supervisor retiree), Eros Yong (Engineering Manager, Consultant).

## Letter from the Director of Engineering

On the first page of this Capital Improvement Program Annual Report for Fiscal Year 2020-21, OC San's mission is clearly stated. And despite the adjustments we have had to make in our work practices due to the global pandemic of COVID-19, we never wavered from our mission: to protect public health and the environment.



Living through a pandemic has taught us many lessons. As an Engineering Department, we have had to become more innovative on how we do our jobs. Instead of physical site visits, we used technology and photographic images to host virtual job walks. In person face-to-face meetings became video conferences. Patience and skills sets were strengthened with technology and internet connections. I'm not sure how many times I have been told "you're muted" during an online meeting! Our strong working relationships carried us through. We worked, hand in hand, as a team and I am extremely proud of the collaborative energy and the work produced.

Many thought the pandemic would have thrown a wrench in our work, but we quickly adapted and made modifications along the way. Despite it all, Fiscal Year 2020-21 was one of our busiest and most productive years, issuing over \$475 million of construction contracts for over 20 capital projects. We highlight several of these notable projects in this report. I am thrilled to see the commitment the team put forth with planning studies and design efforts and transitioning those projects into construction. It brings great pleasure to take part in the adventure with the team.

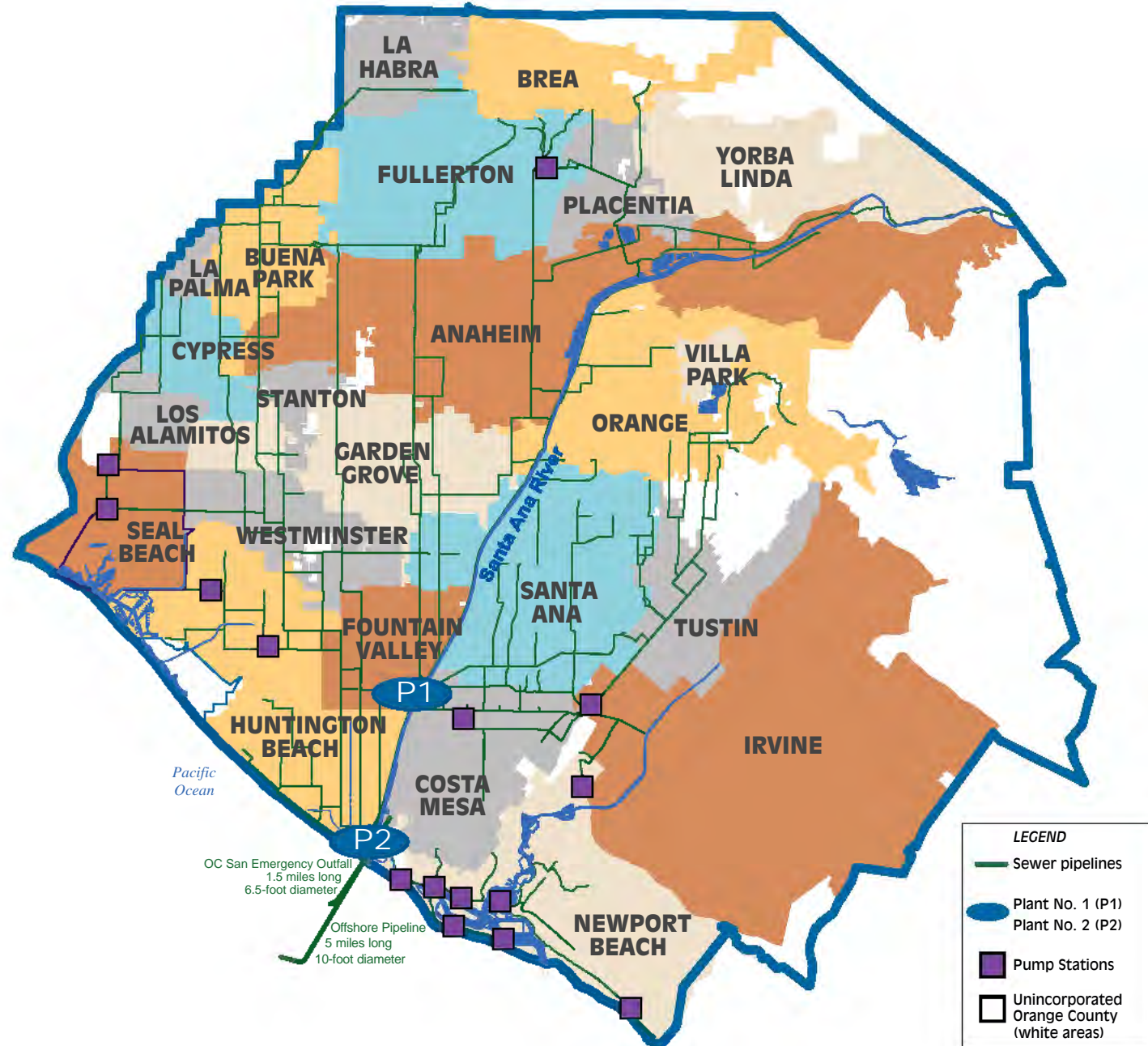
Because **together, we can do so much.**

*Kathleen T. Millea*

Kathleen T. Millea, P.E.  
 Director of Engineering



## Service Area



## Agency Background

The Orange County Sanitation District (OC San) provides regional wastewater collection, treatment, and recycling to 2.6 million people within a 480-square mile service area in central and northwest Orange County, CA.

Official operations began in 1954 as the County Sanitation District of Orange County. In 1998, the agency consolidated and changed its name to Orange County Sanitation District. In October 2020, the agency rebranded to OC San and updated the logo to reflect the water resource recovery agency it has become, evolving from the basic wastewater collection and treatment of the past. Valuable resources are recovered from wastewater treatment, principally water, energy, and agricultural fertilizer.

Today, OC San has two operating facilities located in Fountain Valley and Huntington Beach. Over 180 million gallons a day of wastewater is collected, treated, and either safely released five miles offshore in the Pacific Ocean or further treated by our partners, the Orange County Water District for the Groundwater Replenishment System. OC San maintains nearly 400 miles of regional pipelines in the collection system and 15 off-site pump stations.





## Capital Improvement Program Overview

The Capital Improvement Program (CIP) is OC San’s long-term plan to maintain its infrastructure — the vast network of facilities, pipelines, and pump stations to provide wastewater collection, treatment, and recycling services. The CIP is reviewed annually, approved by the Board of Directors, and capital projects are developed and prioritize to meet the levels of service. Over \$5.8 billion of CIP spending is projected over the next 20 years.

Key drivers for CIP projects include increased wastewater flow capacity, regulations, strategic initiatives, and the need for rehabilitation and replacement. As many of OC San’s existing facilities near the end of their useful life, the main driver for many of the CIP projects today focus on rehabilitation and replacement to ensure reliable service to recycle treated wastewater for indirect potable reuse and discharge clean water into the Pacific Ocean.

This document is an annual report of OC San’s CIP for the fiscal year starting July 1, 2020 and ending June 30, 2021. The CIP program included over 30 active construction projects and a net CIP expenditure of over \$160 million.

The activities address a range of projects, with notable efforts on finalizing designs and laying the foundation for significant multi-year construction projects for the replacement and rehabilitation of existing facilities such as the Headworks, Primary Treatment, and over eight miles of the Western Regional Sewers in the collection system.



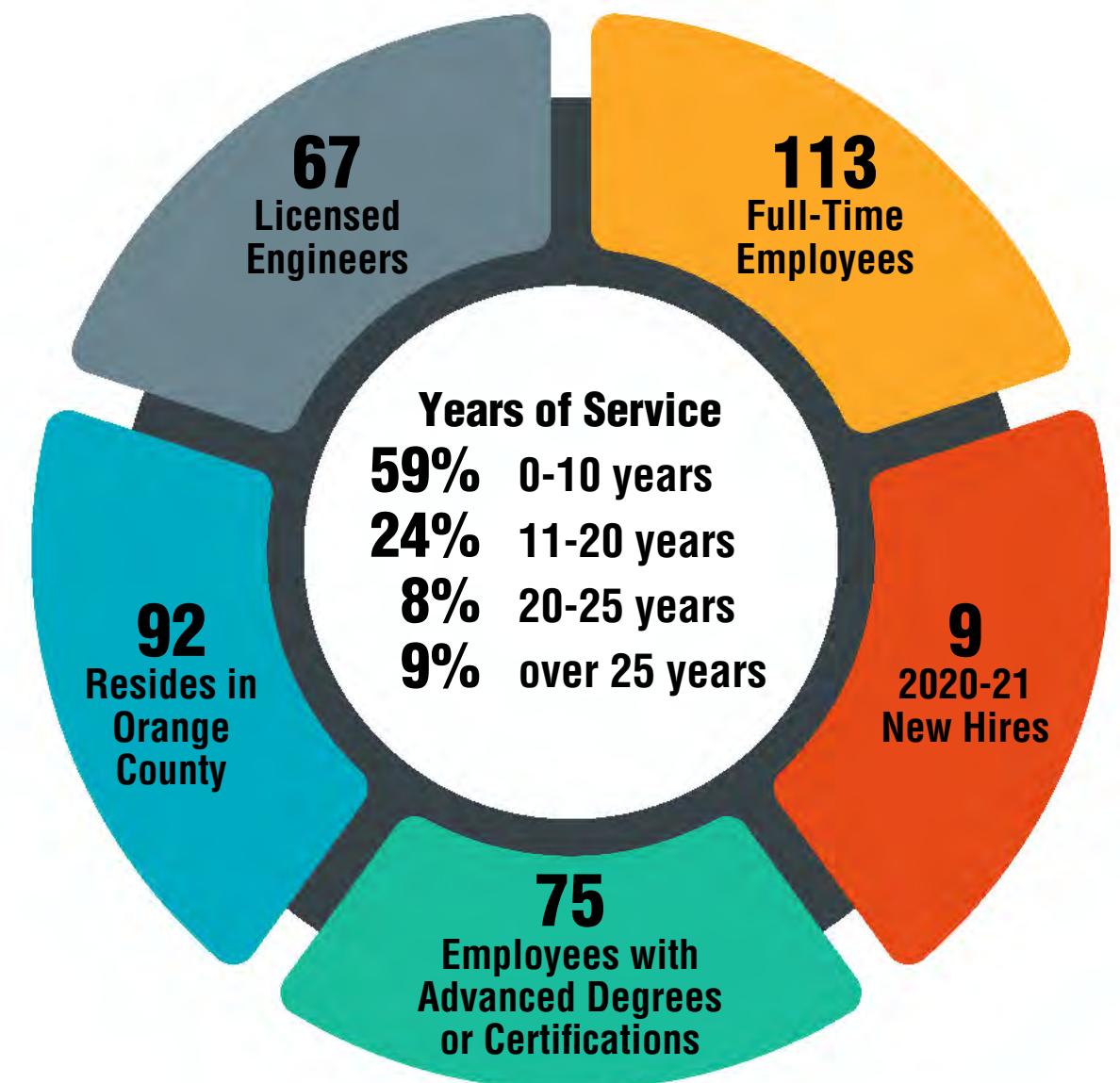
View of the construction project site of the Outfall Low Flow Pump Station Project at Plant No. 2 in Huntington Beach.

## Who We Are

The Engineering Department is responsible for the planning and execution of the CIP. It is comprised of dedicated team members, from the development and maintenance of a comprehensive CIP, project management delivery, engineering design, and construction management.

Although these numbers are representative of the Engineering Department, the overall success of the CIP Program involves the teamwork and collaboration across the agency.

## Engineering Department Stats





# MEET THE ENGINEERING







# Planning Together

Planning studies and reports are conducted to evaluate all areas of OC San assets to determine its condition. Results are used to help develop and prepare the design level scopes and work elements necessary to ensure assets are able to meet level of service requirements for future CIP projects.

## DOWN AND OUT

OC San's ocean outfall is a five mile long, 120-inch diameter pipeline that sits on the ocean floor to take treated water out to sea. The **Ocean Outfall Condition Assessment and Scoping Study** includes a condition assessment, 3D scanning and modeling, port cleaning and clearing, and a study on the impacts of low flows through the outfall. To perform the interior inspection, a remote operated vehicle was lowered into the surge tower at Plant No. 2 and made its journey down the outfall taking video and sonar images along the way.

*A crane slowly lowered a remote operated vehicle unit into the surge tower at Plant No. 2 in Huntington Beach.*



## Living with our Faults

Planning studies are conducted to assess and evaluate different components of each treatment plant, collection system, new technologies, etc. The **Active Fault Location Study at Plant No. 2** provided a site-specific fault analysis of OC San’s Huntington Beach facility. Plant No. 2 is bounded by Brookhurst Street, the Santa Ana River, and the Talbert Marsh wetland. The wetland, Pacific Coast Highway, and the Huntington State Beach separates Plant No. 2 from the Pacific Ocean.

The Plant No. 2 site spans a portion of the Newport-Inglewood fault zone. Geotechnical data from soil borings and cone penetration tests were collected from within and along the perimeter of Plant No. 2. The collected data was analyzed to identify the locations of active faults, which will be used in planning for future siting of facilities, and developing engineering design and seismic resiliency strategies.



This vehicle is used for cone penetration tests. A cone penetrometer is pushed down 100 feet into the ground and resistance information is recorded as it goes down to generate a profile of the subsurface conditions.

Map of fault displacement hazard zones at Plant No. 2 in Huntington Beach.

## Know Your Worth

OC San continues to evaluate and manage critical and major assets to ensure essential wastewater infrastructure can provide the necessary levels of service.

OC San’s infrastructure must be able to operate day and night, 24 hours a day. The replacement value of these assets is worth \$10.7 billion, and it is critical to know the condition and identify performance issues. The annual Asset Management Plan reviews and updates the ongoing and future CIP to appropriately manage risks, improve resiliency and reliability, and lower lifecycle costs.



Cover page of OC San’s 2020 Asset Management Plan.



# Design Collaboration

The dedication to the design of each project requires teamwork and collaboration. It demands countless hours, months, and years to effectively work together and produce a final design that OC San is willing to invest in for the upgrade and betterment of its infrastructure. During this reporting period, highlights demonstrating the design team's efforts include finalizing designs and transitioning large capital projects into construction.

Amid the COVID-19 pandemic, OC San continued to prepare for the well-being of Orange County's future, issuing over \$475 million of CIP construction contracts.

## The Next Generation

The **Temperature-Phased Anaerobic Digestion (TPAD) Digester Facility at Plant No. 2** will construct six new thermophilic digesters and six new Class A batch tanks. The new system will team's long-term resource recovery and operational benefits, providing reliable service to ratepayers and replacing aging infrastructure with improved technology and innovative solutions. The current digesters are over 40 - 60 years old. This next generation of digesters will make improvements in biogas and methane production, solids and organics removal, pathogen reduction, and dewaterability over conventional digesters. The new digesters will produce Class A biosolids that would expand the key reuse options from non-food crop application to food crop application in California and Arizona, landscaping amendments, and compost.

*This project is currently in Preliminary Design, with Construction expected to begin in 2025.*

*Preliminary rendering of the new TPAD digester facility at the southwest corner of Plant No. 2 in Huntington Beach.*



## Fixer to Fabulous

The **Headworks Rehabilitation at Plant No. 1** is getting a makeover. The Metering and Diversion Structure, Bar Screen Building, Headworks Odor Control Scrubbers, electrical power distribution and control systems are some of the project elements that will be rehabilitated and upgraded with new pumps, motors, and equipment. This is a complex project that will require work to be performed in prescribed sequence while maintaining the facility at all times.

*“Renewing our facilities is really important and being able to do this while keeping everything operating without interruption can become a real challenge. Good planning and a lot of collaboration is the only way to be successful...it takes a lot of specific knowledge and a lot of attention to detail to pull it off safely.” – Dean Fisher, Construction Management Manager*



*Design was finalized and the project moved to Construction during this reporting period. This is OC San’s biggest construction contract to date at over \$222 million. Construction is anticipated to be completed in 2028.*



*Aerial view of the Headworks Rehabilitation Project at Plant No. 1 in Fountain Valley.*



*The Metering and Diversion Structure will be rehabilitated as part of the Headworks Rehabilitation at Plant No. 1 project.*



## On the Streets

The streets are about to get busy with construction. As part of the Rehabilitation of the Western Regional Sewers, the **Orange-Western Sub-Trunk & Los Alamitos Trunk Sewer Rehabilitation** will be making a presence in the cities of Anaheim, Buena Park, Cypress, Los Alamitos, Seal Beach, and unincorporated area of Rossmore. Over eight miles of pipelines and 100 manholes will be either rehabilitated or replaced.

*Design was finalized during this reporting period. The \$17.8-million construction contract will begin Fall 2021 and be completed in 2023.*

## Back to Basics

The basics of wastewater treatment are preliminary, primary, and secondary stages. The **A-Side Primary Clarifiers Replacement** at Plant No. 2 will construct four new primary clarifiers. Preliminary treated wastewater settles in these large circular tanks and solids are removed. Although the concept of wastewater treatment has not changed much, this project will also include upgraded odor control, improved pump station maintainability, and more resilient power distribution.

*Design was finalized during this reporting period. The \$111-million construction contract will begin Fall 2021 and be completed in 2026.*



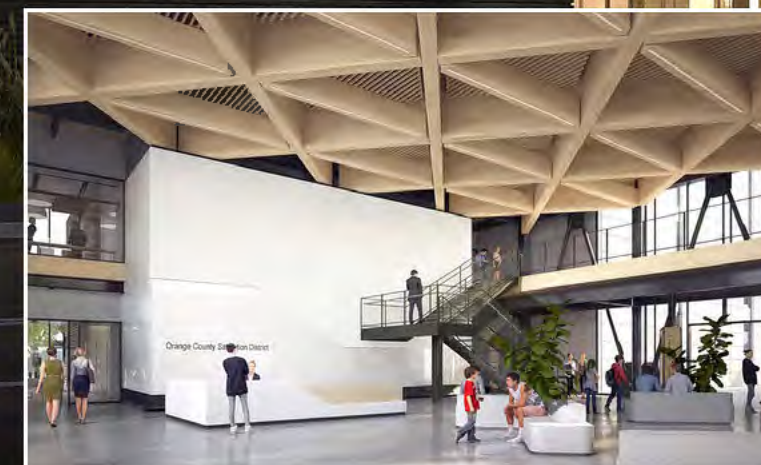
*Aerial view of the existing Primary Clarifiers at Plant No. 2 in Huntington Beach.*

## For the Future

OC San has always planned for the long-term, developing progressive roadmaps and facilities master plans for the agency to maintain and build the necessary infrastructure. A new administrative **Headquarters Complex** will be constructed across the street from Plant No. 1, allowing various administrative staff dispersed throughout the plant to come together in a centralized location. This will allow ten aging buildings and temporary trailers to be demolished, preserving space for future wastewater infrastructure. The three-story office building will include an educational center, public lobby, surface parking, and pedestrian bridge connecting the new building to Plant No. 1.

Engineered wood, or mass timber, will be used throughout the design of the office building. The material is strong, fire resistant, aesthetically pleasing, efficient, reduces carbon footprint, and works alongside other materials as a structural element. The new building is slated for LEED (Leadership in Energy and Environmental Design) Gold certification.

*Design was finalized during this reporting period. The \$102.5-million construction contract will begin Fall 2021 and be completed in 2023.*



*Architectural rendering of the front lobby with mass timber elements.*

*Architectural rendering of the building and bridge at night, view from Ellis Avenue.*





# Construction During COVID

OC San collects, treats, recycles, and disposes more than 180 million gallons of wastewater every single day, a service which is vital, crucial, and critical to the everyday lives in central and northern Orange County. As COVID-19 was declared a pandemic, California issued a statewide executive order mandating residents to stay at home except to maintain continuity of operations of essential services. Despite the uncertainties of the COVID-19 global pandemic, construction at OC San continued to ensure reliability of its essential infrastructure.

*On the Westminster Blvd. Sewer Project, a 30-inch diameter steel pipe is being installed through the intersection of Westminster Blvd. and Bolsa Chica Rd. in the City of Westminster.*



## The Work Must Go On

As office staff acclimated to working from home, construction ramped up on the **Westminster Blvd. Sewer Project** to replace a critical infrastructure, a dual force main system spanning three miles in the cities of Seal Beach and Westminster. “Essential service” was one of the popular COVID buzz phrases of 2020, and for OC San, that is exactly what it was. This project had to go on to meet our responsibility of providing the reliable infrastructure needed to protect public health.

*Construction commenced Spring 2020 and is anticipated to be completed late 2022.*



*Senior Construction Inspector Matt Goldsmith overlooking the Westminster Blvd. Sewer Project in the City of Seal Beach.*

## End of the Road

With a new larger pipeline constructed as part of the **Newhope-Placentia Trunk Replacement, Segment B Project**, up to an additional eight million gallons per day of sewer flows will be diverted to Plant No. 1 for treatment and further treated at the Groundwater Replenishment System. It's the end of the road as this project wraps up construction. After three years of construction along State College Boulevard, the streets will be fully returned to the City of Anaheim after roadway paving and median restoration are completed.

*Construction commenced Fall 2018 and is anticipated to be completed Fall 2021.*

## Time for a Split

The Groundwater Replenishment System (GWRS), a partnership between OC San and the Orange County Water District, is the world's largest water purification system. To increase the production rate, it's time to split the Headworks Modifications at Plant No. 2 in Huntington Beach to expand GWRS by separating reclaimable from non-reclaimable flows. When Final Expansion of GWRS is completed, we will be able to recycle 100 percent of reclaimable secondary effluent.

*Construction commenced Spring 2020 and is anticipated to be completed Winter 2023.*



*On the Headworks Modifications at Plant No. 2 Project in Huntington Beach, a 72-inch diversion pipe transition piece is being installed for the influent metering structure.*



## Process Junction, What's Your Function?

This project also supports the GWRS Final Expansion. Because all reclaimable flows will be recycled with the final expansion, less flow will be pumped out the five mile long ocean outfall pipeline to the ocean. The Outfall Low Flow Pump Station at Plant No. 2 will construct a new pump station to handle the lower flows more efficiently and replace the plant water pump station to maintain separation of reclaimable and non-reclaimable flows.

A new junction structure will deliver secondary effluent from the trickling filter process to the new Outfall Low Flow and Plant Water Pump Stations.

*Construction commenced Spring 2019 and is anticipated to be completed Fall 2024.*



*View of the new wet well for the Outfall Low Flow Pump Station (right) and wet well for the Plant Water Pump Station (left). At the top is the new Junction Structure. When construction is completed, most of the infrastructure will be underground, and a few feet of the top of the junction structure will be above ground.*

## Community Outreach Program A Virtual Connection

The Community Outreach Team works closely and collaboratively as a team to deliver transparent communications of its capital improvement projects. OC San has a very proactive community outreach approach, aiming to start communications early and to get stakeholders engaged.

Community outreach plays a significant role in the overall success of the CIP. A variety of tools and resources are used to broaden reach to the public. With a program designed to connect with the people, the global COVID-19 pandemic with stay-at-home orders, face masks, and social distancing required a more virtual presence. It is fortunate we are in a time that technology is so prevalent, allowing the program to face the pandemic challenges head on and make positive use of the internet, text messaging, and virtual meetings.



*Principal Public Affairs Specialist and State College Sewer Project Community Liaison Daisy Covarrubias at a virtual community outreach meeting.*



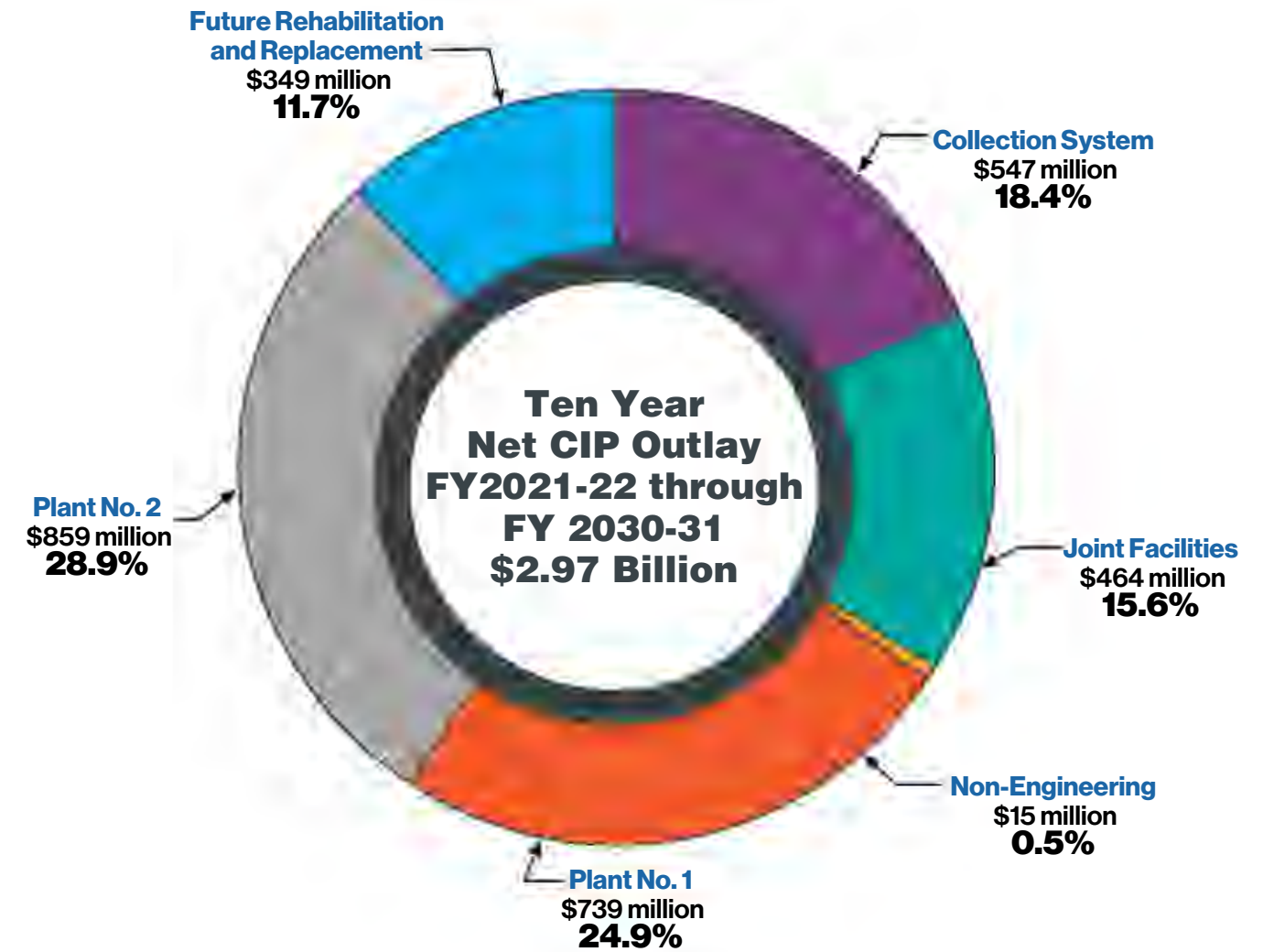
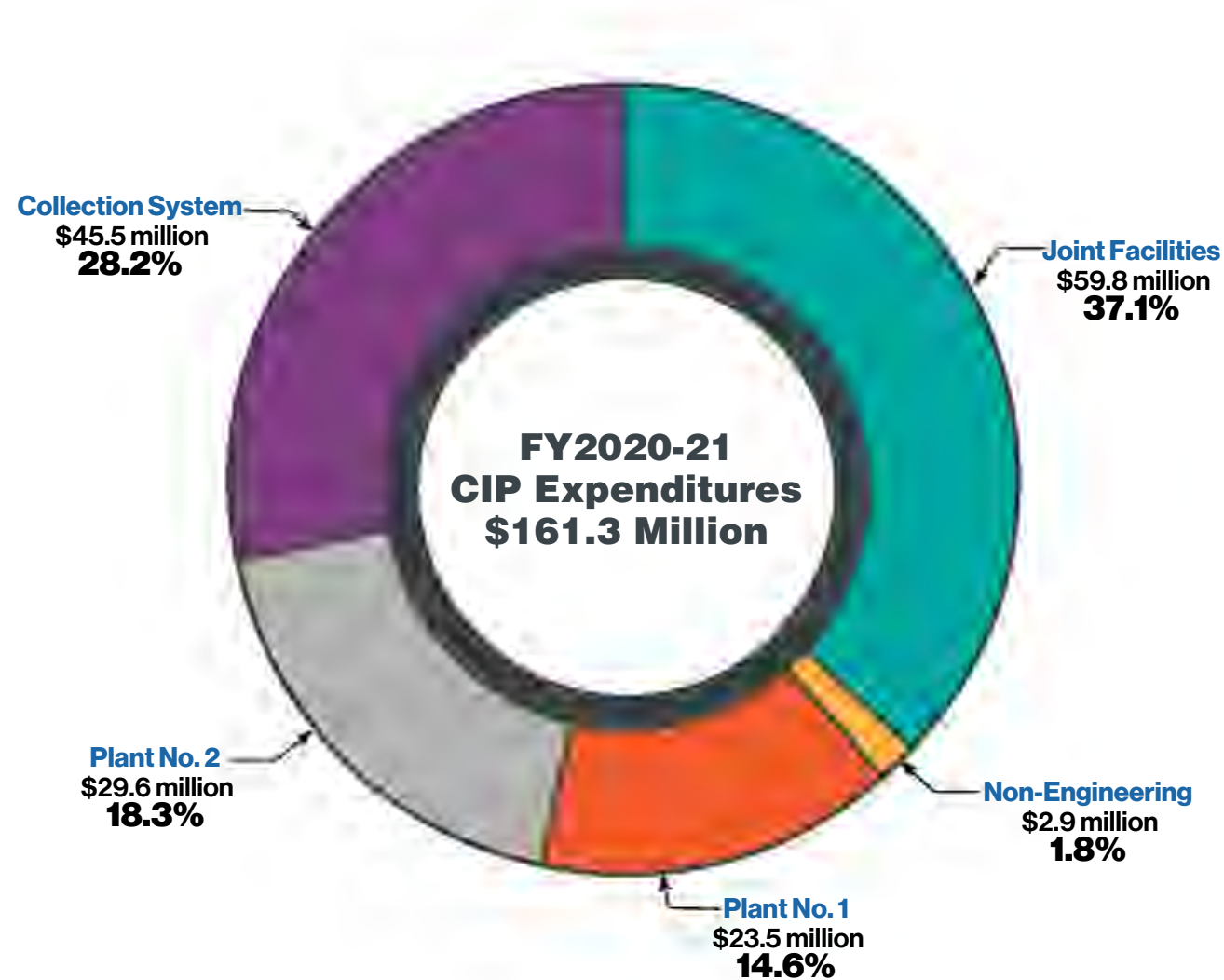


## Financial Data

The Capital Improvement Program (CIP) budget is thoroughly reviewed, validated, and approved annually by the Board of Directors as part of OC San's overall budget process. The cashflow, or CIP outlay, is forecasted based on predicted expenditures throughout the various phases of active projects.

During the pandemic, the work produced by the CIP never wavered. In fact, the CIP outlay actuals of \$161.3 million not only met but exceeded planned projections.

The net CIP outlay for the next 10 years is \$2.97 billion, with many projects primarily focused on rehabilitation and replacement at both facilities and throughout the collection system. Projects that have not been fully scoped yet are represented as future rehabilitation and replacement. Non-engineering projects are expenses from Information Technology and Operations and Maintenance.



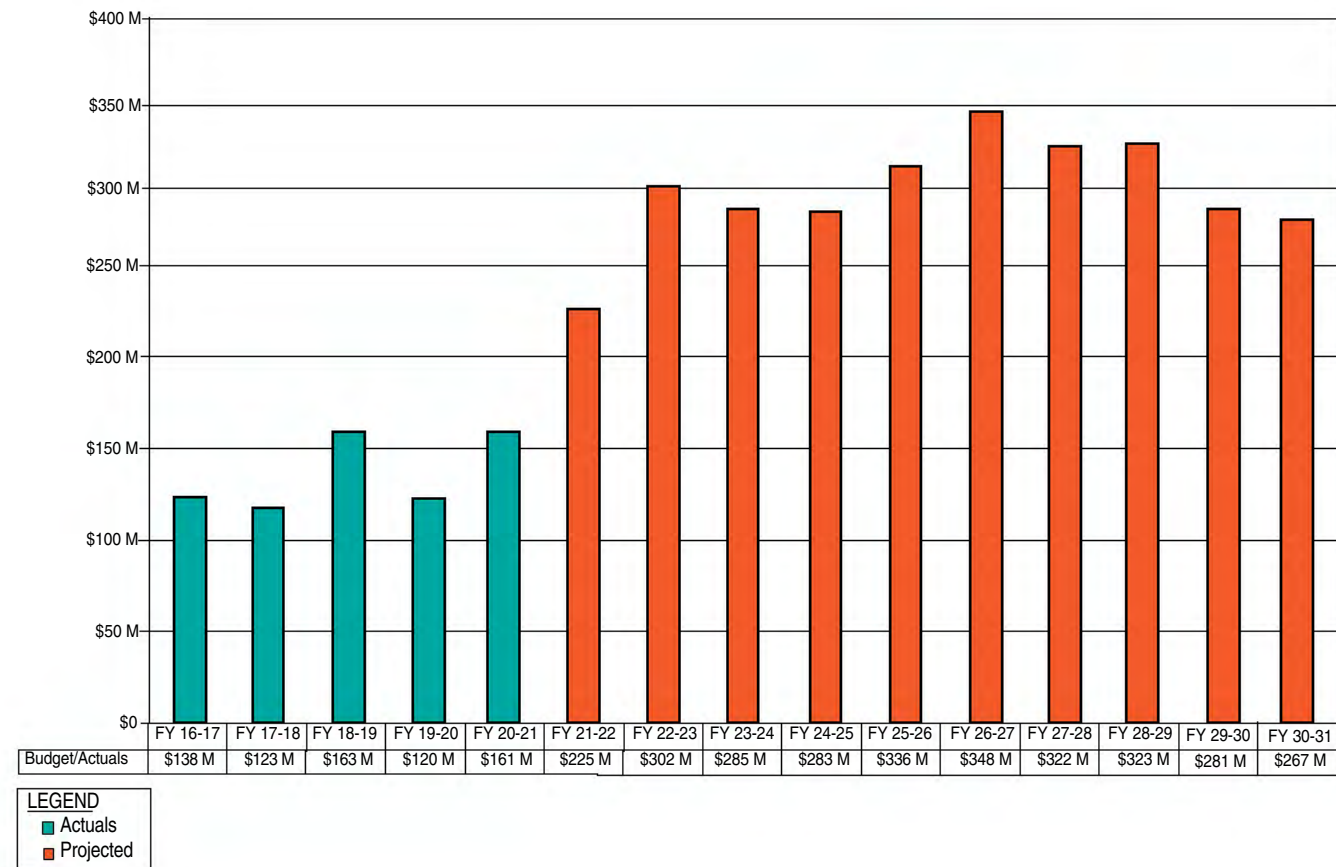


## Program Cash Flow

Just as the agency name and logo has evolved over time, so has the CIP. From creating the initial infrastructure to provide basic wastewater collection and treatment, expanding capacity for future growth, to now focusing on aging infrastructure and maximizing resource recovery. With guidance from OC San's Board of Directors, we have a strong rehabilitation and replacement CIP program.

The chart below shows the historical expenditures over the past five years and the projected CIP budget for the next ten years. Starting FY 22-23, you see a trend of future CIP spending over \$250 million annually!

### Annual Net CIP Outlay



*Westminster Blvd. Sewer Project in action in the city of Westminster. A driving lane in each direction is kept open while the work takes place in the median area.*



## Contract Activity

The following tables show the contracts awarded (rounded to the nearest thousand) between July 1, 2020 through June 30, 2021. Small capital or non-engineering projects from Information Technology and Operations and Maintenance are not listed.

PLANNING STUDIES CONTRACTS AWARDED					
Location(s)	Project No.	Project Name	Consultant	Amount of Award	Date of Award
Plant No. 1	PS19-03	Laboratory Rehabilitation Feasibility Study	HDR Engineering, Inc.	\$275,000	October 2020
Plant Nos. 1 and 2	PS20-04	Power Generation Overhaul Feasibility Study	Brown and Caldwell	\$123,000	March 2021
Plant Nos. 1 and 2	RE20-02	Chemical Resilience Study at Plant Nos. 1 and 2	Hazen and Sawyer	\$279,000	June 2021

DESIGN CONTRACTS AWARDED					
Location(s)	Project No.	Project Name	Consultant	Amount of Award	Date of Award
Plant No. 2	P2-128	TPAD Digester Facility at Plant No. 2	Brown and Caldwell	\$39,300,000	July 2020
Costa Mesa, Irvine	7-65	Gisler - Red Hill Interceptor Rehabilitation	CDM Smith Inc.	\$1,754,000	October 2020
Plant No. 2	P2-126	Warehouse, Electrical Substation and 12kV Service Center Replacement at Plant No. 2	Stantec Consulting Services, Inc.	\$4,876,000	November 2020
Orange	2-49	Taft Branch Improvements	Woodward and Curran	\$2,200,000	February 2021
Newport Beach	7-68	MacArthur Force Main Improvements	Michael Baker International, Inc.	\$500,000	May 2021

CONSTRUCTION CONTRACTS AWARDED					
Location(s)	Project No.	Project Name	Contractor	Amount of Award	Date of Award
Plant Nos. 1 and 2	J-127	Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	Innovative Construction Solutions	\$275,000	July 2020
Fullerton	FE19-09	Newhope - Placentia Trunk Grade Separation Replacement Repairs	Charles King Company, Inc.	\$123,000	September 2020
Plant No. 2	FE18-14	Plant Water Pipeline Replacement in Kinnison, Lindstrom, and Scott Tunnels at Plant No. 2	MMC, Inc.	\$1,134,000	December 2020
Plant No. 1	P1-105	Headworks Rehabilitation at Plant No. 1	Kiewit Infrastructure West Co.	\$222,330,000	February 2021
Plant No. 1	P1-135	Digester Ferric Chloride Piping Replacement at Plant No. 1	PPM Contracting	\$515,000	February 2021
Plant No. 2	FE18-15	Plant Boiler System Relief at Plant No. 2	MMC, Inc.	\$230,000	April 2021
Anaheim, Buena Park, Cypress, Los Alamitos, Seal Beach, unincorporated County of Orange	3-64A & 3-64B	Orange-Western Sub-Trunk and Los Alamitos Trunk Sewer Rehabilitation	Steve P. Rados, Inc.	\$17,775,000	May 2021
Plant No. 1	P1-128A	Headquarters Complex at Plant No. 1	Swinerton Builders	\$102,545,000	May 2021
Plant No. 2	P2-98A	A-Side Primary Clarifiers Replacement at Plant 2	PCL Construction, Inc.	\$111,406,000	May 2021



Construction in progress of a new junction structure on the Outfall Low Flow Pump Station project at Plant No. 2 in Huntington Beach.



This table shows the construction contracts completed between July 1, 2020 and June 30, 2021.

CONSTRUCTION CONTRACTS COMPLETED					
Location(s)	Project No.	Project Name	Contractor	Total Contract Amount	Date of Completion
Brea	FE17-01	Carbon Canyon Pipeline Sag Repairs	Mike Prlich and Sons, Inc.	\$455,118	August 2020
Plant Nos. 1 and 2, OC San Service Area	J-126PQ	Ladders, Hatches, Roof Fall Protection	Tharsos, Inc.	\$816,625	August 2020
Plant No. 1	P1-115B	Rehabilitation of Fleet Services Building, Building 8 and Paving Area	ODC Engineering & Technology	\$2,451,757	August 2020
Plant No. 1	P1-129	Return Activated Sludge Piping Replacement at Activated Sludge Plant No. 1	Abhe & Svoboda, Inc.	\$6,931,452	November 2020
Placentia	FE17-06	Tustin Ave Manhole and Pipe Repair	Nuline Technologies, LLC	\$440,684	December 2020
Fullerton	FE19-09	Newhope - Placentia Trunk Grade Separation Replacement Repairs	Charles King Company, Inc.	\$298,850	December 2020
Plant No. 2	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Shimmick Construction Co., Inc.	\$52,839,236	December 2020
Plant No. 1	SC18-05	Laboratory Boiler Burner Replacement at Plant No. 1	ODC Engineering & Technology	\$292,767	February 2021
Plant No. 2	FE18-17	Trunkline Sampler Power Feed at Plant No 2	M. Brey Electric, Inc.	\$101,050	February 2021
Plant Nos. 1 and 2	SC17-03	CenGen Oil Filters Platform at Plant No. 1 and Plant No. 2	Metro Builders and Engineers Group, Ltd.	\$145,439	March 2021
Plant Nos. 1 and 2, OC San Service Area	J-126JK	Stairs, Hatches, Walkway Hazards, Ladders, Guardrails, Roof Fall Protection	Olsson Construction, Inc.	\$3,903,884	April 2021



Senior Construction Inspector Glenn Suchor overlooking work on the Headworks Modification at Plant No. 2 project in Huntington Beach.



## Engineering CIP Projects

This section lists all the active studies and projects during the reporting period.



*Resident Engineer Adam Coghill at the Outfall Low Flow Pump Station Project at Plant No. 2 in Huntington Beach.*

The following table lists the active and completed planning and research studies. Results from these studies help to develop future CIP projects.

PLANNING AND RESEARCH STUDIES				
Location(s)	Project No.	Project Name	Status	Project Budget
Huntington Beach	PS15-02	Edinger Pump Station Rehabilitation Study	Completed	\$971,000
Plant No. 2	PS17-03	Active Fault Location Study at Plant No. 2	Active	\$1,300,000
Plant Nos. 1 and 2, OC San Service Area	PS18-06	Go/No-Go Lights and Signage	Active	\$495,000
Plant No. 2	PS18-09	Ocean Outfall Condition Assessment and Scoping Study	Active	\$3,340,000
Plant Nos. 1 and 2	PS18-11	ETAP Model Updates for Plant Nos 1 and 2	Active	\$553,000
Plant No. 1	PS19-01	Digester 6 Pipe Stress Analysis at Plant No. 1	Completed	\$45,000
Plant No. 1	PS19-03	Laboratory Rehabilitation Feasibility Study	Active	\$450,000
Plant No. 2	PS20-01	O&M Complex and Collections Yard Relocation at Plant No. 2	Active	\$375,000
OC San Service Area	PS20-02	Collection System Flow Level Monitoring Study	Active	\$575,000
Plant No. 2	PS20-03	Truck Loading Bay Odor Control Improvements Study at Plant No. 2	Active	\$200,000
Plant Nos. 1 and 2	PS20-04	Power Generation Overhaul Feasibility Study	Active	\$200,000
Plant Nos. 1 and 2	PS20-05	Cen Gen Pressure Vessel Integrity Assessment at Plant Nos. 1 and 2	Active	\$400,000
Costa Mesa	PS20-07	College Pump Station Wet Well Condition Assessment Study	Active	\$200,000
Anaheim, Fountain Valley, Fullerton, Garden Grove, Santa Ana	PS20-08	Euclid Trunk Sewer Hydraulic Modeling and Odor Control Analyses	Active	\$500,000
Plant Nos. 1 and 2	RE17-02	Biogas Scrubber Evaluation	Completed	\$865,000
Plant Nos. 1 and 2	RE17-04	AquaNereda Aerobic Granular Sludge Process	Completed	\$242,000
Plant No. 1	RE18-02	Protein Matrix Demonstration Study at Plant No 1	Completed	\$310,000
Plant No. 1	RE19-01	Primary Scum Equipment Evaluation at Plant No. 1	Active	\$31,000
Plant No. 1	RE20-01	Co-Thickened Sludge Density Meter Trial at Plant No. 1	Active	\$121,000
Plant Nos. 1 and 2	RE20-02	Chemical Evaluation Study at Plant No 1 and 2	Active	\$330,000
Plant No. 1	RE20-04	Holding Digester 6 Solids Shredder Study at Plant No. 1	Active	\$95,000



The tables on the following pages are all the active or completed projects for the reporting period. The status, phase, and project budget (rounded to the nearest hundred) are as of June 30, 2021. Small capital or non-engineering projects from Information Technology and Operations and Maintenance are not listed.

RECLAMATION PLANT NO. 1 IN FOUNTAIN VALLEY			
Project No.	Project Name	Phase	Project Budget
P1-101	Sludge Dewatering and Odor Control at Plant No. 1	Completed	\$197,000,000
P1-105	Headworks Rehabilitation at Plant No. 1	Construction	\$406,000,000
P1-115	Title 24 Access Compliance and Building Rehabilitation Project	Completed	\$14,043,000
P1-115B	Rehabilitation of Fleet Services Building, Building 8 and Paving Area	Completed	\$4,357,000
P1-126	Primary Sedimentation Basins No. 3-5 Replacement at Plant No. 1	Project Development	\$127,000,000
P1-128A	Headquarters Complex at Plant No. 1	Construction	\$163,949,000
P1-128C	Headquarters Complex Site Preparation	Close out	\$2,453,000
P1-129	Return Activated Sludge Piping Replacement at Activated Sludge Plant No. 1	Close out	\$9,300,000
P1-132	Uninterruptible Power Supply Improvements at Plant No. 1	Design	\$7,000,000
P1-133	Primary Sedimentation Basins No. 6-31 Reliability Improvements at Plant No. 1	Design	\$14,100,000
P1-134	South Perimeter Security and Utility Improvements at Plant No.1	Bid and Award	\$10,000,000
P1-135	Digester Ferric Chloride Piping Replacement at Plant No. 1	Construction	\$1,360,000
P1-137	Supports Buildings Seismic Improvements at Plant No. 1	Project Development	\$23,730,000

TREATMENT PLANT NO. 2 IN HUNTINGTON BEACH			
Project No.	Project Name	Phase	Project Budget
P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Close out	\$86,768,000
P2-98A	A-Side Primary Clarifiers Replacement at Plant No. 2	Construction	\$171,856,000
P2-98B	B/C-Side Primary Clarifiers Interim Repair at Plant No. 2	Construction	\$13,635,000
P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	Completed	\$31,000,000
P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Construction	\$32,000,000
P2-123	Return Activated Sludge Piping Replacement at Plant No. 2	Construction	\$10,000,000
P2-124	Interim Food Waste Receiving Facility	On Hold	\$6,300,000
P2-126	Warehouse, Electrical Substation and 12kV Service Center Replacement at Plant No. 2	On Hold	\$65,000,000
P2-128	TPAD Digester Facility at Plant No. 2	Project Development	\$455,000,000

JOINT FACILITIES PROJECTS LOCATED AT PLANT NO. 1, PLANT NO. 2, AND/OR OC SAN SERVICE AREA			
Project No.	Project Name	Phase	Project Budget
J-98	Electrical Power Distribution System Improvements	Design	\$26,500,000
J-117B	Outfall Low Flow Pump Station	Construction	\$136,070,000
J-124	Digester Gas Facilities Replacement	Design	\$173,000,000
J-126C	NFPA 820 HVAC and Electrical Improvements	Close Out	\$516,000
J-126JK	Stairs, Hatches, Walkway Hazards, Ladders, Guardrails, Roof Fall Protection	Close Out	\$4,001,000
J-126L	Safety Improvement at Bitter Point, MacArthur, Seal Beach, Westside, and Yorba Linda Pump Stations	Completed	\$234,000
J-126PQ	Ladders, Hatches, Roof Fall Protection	Completed	\$865,000
J-127	Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	Construction	\$2,000,000
J-128	Project Management Information System	Construction	\$2,280,000

COLLECTION SYSTEM PROJECTS				
Location(s)	Project No.	Project Name	Phase	Project Budget
Yorba Linda	2-41-8	SARI Rock Stabilizers Removal	Completed	\$4,860,000
Orange	2-49	Taft Branch Improvements	Preliminary Design	\$16,800,000
Fullerton	2-65	Newhope - Placentia Trunk Grade Separation Replacement	Completed	\$4,300,000
Anaheim	2-72B	Newhope - Placentia Trunk Replacement, Segment B	Construction	\$82,897,000
Seal Beach, Westminster	3-62	Westminster Blvd Force Main Replacement	Construction	\$44,000,000
Anaheim, Buena Park, Cypress, Los Alamitos, Seal Beach, County of Orange	3-64A & 3-64B	Orange - Western Sub-Trunk and Los Alamitos Trunk Sewer Rehabilitation	Construction	\$28,624,000
Cypress, La Palma, Los Alamitos	3-64C	Cypress Trunk Sewer Rehabilitation - West	Design	\$39,458,000
Seal Beach, Westminster	3-67	Seal Beach Pump Station Replacement	Design	\$87,000,000
Newport Beach	5-67	Bay Bridge Pump Station Replacement	Preliminary Design	\$74,000,000
Newport Beach	5-68	Newport Beach Pump Station Pressurization Improvements	Design	\$4,300,000
Newport Beach	6-17	District 6 Trunk Sewer Relief	Completed	\$7,250,000
Costa Mesa, Irvine	7-65	Gisler - Red Hill Interceptor Rehabilitation	Design	\$39,000,000
Irvine, Santa Ana	7-66	Sunflower and Red Hill Interceptor Repairs	Bid and Award	\$7,000,000
Newport Beach	7-68	MacArthur Pump Station Force Main Improvements	Preliminary Design	\$3,500,000



SMALL CONSTRUCTION PROJECTS				
Location(s)	Project No.	Project Name	Phase	Project Budget
Fullerton	FE10-21	Area 02 Craig Regional Park Manhole Improvements	Bid and Award	\$1,359,000
Plant No. 1	FE14-05	Plant No. 1 Fleet Services UST Leak Remediation	Close Out	\$1,487,000
Plant No. 1	FE15-07	Secondary Treatment and Plant Water VFD Replacement at Plant 1	Completed	\$3,320,000
Newport Beach	FE15-10	East Lido Force Main Rehabilitation	Completed	\$2,228,000
Plant No. 1	FE16-06	Fuel Cell Facilities Demolition	Completed	\$960,000
Irvine	FE16-11	Lane Channel Crossing	Completed	\$500,000
Huntington Beach	FE16-14	Slater Pump Station Valve Replacements	Completed	\$947,000
Brea	FE17-01	Carbon Canyon Pipeline Sag Repairs	Completed	\$873,000
Plant No. 1	FE17-03	Battery Storage System at Plant No. 1	Close Out	\$650,000
Plant No. 1	FE17-05	Plant 1 ICS Network Extension	Construction	\$950,000
Plant Nos. 1 and 2	FE18-06	GenGen Instrument Air Compressors Replacement at Plant No. 1 and Plant No. 2	Design	\$1,450,000
Santa Ana	FE18-08	West Trunk Bypass Sewer Realignment	Completed	\$158,000
Plant No. 1 and 2	FE18-11	Headworks Explosive Gas Monitoring Systems at Plant No. 1 and Plant No. 2	Construction	\$470,000
Huntington Beach	FE18-12	Erosion Control at Santa Ana River and Hamilton Ave	Bid and Award	\$330,000
Santa Ana	FE18-13	Redhill Relief Sewer Relocation at State Route 55	Design	\$2,840,000
Plant No. 2	FE18-14	Plant Water Pipeline Replacement in Kinnison, Lindstrom, and Scott Tunnels at Plant No. 2	Construction	\$1,895,000
Plant No. 1	FE18-15	Plant Boiler System Relief at Plant No. 2	Construction	\$465,000
Plant No. 1	FE18-16	Truck Loading Basement Drain Modifications at Plant No. 1	Bid and Award	\$592,000
Plant No. 2	FE18-17	Trunkline Sampler Power Feed at Plant No 2	Close Out	\$249,000
Newport Beach	FE18-18	Portable Generator Connector at Lido Pump Station	Completed	\$116,000
Plant No. 2	FE18-19	12KV Distribution B and East RAS Pump Station Roofing Replacement	Close Out	\$1,188,000
Plant No. 1	FE18-20	Blower Building No. 1 Air Compressors at Plant No. 1	Design	\$1,200,000
OC San Service Area	FE19-01	Pump Station Portable Generator Connectors	Bid and Award	\$2,570,000
Plant No. 1	FE19-02	GenGen Plant Water Pipe Replacement at Plant No. 1	Design	\$2,250,000
Plant No. 1	FE19-03	Trickling Filter Sludge and Scum Pumps Replacement at Plant No. 1	Design	\$700,000
Plant No. 1	FE19-04	Sunflower Pump Replacement at Plant No. 1	Bid and Award	\$3,200,000
Plant No. 2	FE19-06	EPSA Motor Cooling Improvements at Plant No. 2	Bid and Award	\$1,475,000
Plant No. 2	FE19-08	Secondary Treatment VFD Replacements at Plant No. 2	Design	\$3,337,000
Fullerton	FE19-09	Newhope - Placentia Trunk Grade Separation Replacement Repairs	Completed	\$500,000
Plant No. 2	FE19-10	Digesters C, D, F, G and I Gas Balance Lines Replacement at Plant No. 2	Design	\$300,000

SMALL CONSTRUCTION PROJECTS (CONTINUED)				
Location(s)	Project No.	Project Name	Phase	Project Budget
Plant No. 1	FE19-11	Primary Clarifiers Nos. 6-31 Lighting and Alarm Improvements at Plant No. 1	Design	\$1,250,000
Plant No. 1	FE19-12	Rebuild Shop Fume Extractor Installation at Plant No 1	Design	\$445,000
Seal Beach	FE19-13	VFD Replacements at Seal Beach Pump Station	Design	\$690,000
Plant No. 1	FE20-01	Wastehauler Station Safety and Security Improvements	Design	\$830,000
Plant No. 2	FE20-02	Digester C, D, F, and G Mechanical Rehabilitation at Plant No. 2	Design	\$2,800,000
Plant No. 1	FE20-03	Return Activated Sludge Discharge Piping Replacement at Activated Sludge Plant No. 1	Design	\$4,250,000
Plant No. 2	FE20-04	GenGen Cooling Water Pipe Replacement at Plant No. 2	Design	\$3,500,000
Plant No. 1	FE20-05	Plant Water Piping Replacement at Secondary Clarifiers 1-26 at Plant No. 1	Design	\$1,545,000
Plant No. 1	FE20-06	Thickening and Dewatering Building Pipe Support Improvements at Plant No. 1	Design	\$1,500,000
Plant No. 1	FE20-07	Santa Ana Trunk Rehabilitation at Plant No. 1	Design	\$1,240,000
Anaheim, Orange	FE20-08	Olive Sub-Trunk Siphon Rehabilitation at Santa Ana River	Design	\$1,850,000
Plant Nos. 1 and 2	FE20-09	GenGen Smoke Detection Improvements at Plant No. 1 and No. 2	Design	\$600,000
Seal Beach	FE20-10	Adolfo Lopez Chemical Dosing Station Installation	Project Development	\$1,000,000



Excavation on the Headworks Rehabilitation Project at Plant No. 1 in Fountain Valley.



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*After pipeline installation is completed, medians are constructed as part of the final street restoration along State College Blvd. on the Newhope-Placentia Trunk Replacement, Segment B Project in the City of Anaheim.*



A large-scale construction project is underway at a wastewater treatment facility. In the center, a yellow excavator is positioned in a deep trench, working on a large concrete pipe. Several construction workers, wearing high-visibility yellow and orange safety vests and hard hats, are scattered around the site. Some are standing on the ground, while one is crouching in the trench. The background shows a chain-link fence and some buildings under a clear blue sky.

# TOGETHER

**Reclamation Plant No. 1**  
(Administration Offices)  
10844 Ellis Avenue  
Fountain Valley, California 92708  
714.962.2411

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

**For more information**  
Email: [constructionhotline@ocsan.gov](mailto:constructionhotline@ocsan.gov)  
Phone: 714.378.2965

[www.ocsan.gov](http://www.ocsan.gov)

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