FISCAL YEAR 18/19

CAPITAL IMPROVEMENT PROGRAM

PREPARE **PLAN** **PROVIDE**

CELEBRATING 65 YEARS
ORANGE COUNTY SANITATION DISTRICT


CELEBRATING
65
YEARS
ORANGE COUNTY
SANITATION DISTRICT

From the Director of Engineering

This year we celebrate the Orange County Sanitation District's (OCSD) 65th anniversary. Sixty-five years of making an impact on our community, our environment and our industry. As we look back in history, we reflect on our accomplishments, including the courageous commitment to partner with the Orange County Water District to construct the Groundwater Replenishment System — the world's largest water purification system for indirect potable reuse. This could not have been possible without the support of our Board of Directors and the public we serve.

The next sixty-five years will look very different for OCSD. We will transition our focus from the building and growing of our facilities to the maintenance and reliability of our infrastructure. We need to be prepared for future changes in the industry, plan for aging assets, and continue to provide effective wastewater collection, treatment and recycling.

Prepare. OCSD must be prepared to manage new challenges as resource recovery continues to evolve. Addressing new constituents of concern as well as understanding risks associated with seismic activity and climate resiliency will need to be addressed while maintaining our levels of service and cost-effective rate structure.

Plan. With a Capital Improvement Program of nearly $2.7 billion over the next 10 years, it is important to have a well-developed plan to effectively manage projects at the lowest life-cycle cost and with an acceptable level of risk. We will accomplish this with a robust Asset Management Program, and have a clear understanding of what we own, what condition it is in, and what the plans are for OCSD in the future.

Provide. Each project we execute, from project development through closeout, ensures we can continue to provide to our customers the required level of service of effective wastewater collection, treatment, and recycling.

OCSD is strong, resilient and innovative. I am confident OCSD will continue to lead the way in our next sixty-five years of protecting the public health and the environment. On behalf of the Engineering Department, I present this annual report to highlight some of the amazing efforts of our employees during the 2018-19 fiscal year.

Kathleen T. Millea

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

Scheduled Headworks shutdown at Plant No. 2.

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New thickening and dewatering centrifuges at Plant No. 1.

INTRODUCTION **AND BACKGROUND**

ABOUT THE **AGENCY**

The Orange County Sanitation District (OCSD) officially began operations in 1954. Governed by a board of 25 members, OCSD is a special district created by the local community to provide the essential service of collection, treatment, and recycling of wastewater.

2.6 million people can be assured the nearly 400 miles of regional sewers, 15 pump stations, reclamation plant in Fountain Valley, and treatment plant in Huntington Beach are in good working condition for the present and the future through a robust asset management philosophy. In order for OCSD to be prepared for the future, thoughtful and careful planning goes into capital improvements in order to continuously provide the level of services to the public we serve.

CAPITAL IMPROVEMENT PROGRAM **OVERVIEW**

The Capital Improvement Program (CIP) is the foundation of keeping OCSD facilities operating at optimal levels. The CIP reflects an ongoing responsibility to ensure OCSD's infrastructure is reliable. A successful program has foresight and incorporates asset management tools to guide and strategically plan projects for the next 5, 10, 20 years and beyond.

Over the 2018-19 fiscal year, Engineering worked on over 100 active projects with 20 projects in design and completed ten in construction. This annual report provides a snapshot of the Engineering Department's efforts and active projects in the past year.

For additional information on the Capital Improvement Program please visit our website at www.OCSD.com/construction.

Centrifugal pumps in the basement of the new Thickening and Dewatering Facility at Plant No. 1.

Secondary clarifiers at Plant No. 1.

PLANNING

As part of the long-term CIP planning efforts, studies are always being conducted that evaluate various areas of the plants and the collection system to determine their condition, and identify deficiencies or improvements needed. Eventually, they identify new planned CIP Projects and provide support. Below are some of the planning Projects that took place during the fiscal year.

SEISMIC EVALUATION OF STRUCTURES AT PLANT NOS. 1 AND 2

This study assessed our critical process facilities and occupied structures by evaluating their performance in the event of a seismic occurrence and determining what will be required to bring it up to current building code standards and/or prevent catastrophic failures. This was highlighted in last year's report and is near completion. The study has identified the need for various geotechnical (soil related) and structural improvements. The prioritized list of improvements is based on many factors with some of the highest factors being life safety and criticality to the wastewater treatment process. From this list, improvements can be incorporated into existing and future capital improvement projects.

CLIMATE RESILIENCY STUDY

OCSD's treatment facilities never close for business and the same also applies whenever extreme water related events occur. These events can be rain, high tides, sea level rise, and even tsunamis that can contribute to some sort of flooding that may render these facilities inoperable. This study performed a site-specific risk assessment on OCSD's facilities in the coastal and flood plain areas and developed practical mitigation measures that could be incorporated immediately or within future capital projects. The study is near completion and in the process of developing recommendations for the Board of Directors.

1983, flooded streets in Newport Beach (OC Register).

Example of corrosion assessment taking place.

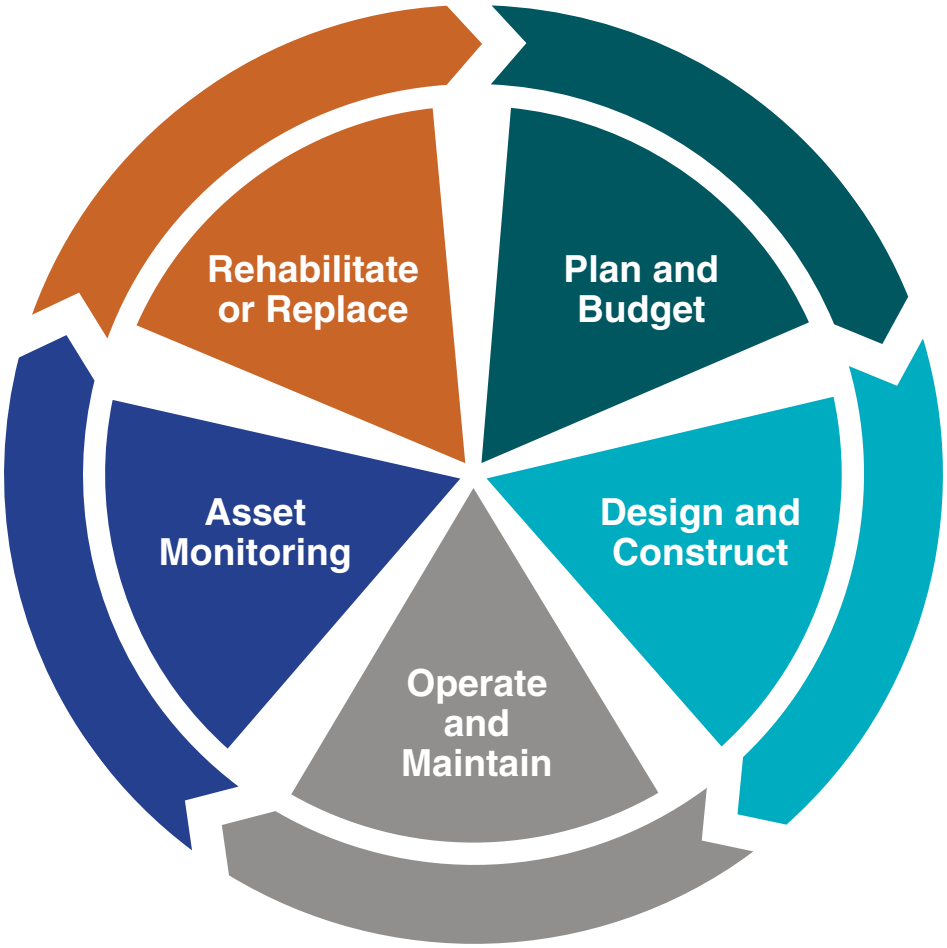
ASSET MANAGEMENT PLAN DEVELOPMENT

OCSD recently completed its 2017 Facilities Master Plan (FMP) which laid out a 20-year CIP that will allow OCSD to operate reliably while accommodating future growth, as well as meet future regulatory requirements, level of service goals and strategic initiatives. The 2017 FMP defined a CIP consisting of over 80 future infrastructure projects. Combining current active projects and these future infrastructure projects, OCSD is projecting to spend over $5 billion over the next 20 years on capital improvement projects. To fulfill the commitment of maintaining this program, an annual Asset Management Plan is in development. The annual Asset Management Plan will update, modify, and manage the FMP providing the roadmap to the CIP.

AWARD

The 2017 Facilities Master Plan received the American Academy of Environmental Engineers and Scientists 2019 Honor Award.

The first annual Asset Management Plan will be produced at the end of 2019 and completion of this study is planned for early 2020.



Construction crews installing sewer pipeline on State College Boulevard in Anaheim.

DESIGN **AND CONSTRUCTION**

OCSD celebrated its 65th anniversary this year, but that doesn't mean we get to retire. As we continuously prepare for the future, planned projects are beginning design and others are wrapping up construction. This section highlights a few active projects that the Engineering Department worked on during the 2018-19 fiscal year.

RECLAMATION PLANT NO. 1 — located in Fountain Valley

HEADWORKS REHABILITATION AT PLANT NO. 1 – $406,000,000

The headworks of a wastewater treatment plant is where all incoming sewers converge through a series of pipes, meters, flow diversions, and gates. The project will include the construction of new facilities, rehabilitation of existing facilities, and demolition of aging facilities, all while keeping the facility operational. Wastewater treatment at Plant No. 1 cannot be put on pause and Plant No. 2 cannot handle all the treatment of the wastewater generated by the 2.6 million people in OCSD's service area. Because of this, plant treatment processes must remain in service requiring the project to be meticulously and methodically designed and well-coordinated during construction.

Currently in design with construction anticipated to start in 2021 and be completed in 2028.

SLUDGE DEWATERING AND ODOR CONTROL – $199,500,000

This project constructed a new facility housing the technology of thickening and dewatering centrifuges to replace aging belt press filters to upgrade and expand solids handling. The high capacity centrifuges are among the largest in the world for wastewater treatment. The new facility performs the critical step of removing water from our biosolids to be transported for beneficial reuse as soil amendment.

This project received a grant of $1 million from the Department of Water Resources Proposition 84 administered through the Santa Ana Watershed Project Authority as part of the One Water One Watershed Plan.

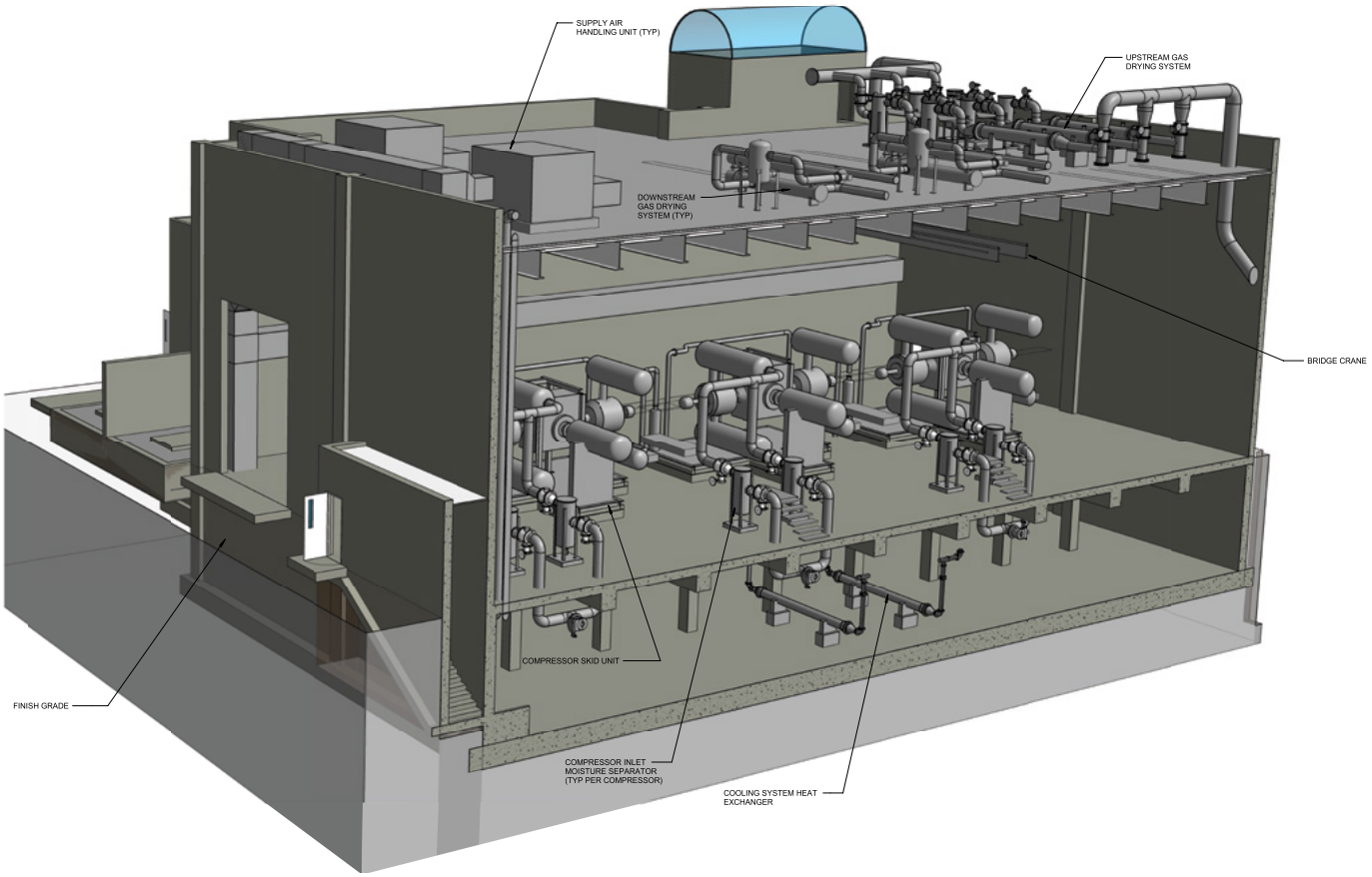
Construction began in 2013 and will be completed by end of 2019.

New thickening and dewatering centrifuges for the Sludge Dewatering and Odor Control Project at Plant No. 1.

PLANT NOS. 1 AND 2: DIGESTER GAS FACILITIES REHABILITATION – $156,500,000

OCSD recovers resources from the treatment process by capturing digester gas and converting it to power for the Central Generation facility at both plants. Each component of the digester gas facilities is being evaluated to determine if they need replacement or rehabilitation and where improvements can be incorporated to make the process as efficient as possible. Optimizing these facilities will meet future needs including recent regulatory changes.

Currently in the preliminary design phase for Plant Nos. 1 and 2.



3-D design model of a new digester gas compressor building at Plant No. 2.

INTERPLANT EFFLUENT PIPELINE REHABILITATION – $17,375,000

Plant No. 1 sends secondary effluent to Plant No. 2 through two 3.5-mile long interplant pipes measuring 84-inches and 120-inches in diameter. The rehabilitation of over 3,000 linear feet used glass fiber reinforced polymer in the 84-inch diameter interplant pipeline. This is the longest contiguous repair of this type of this size pipeline known to exist in the United States. For the 120-inch pipeline, over 1,600 weld repairs were made throughout the entire pipe length.

AWARD Orange County Engineering Council 2019 Project Achievement Award

Construction was completed early 2019.

Walk-through inspection of the 120-inch pipeline for the Interplant Effluent Pipeline Rehabilitation project.

HEADQUARTERS COMPLEX – $167,500,000

The new headquarters building will be located directly across the street from Plant No. 1. Once staff relocate to the new headquarters, existing buildings and trailers at Plant No. 1 will be demolished to provide space for the long-term future expansion of wastewater process in order to meet the growing needs of Orange County.

The building design will include energy efficiency and sustainable materials. Converted energy from the wastewater process will be reutilized to provide electricity and heating to the new building. Architectural design through building orientation, solar shading and exterior materials will reduce the overall heating and cooling requirements. Environmentally friendly sustainable wood substitutes that reduce global carbon emissions will also be used.

Construction is anticipated to begin in 2021 and be completed in 2023.

Project Budget Breakdown	
Land Acquisition	$18,500,000
Demolition	$3,500,000
Headquarters Complex	$99,100,000
Headquarters Building	$75,535,000
Site Development	$19,188,000
Pedestrian Bridge	$4,377,000
Non-Construction Costs	$33,000,000
Contract Contingencies	$5,700,000
General Contingency	$7,700,000
TOTAL	**$167,500,000**

Rendering — front lobby.

Rendering — front lobby and Board Room.

Rendering — Board Room.

Rendering — view of front entrance.

Rendering — view from Ellis Avenue.

TREATMENT PLANT NO. 2 — located in Huntington Beach

SLUDGE DEWATERING AND ODOR CONTROL AT PLANT NO. 2 – $90,477,000

Similar to the project at Plant No. 1, the sludge dewatering belt presses were replaced with a new centrifuge building to facilitate more efficient biosolids handlings. In addition to the upgraded facility, an odor control facility was added to the existing truck loading bays and old facilities demolished.

The dewatering centrifuges are now operational. With the new centrifuge facilities at both Plant Nos. 1 and 2 online, the total daily volume of biosolids has been reduced by 200 tons. The centrifuges are essentially wringing out an additional 200 tons of water per day that will no longer be hauled over 120-180 miles for reuse as soil amendment. This is reducing truck hauling by 30 percent which equates to about 3,500 fewer trucks per year.

Construction started in 2015 and will be completed in 2020.

Demolition of the old truck loading bays at Plant No. 2.

New dewatering centrifuges for the Sludge Dewatering and Odor Control Project at Plant No. 2.

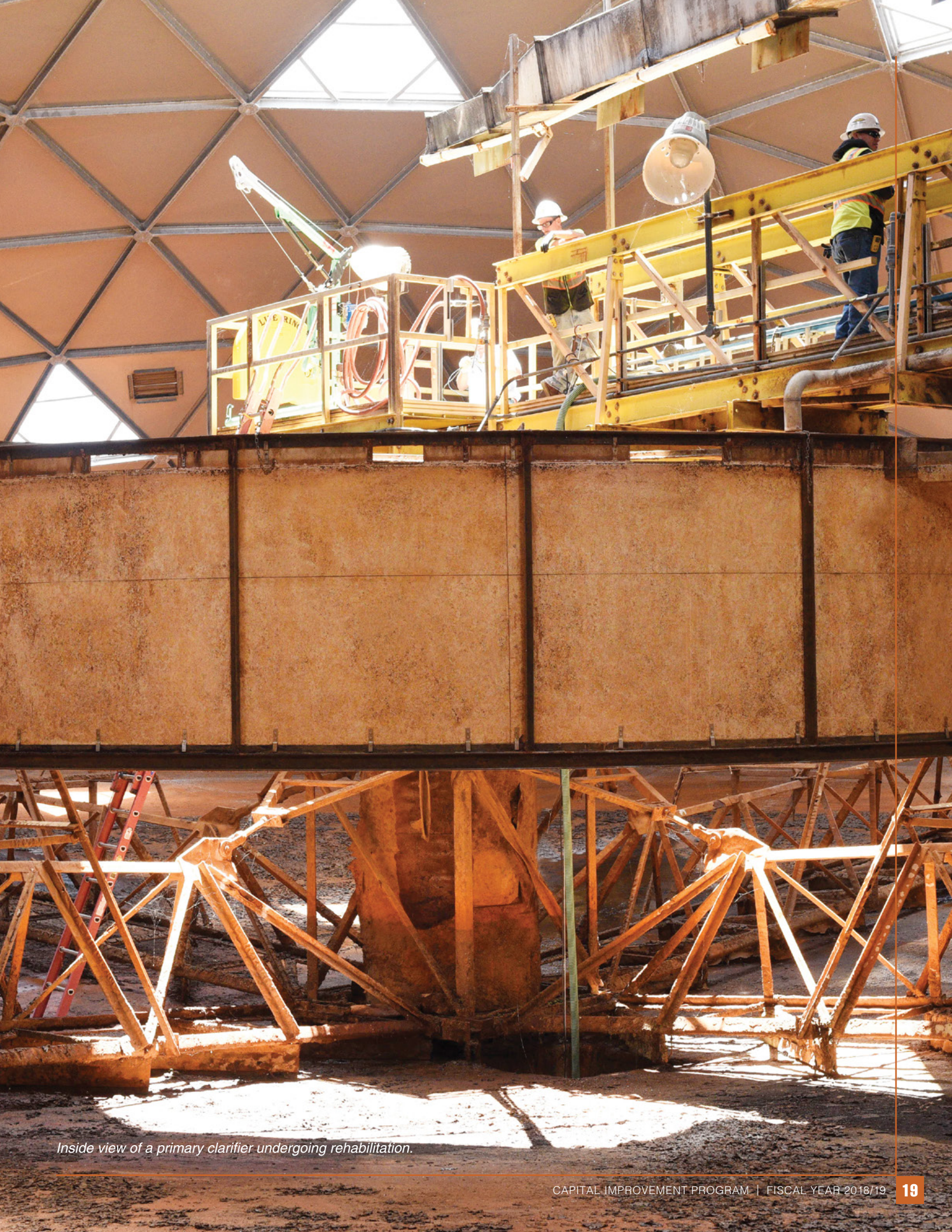
A-SIDE PRIMARY CLARIFIERS REPLACEMENT – $220,360,000

At Plant No. 2, there are 14 circular clarifiers, or settling basins, that allow the solids to be separated from the wastewater being treated. Collector arms move along the top and the bottom removing over 80% of the wastewater solids. The first set of clarifiers constructed in the 1960s are known as the “A-side” and subsequent construction is grouped by “B-side” and “C-side” clarifiers.

The A-side clarifiers are the oldest and near the end of their useful life. Four new clarifiers will be constructed, including a new sludge pump station, chemical scrubbers, power building, and piping. Once the replacement clarifiers have been constructed, the old clarifiers will be demolished.

Currently in design, construction is slated to begin in 2021 and completed in 2026.

Aerial view of Plant No. 2. The larger circular geodesic domes are the 14 Primary Clarifiers.



Inside view of a primary clarifier undergoing rehabilitation.

COLLECTION SYSTEM

An average of 185 million gallons of wastewater is treated at the two facilities in Fountain Valley and Huntington Beach. But how does the wastewater get there in the first place? By traveling through OCSD's collection system consisting of almost 400 miles of sewer pipeline and 15 pump stations.

The Capital Improvement Program makes sure these assets continue to collect wastewater so it can be properly treated and recycled, protecting public health and the environment. These are some of the active projects in the collection system.

NEWPORT BEACH/COSTA MESA DISTRICT 6 TRUNK SEWER RELIEF – $7,965,000

Newport Boulevard between Coast Highway and Industrial Way

The first OCSD project to feature a trenchless construction method called pipe bursting. The old pipe is broken apart with a bursting head tool. A new larger diameter pipeline attached to the bursting head tool is pulled in with a hydraulic cable replacing the old pipe in the same alignment. The project also made improvements to vehicle pullouts to allow for safer access to manholes for routine maintenance.

Construction began in 2017 and was completed in Spring 2019.

This project closes out the Newport Beach Program, a coordinated construction outreach effort that has impacted the City of Newport Beach community. Other projects included Dover Drive Trunk Sewer Relief, Balboa Trunk Sewer Rehabilitation, and Newport Force Main Rehabilitation.

SEAL BEACH/WESTMINSTER WESTMINSTER BLVD FORCE MAIN REPLACEMENT – $54,000,000

Westminster Boulevard between Seal Beach Boulevard and Springdale Street

Two force mains extend from the Seal Beach Pump Station for almost 3 miles. One force main was constructed in 1978, the second one in 1995. The aging force mains will be replaced with two new ones.

Currently in design, construction will begin in 2020 and completed in 2022.

The Westminster Blvd. Force Main Project will replace existing sewer pipelines that cross the Bolsa Chica Channel alongside the Bolsa Chica Bridge.

ANAHEIM
NEWHOPE-PLACENTIA TRUNK REPLACEMENT, PHASE B – $82,910,000

State College Boulevard between SR-91 freeway and Angel Stadium

AWARD American Society of Civil Engineers – Orange County 2018 Wastewater Treatment Project of the Year

This two-phased project replaces 7 miles of sewer pipe along State College Boulevard with a larger diameter pipeline to accommodate future peak wet weather flows. The project will add flexibility to the wastewater collections system routing wastewater to either facility, when wastewater was previously sent directly to only Plant No. 2. This will allow OCSD to recycle an additional 8 million gallons of wastewater by routing it to Plant No. 1 for treatment before being sent to the Groundwater Replenishment System, the world's largest water purification system for indirect potable reuse.

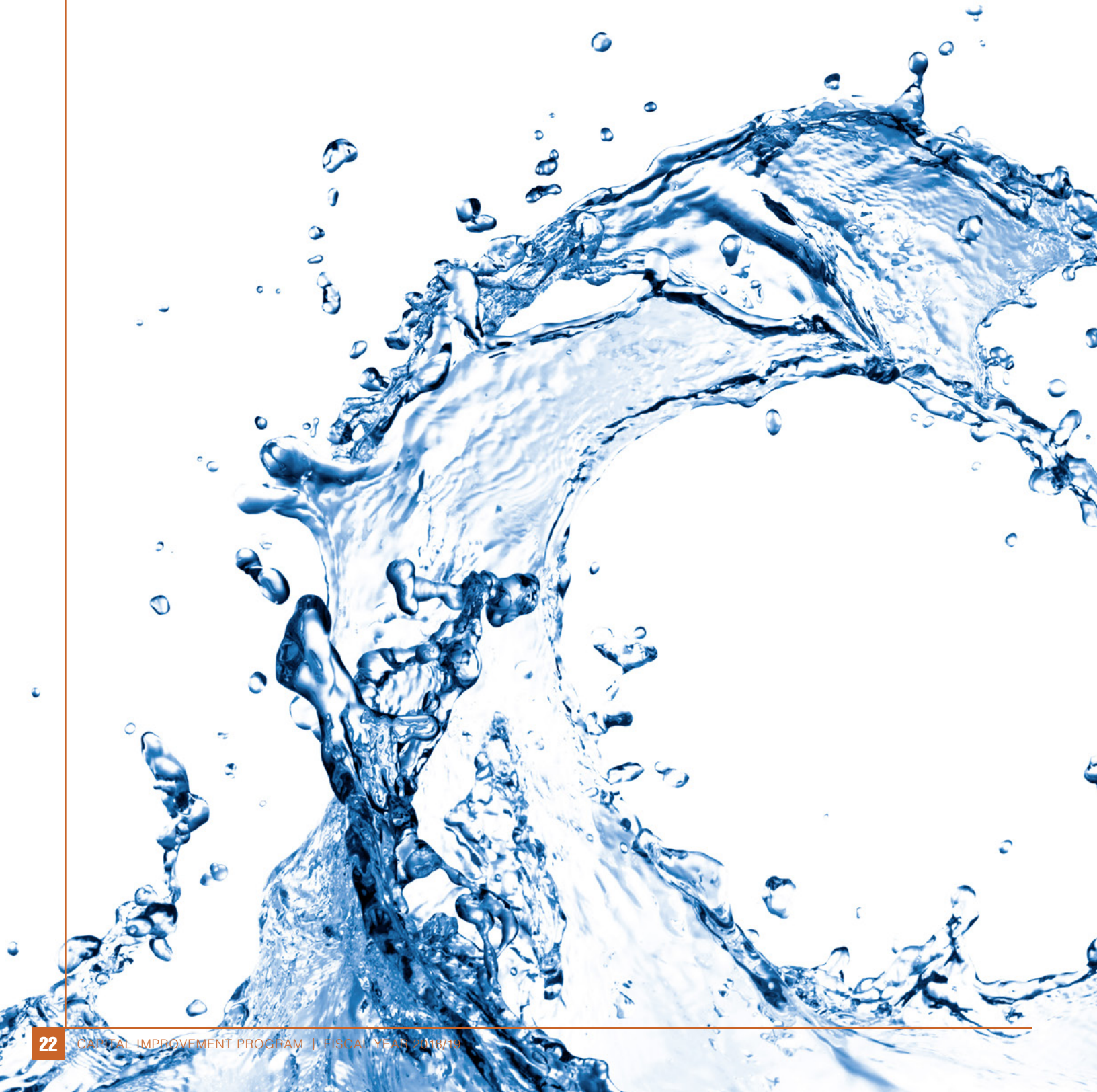
This project received a $1 million state grant provided by the Safe Drinking Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006.

Phase A in Fullerton installed 3 miles of pipeline and was completed Summer 2017.

Phase B construction started in Fall 2018 and scheduled to be completed in 2021.

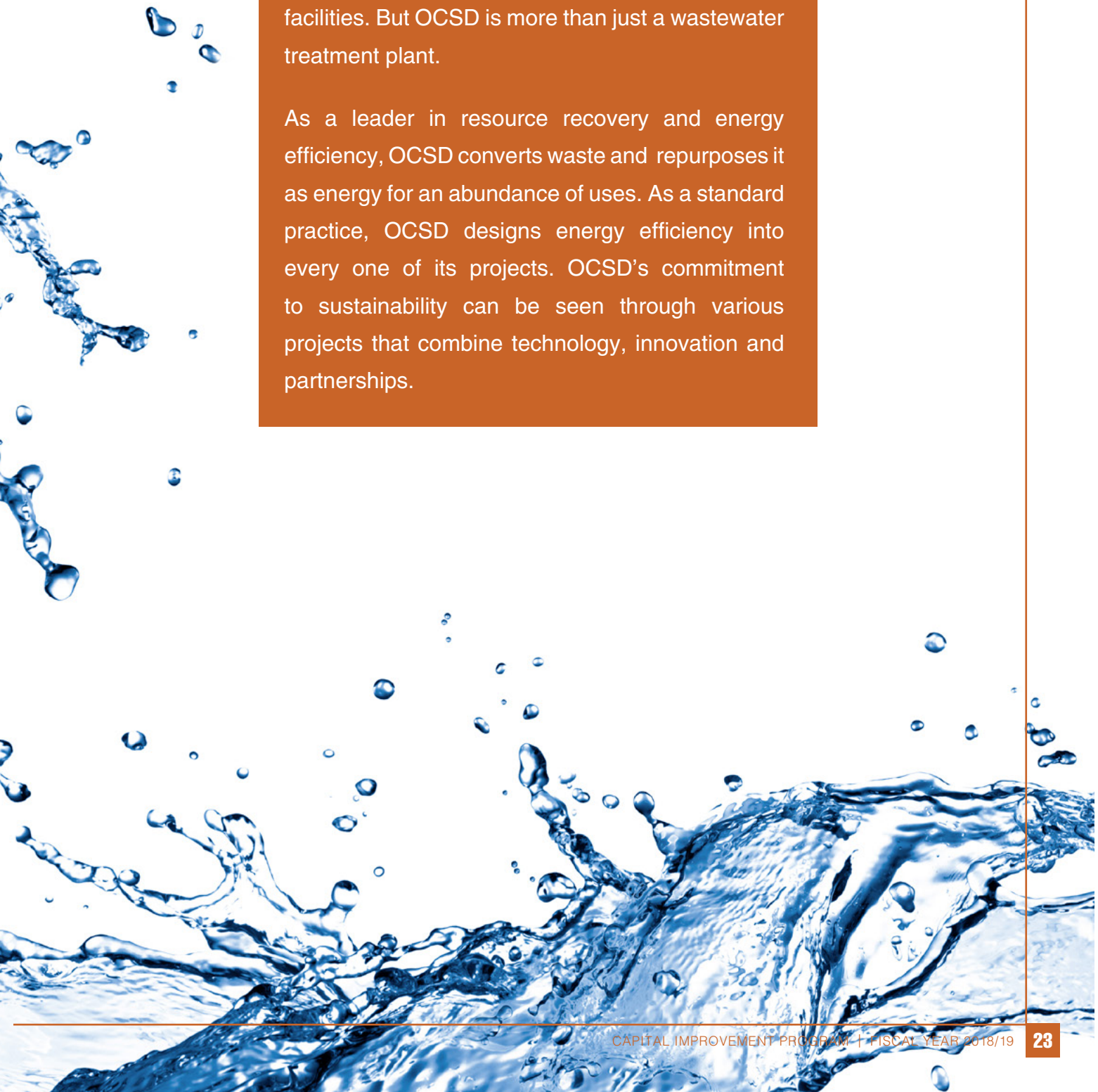
Construction crews thread a 54-inch diameter sewer pipeline between several existing utilities within a busy intersection along State College Boulevard in Anaheim.

BEYOND



Nearly 400 miles of sewer pipes convey wastewater to two operating facilities. An average of 185 million gallons a day of wastewater are treated at these facilities. But OCSD is more than just a wastewater treatment plant.

As a leader in resource recovery and energy efficiency, OCSD converts waste and repurposes it as energy for an abundance of uses. As a standard practice, OCSD designs energy efficiency into every one of its projects. OCSD's commitment to sustainability can be seen through various projects that combine technology, innovation and partnerships.



WASTEWATER

GWRS
GROUNDWATER REPLENISHMENT SYSTEM

The **Groundwater Replenishment System** (GWRS) is a water recycling project partnership between OCSD and the Orange County Water District (OCWD) providing a high-quality source of water to recharge the Orange County Groundwater Basin. Secondary effluent from Plant No. 1 is routed to GWRS.

Final expansion of the GWRS will utilize Plant No. 2 effluent. All reclaimable flow will need to be pumped to GWRS requiring modifications as well as construction of new facilities to provide separate treatment for flow streams that are not currently suitable as source water for GWRS.

Highly-purified recycled water facilities will expand from 100 million gallons per day to 130 million gallons per day after final expansion. 100 to 130 million gallons, enough water for 1.1 million people — that's beyond amazing!

There are several projects between OCSD and OCWD for the final expansion to be completed by 2023. Two of OCSD's projects are highlighted on the next page.

HEADWORKS MODIFICATIONS AT PLANT NO. 2

The existing Headworks facility at Plant No. 2 required improvements to be able to separate flows because not all effluent can be used as source water for GWRS. Modifications will allow flows to be separated between reclaimable and non-reclaimable.

Construction will commence in 2020 and will be completed by 2023.

OUTFALL LOW FLOW PUMP STATION

Currently, treated effluent at Plant No. 2 is pumped to the ocean through our 5-mile outfall pipeline. Normal outfall flow has decreased below the minimum outfall pump capacity due to water going to GWRS, requiring construction of a low flow pump station. A new plant water pump station is required to route reclaimable flows to GWRS in support of final expansion. Through innovation and collaborative thinking, the new plant water pump station component was added to the low flow pump station project to allow a more compact construction site, decrease construction risk, and be fiscally responsible for our ratepayers.

Construction is currently underway and will be completed by 2023.

BEYOND **WASTEWATER**

BATTERY STORAGE SYSTEM AT PLANT NO. 1

Repurposed methane gas from the digester facilities generate power to meet approximately 60 percent of OCSD's power requirements. A new Tesla energy storage system will allow OCSD to offset the remaining power demand, reducing the energy consumption on Southern California Edison's grid during critical times.

The 4.9-megawatt, 31-megawatt hour lithium-ion energy storage system is the largest customer-sited battery system in the United States, with a capacity equivalent to almost 550 Tesla vehicles. That's enough energy to supply over 1,600 houses for a day!

Construction will be completed Fall 2019.

New battery storage system at Plant No. 1.

INTERIM FOOD WASTE RECEIVING FACILITY AT PLANT NO. 2

Orange County cities are seeking options to dispose of organic material, or food waste, and diverting it from landfills to fulfill the State of California regulations to reduce greenhouse gas emissions. With OCSD's commitment to help protect the environment we serve a vital role to better serve the community. Waste haulers will be allowed to truck food waste to OCSD's Plant No. 2 digester facilities. Through anaerobic digestion, the food waste produces additional digester gas that can be repurposed to power OCSD, another step further towards energy self-sufficiency.

Future replacement of existing digester facilities will take place several years from now when the digesters meet the end of their useful life. In the meantime, to accommodate our cities' mandate to divert organics from landfills, a smaller interim food waste receiving facility will be constructed. The interim facility will provide an opportunity to further evaluate technologies, operational impacts, digester capacity, and gain valuable operational experience. A permanent station will take its place when digester facilities are replaced.

Construction will commence in 2020.


Orange County Sanitation District
ORANGE COUNTY SANITATION DISTRICT
PROTECTING THE ENVIRONMENT

COMMUNITY **OUTREACH PROGRAM**

One of OCSD's educational outreach messages is the What 2 Flush campaign, bringing awareness of what should go down the drain. The flushable 3 P's include pee, poop and paper. The Engineering Department's Capital Improvement Program has its own 3 P's: prepare, plan, and provide. This 3 P's philosophy also applies to the Community Outreach Program. The Community Liaisons prepare by looking at the Capital Improvement Program project schedules to strategically plan outreach approaches that are either project or program specific to successfully provide information to the community.

If construction work is going to take place in the surrounding areas of your home, business or through your commuting route, it would probably be helpful if you know: who, what, when, where, why, and how. The Community Outreach Program aims to put the public at ease by providing answers before those questions are even asked, reaching out to the community well in advance of construction activity, as early as the design phase of the project.

PLANT NO. 2 COMMUNITY OUTREACH PROGRAM

Residents in Huntington Beach, Costa Mesa, and Newport Beach surround OCSD's Plant No. 2. A comprehensive outreach program is being implemented for the Plant No. 2 neighbors to keep them informed and aware of several long-term construction activities planned to occur at the facility. Several projects serving different purposes will be in construction at the same time. A few outreach strategies for the fiscal year included three newsletters distributed to over 1,400 residents, six neighborhood tours, and one survey.

Plant No. 2 neighbors on a tour of the facility.

AWARD

Santa Ana River Basin Section of California Water Environment Association
2018-19 Community Engagement and Outreach Project of the Year – Small, 1st Place

California Water Environment Association
2018-19 Community Engagement and Outreach: Project of the Year – Small, 2nd Place

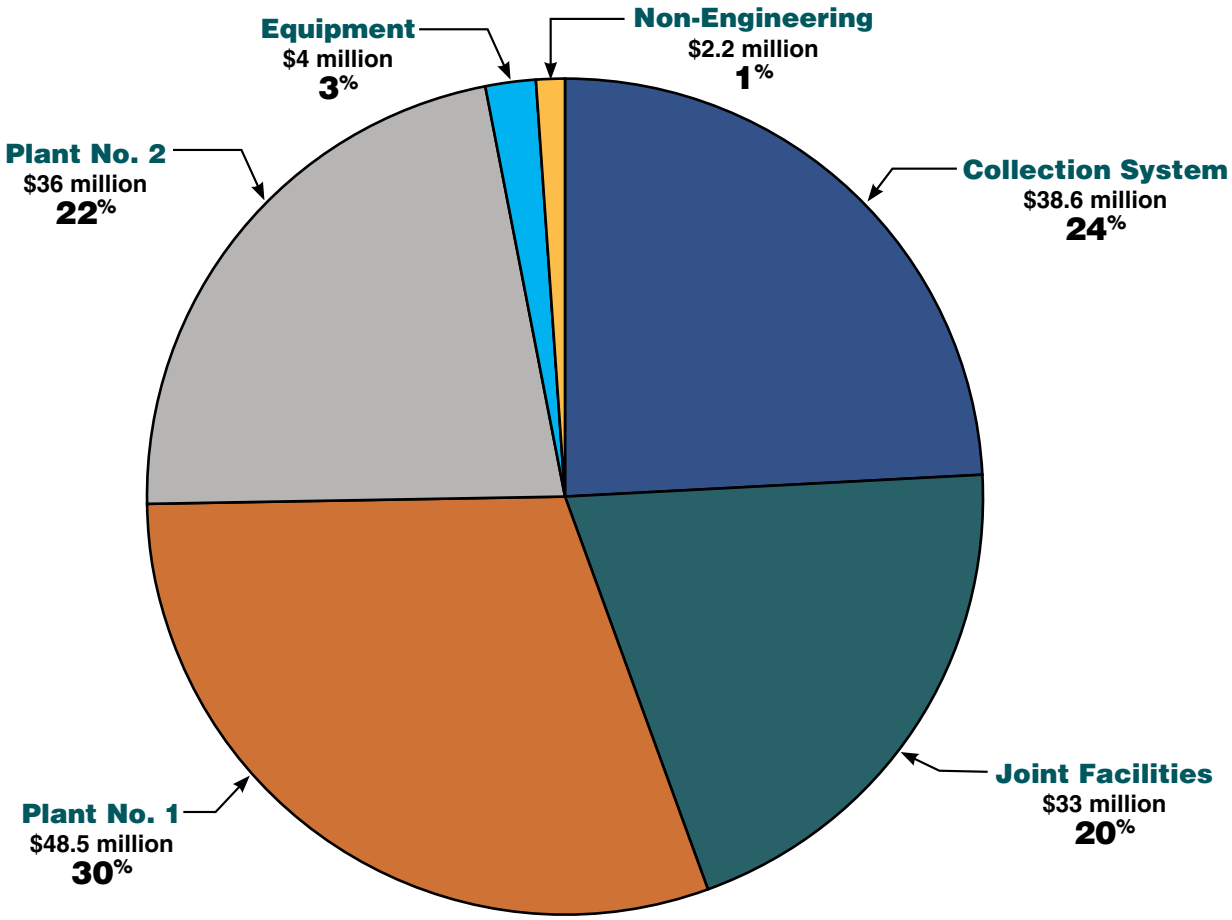
View of the new sludge dewatering facility at Plant No. 2.

FINANCIAL DATA **AND CONTRACT ACTIVITY**

Engineering staff have been busy with a mix of project efforts at Plant No. 1, Plant No. 2, Joint Facilities, and the Collection System. The chart below shows the breakdown of 2018-19 fiscal year's Capital Improvement Program project expenses, or expenditures. It also includes expenses from equipment and non-engineering projects by Information Technology and Operations and Maintenance.

Fiscal Year 2018-19 CIP Expenditures (Actuals)

Grand Total $162.3 Million

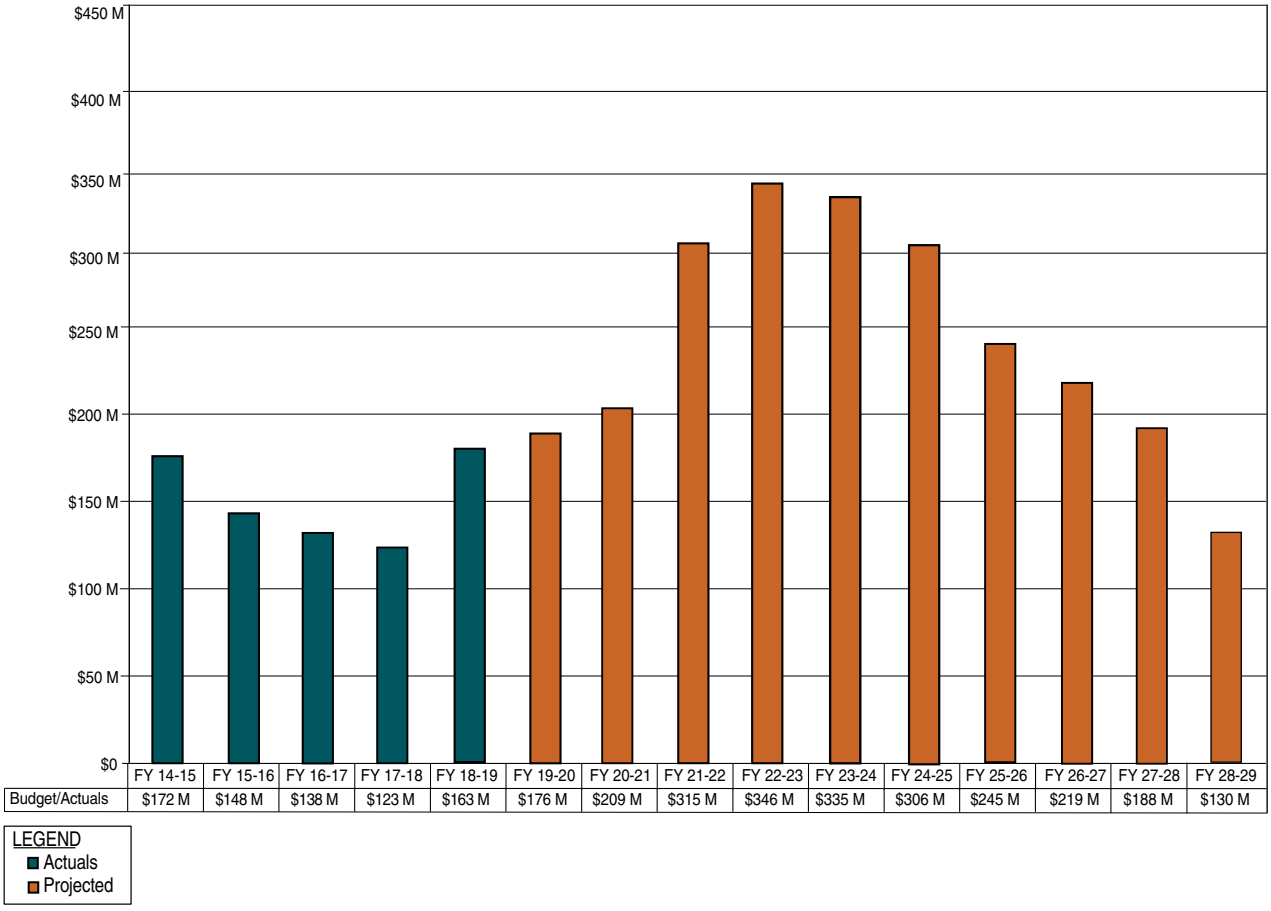


PROGRAM CASH FLOW

Over the next 10 years, OCSD's Capital Improvement Program will be making improvements to Plant No. 1, Plant No. 2 and the Collections System. Projects include rehabilitating the headworks, primary treatment, solids handling facilities, and utility systems at Plant No. 1, replacing a third of the primary treatment and solids dewatering facilities and rehabilitating the outfall pumping system at Plant No. 2, constructing a new Headquarters Complex, moving towards final expansion of the Groundwater Replenishment System, and replacing OCSD's aging pump stations and regional sewers in the Collection System.

The table below shows the actual expenditures for the past five years and the projected budget for the next ten years.

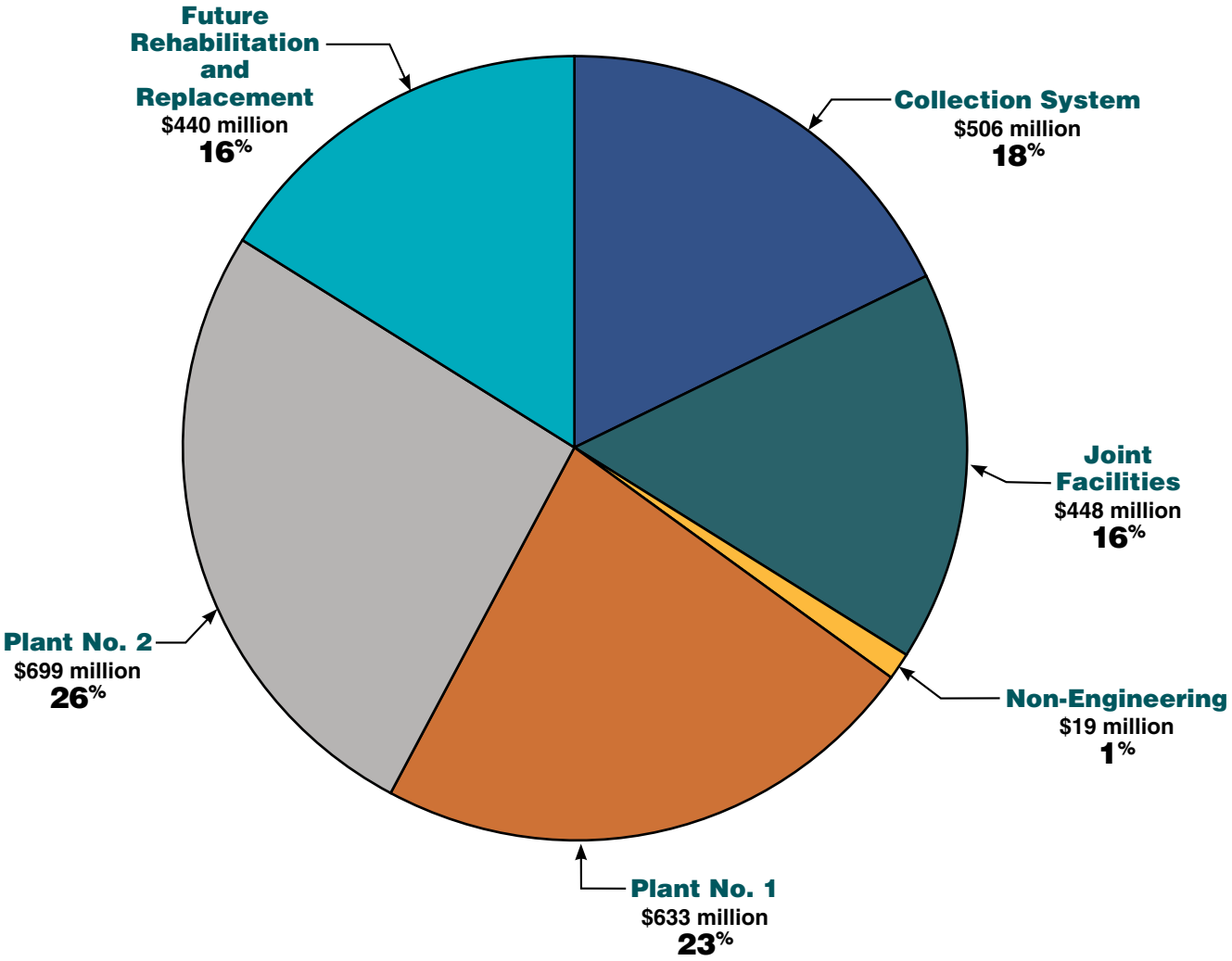
Annual Net CIP Outlay



	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27	FY 27-28	FY 28-29
Budget/Actuals	$172 M	$148 M	$138 M	$123 M	$163 M	$176 M	$209 M	$315 M	$346 M	$335 M	$306 M	$245 M	$219 M	$188 M	$130 M

This chart shows the 10-year budget for OCSD's Capital Improvement Program projects, including non-engineering projects by Information Technology and Operations and Maintenance. Projects that have not been fully scoped are represented as future rehabilitation and replacement.

TEN YEAR NET CIP OUTLAY
(Fiscal Year 2019-20 through Fiscal Year 2028-29)
NET CIP OUTLAY $2.7 BILLION



CONTRACT ACTIVITY

The Engineering Department and the Contracts Administration division work hand-in-hand with procurements of consultant designs and public works construction projects to award various contracts.

Their efforts are showcased below with a list of specific contract activity that occurred during the 2018-19 fiscal year.

PLANNING STUDIES CONTRACTS AWARDED					
Location(s)	**Project No.**	**Project Name**	**Consultant**	**Amount of Award**	**Date of Award**
Plant No. 2	PS17-03	Active Fault Location Study at Plant No. 2	Lettis Consultants International, Inc.	$868,286	March 2019
Plant Nos. 1 and 2, OCSD Service Area	PS17-08	CEQA - Facilities Master Plan	Dudek	$812,709	February 2019
Plant No. 2, OCSD Service Area	PS17-10	Emergency Overflow Weirs, Wing Wall Structural and Geotechnical Investigations	HDR Engineering, Inc.	$260,415	May 2019
Plant Nos. 1 and 2, OCSD Service Area	PS18-01	Asset Management Plan Development	HDR Engineering, Inc.	$274,777	April 2019
Plant No. 2	PS18-05	Plant No. 2 Future Site Plan Development	Brown and Caldwell	$122,389	May 2019
Plant No. 2	PS18-10	Root Cause Analysis of Malfunctioning Process Units at TFSC Facility at Plant No. 2	Brown and Caldwell	$24,783	February 2019

DESIGN CONTRACTS AWARDED					
Location(s)	**Project No.**	**Project Name**	**Consultant**	**Amount of Award**	**Date of Award**
Plant No. 2	P2-124	Interim Food Waste Receiving Facility	Kennedy/Jenks Consultants	$695,000	September 2018
Plant Nos. 1 and 2	J-127	Natural Gas Pipelines replacement at Plant Nos. 1 and 2	Black & Veatch Corporation	$271,964	January 2019

This is an inside view of the jack and bore tunnel directly below the intersection of State College Boulevard and Ball Road in Anaheim.

CONSTRUCTION CONTRACTS AWARDED					
Location(s)	**Project No.**	**Project Name**	**Consultant**	**Amount of Award**	**Date of Award**
Yorba Linda	2-41-8	SARI Rock Stabilizers Removal	Griffith Company	$2,809,082	September 2018
Plant No. 1	FE14-05	Plant No. 1 Fleet Services UST Leak Remediation	Engineering/ Remediation Resources Group, Inc.	$648,675	January 2019
Huntington Beach	FE16-14	Slater Pump Station Valve Replacements	PCL CONSTRUCTION, INC.	$459,674	August 2018
Plant No. 1	FE17-05	Plant No. 1 ICS Network Extension	RP Controls	$321,889	June 2019
Plant No. 2	J-117B	Outfall Low Flow Pump Station	Shimmick Construction Co., Inc.	$90,200,000	December 2018
Plant Nos. 1 and 2, OCSD Service Area	J-126C	NFPA 820 HVAC and Electrical Improvements	MMC, Inc.	$469,000	March 2019
Plant Nos. 1 and 2, OCSD Service Area	J-126I	Exit Signs Exit Lights Electrical Disconnects Gas Detection	Helix Electric	$881,800	September 2018
Plant Nos. 1 and 2, OCSD Service Area	J-126JK	Stairs, Hatches, Walkway Hazards, Ladders, Guardrails, Roof Fall Protection	Olsson Construction, Inc.	$3,637,601	October 2018
Plant Nos. 1 and 2, OCSD Service Area	J-126PQ	Ladders, Hatches, Roof Fall Protection	Tharsos, Inc.	$786,000	November 2018
Plant No. 2	P2-98B	B/C-Side Primary Clarifiers Interim Repair at Plant No. 2	Myers & Sons Construction, LLC	$8,665,000	January 2019

CONSTRUCTION CONTRACTS COMPLETED					
Location(s)	**Project No.**	**Project Name**	**Contractor**	**Amount of Contract**	**Date of Completion**
Newport Beach	6-17	District 6 Trunk Sewer Relief	Charles King Company, Inc.	$3,699,301	June 2019
Plant No. 2	FE14-03	Rehabilitation of Digester Mixing Pumps at P2 Digesters E, H, R, S, and T	Tharsos, Inc.	$594,000	July 2018
Plant No. 1	FE15-09	CenGen Hot Water Pipe Bracing at Plant No. 1	Filanc	$94,784	October 2018
Plant No. 2	FE16-05	Buried Water Valve Support Upgrades at Plant No. 2	AMPCO Contracting	$139,000	July 2018
Plant No. 1	FE16-10	East Basin Distribution Box Repair	Howard Ridley Co. Inc.	$529,350	March 2019
Huntington Beach	FE16-14	Slater Pump Station Valve Replacements	PCL CONSTRUCTION, INC.	$459,674	April 2019
Plant Nos. 1 and 2, OCSD Service Area	J-126AH	Hot Surfaces insulation P1/P2/Bay Bridge PS/Slater PS	AMTEK Construction	$452,757	July 2018
Plant Nos. 1 and 2, OCSD Service Area	J-126BFG	Lights, Ladder and Walkway Hazards	AMTEK Construction	$557,759	October 2018
Plant Nos. 1 and 2, OCSD Service Area	J-126E	Roof Fall Protection and Skylights	Access Pacific	$418,000	October 2018
Plant No. 2	P2-118	Activated Sludge Aeration Basin Deck Repair at Plant No. 2	Abhe & Svoboda, Inc.	$906,975	July 2018

ENGINEERING CIP PROJECTS

The following lists are projects that were active during the 2018-19 fiscal year.

PLANNING STUDIES				
Location(s)	**Project Number**	**Project Name**	**Phase**	**Project Budget**
Huntington Beach	PS15-02	Edinger Pump Station Rehabilitation Study	Study Execution	$971,000
Plant Nos. 1 and 2	PS15-06	Seismic Evaluation of Structures at Plant Nos. 1 and 2	Study Execution	$3,860,000
OCSD Service Area	PS15-08	Collections Capacity Evaluation Study	Study Execution	$3,682,000
Plant Nos. 1 and 2, OCSD Service Area	PS15-10	2017 Facilities Master Plan	Close Out	$3,850,000
Plant Nos. 1 and 2, OCSD Service Area	PS16-01	Stormwater Master Plan	Study Execution	$1,415,700
Plant No. 2	PS16-02	SCE Feed Reliability Improvements Study	Study Execution	$293,000
OCSD Service Area	PS17-02	Guidelines for Development in the Area of OCSD Facilities	Close Out	$176,000
Plant No. 2	PS17-03	Active Fault Location Study at Plant No. 2	Study Execution	$1,300,000
Plant Nos. 1 and 2	PS17-04	Office Workspace Study for Plant No 1 and 2	Close Out	$110,000
Plant Nos. 1 and 2, OCSD Service Area	PS17-08	CEQA - Facilities Master Plan	Study Execution	$1,170,000
Plant No. 2	PS17-10	Emergency Overflow Weirs, Wing Wall Structural and Geotechnical Investigations	Study Execution	$465,000
Plant Nos. 1 and 2, OCSD Service Area	PS18-01	Asset Management Plan Development	Study Execution	$420,000
Fountain Valley	PS18-02	Bushard Diversion Structure Rehabilitation Study	Study Execution	$96,000
Plant No. 2	PS18-05	Plant No. 2 Future Site Plan Development	Study Execution	$217,000
Plant Nos. 1 and 2, OCSD Service Area	PS18-06	Go/No-Go Lights and Signage	Study Execution	$495,000
Plant Nos. 1 and 2, OCSD Service Area	PS18-07	ASCE Review of CIP Program	Close Out	$50,000
Plant No. 2	PS18-09	Ocean Outfall Condition Assessment and Scoping Study	Study Execution	$1,850,000
Plant No. 2	PS18-10	Root Cause Analysis of Malfunctioning Process Units at TFSC Facility at Plant No. 2	Close Out	$41,000
Plant Nos. 1 and 2	PS18-11	ETAP Model Updates for Plant Nos 1 and 2	Study Execution	$553,000
Plant Nos. 1 and 2, OCSD Service Area	RE17-01	Operational Research Technical Support FY18-19	Study Execution	$650,000
Plant Nos. 1 and 2	RE17-02	Biogas Scrubber Evaluation	Study Execution	$865,000
Newport Beach	RE17-03	Reliant Wet Well Wizard Test	Close Out	$74,000
Plant Nos. 1 and 2	RE17-04	AquaNereda Aerobic Granular Sludge Process	Study Execution	$242,000
Seal Beach	RE17-07	Super Oxygenation System Research at Seal Beach Pump Station	Study Execution	$80,000
Plant No. 1	RE18-01	Trickling Filter Bleach Test at Plant No. 1	Study Execution	$125,000
Plant Nos. 1 and 2, OCSD Service Area	SP-152	Climate Resiliency Study	Study Execution	$878,000
Plant Nos. 1 and 2, OCSD Service Area	SP-195	Capital Improvement Program Management Services	Study Execution	$700,000
Plant Nos. 1 and 2, OCSD Service Areaa	SP-196	Process Control Systems Upgrades Study	Study Execution	$3,554,000

Inside the jack and bore pit on the Newhope-Placentia Trunk Replacement, Phase B project on State College Boulevard in Anaheim.

Deep soil mixing ng for the Outfall Low Flow Pump Station Project at Plant No. 2.

COLLECTION SYSTEM PROJECTS				
Location(s)	**Project Number**	**Project Name**	**Phase**	**Project Budget**
Yorba Linda	2-41-8	SARI Rock Stabilizers Removal	Construction	$6,860,000
Fullerton	2-65	Newhope - Placentia Trunk Grade Separation Replacement	Close Out	$4,300,000
Fullerton, Anaheim	2-72	Newhope - Placentia Trunk Replacement	Construction	$112,000,000
Seal Beach, Westminster	3-62	Westminster Blvd Force Main Replacement	Design	$54,000,000
Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, County of Orange	3-64	Rehabilitation of Western Regional Sewers	Design	$202,000,000
Fountain Valley	3-66	Interstate 405 Widening Project Impacts on OCSD Sewers	Construction	$528,000
Seal Beach	3-67	Seal Beach Pump Station Replacement	Project Development	$78,900,000
Newport Beach	5-67	Bay Bridge Pump Station Replacement	Preliminary Design	$64,000,000
Newport Beach	5-68	Newport Beach Pump Station Pressurization Improvements	Project Development	$4,066,000
Costa Mesa, Newport Beach	6-17	District 6 Trunk Sewer Relief	Close Out	$7,965,000
Tustin, Irvine, Santa Ana	7-37	Gisler - Red Hill Trunk Improvements - Reach B	Close Out	$25,213,000
Irvine, Santa Ana	7-66	Sunflower and Red Hill Interceptor Repairs	Project Development	$5,500,000

JOINT FACILITIES PROJECTS				
Location(s)	**Project Number**	**Project Name**	**Phase**	**Project Budget**
Plant Nos. 1 and 2	J-117	Ocean Outfall System Rehabilitation	Construction	$166,000,000
Plant Nos. 1 and 2	J-124	Digester Gas Facilities Rehabilitation	Preliminary Design	$156,500,000
Plant Nos. 1 and 2, OCSD Service Area	J-126	Safety Improvements Program	Design	$19,000,000
Plant Nos. 1 and 2	J-127	Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	Design	$1,310,000
Plant Nos. 1 and 2, OCSD Service Area	J-128	Project Management Information System	Construction	$4,000,000
Fountain Valley	J-131	18350 Mt. Langley St. Building Purchase and Improvement	Construction	$10,200,000
Plant Nos. 1 and 2	J-36-2	GWRS Final Expansion Coordination	Design	$1,132,000
Plant Nos. 1 & 2	J-98	Electrical Power Distribution System Improvements	Project Development	$30,000,000

RECLAMATION PLANT NO. 1				
Location(s)	**Project Number**	**Project Name**	**Phase**	**Project Budget**
Plant No. 1	P1-100	Digester Rehabilitation at Plant No. 1	Completed	$66,000,000
Plant No. 1	P1-101	Sludge Dewatering and Odor Control at Plant No. 1	Construction	$199,500,000
Plant No. 1	P1-105	Headworks Rehabilitation at Plant No. 1	Design	$406,000,000
Plant No. 1	P1-115	Title 24 Access Compliance and Building Rehabilitation Project	Construction	$18,400,000
Plant No. 1	P1-123	Trunk Line Odor Control Improvements	Close Out	$9,299,000
Plant No. 1	P1-128	Headquarters Complex	Preliminary Design	$167,500,000
Plant No. 1	P1-129	Return Activated Sludge Piping Replacement at Activated Sludge Plant No. 1	Design	$9,000,000
Plant No. 1	P1-132	Uninterruptable Power Supply Improvements at Plant No. 1	Project Development	$7,000,000
Plant No. 1	P1-133	Primary Sedimentation Basins No. 6-31 Reliability Improvements at Plant No. 1	Project Development	$12,000,000
Plant No. 1	P1-134	South Perimeter Security and Utility Improvements at Plant No.1	Project Development	$10,500,000

TREATMENT PLANT NO. 2				
Location(s)	**Project Number**	**Project Name**	**Phase**	**Project Budget**
Plant No. 2	P2-107	SCADA System and Network Upgrades	Close Out	$5,000,000
Plant No. 2	P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	Construction	$31,000,000
Plant No. 2	P2-118	Activated Sludge Aeration Basin Deck Repair at Plant No. 2	Close Out	$1,800,000
Plant No. 2	P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Design	$54,000,000
Plant No. 2	P2-123	Return Activated Sludge Piping Replacement at Plant No. 2	Design	$20,000,000
Plant No. 2	P2-124	Interim Food Waste Receiving Facility	Preliminary Design	$6,300,000
Plant No. 2	P2-125	Perimeter Screening at Plant No. 2	Project Development	$2,800,000
Plant No. 2	P2-128	TPAD Digester Facility at Plant No. 2	Project Development	$405,100,000
Plant No. 2	P2-91-1	Plant No. 2 Digester Facilities Rehabilitation	Project Development	$15,500,000
Plant No. 2	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Construction	$90,477,000
Plant No. 2	P2-98	Primary Treatment Rehabilitation at Plant No. 2	Design	$245,000,000

SMALL CONSTRUCTION PROJECTS				
Location(s)	**Project Number**	**Project Name**	**Phase**	**Project Budget**
Brea, Fullerton	FE10-21	Area 02 Craig Regional Park Manhole Improvements	Design	$1,359,000
Plant No. 2	FE14-03	Rehabilitation of Digester Mixing Pumps at P2 Digesters E, H, R, S, and T	Close Out	$1,360,000
Plant No. 1	FE14-05	Plant No. 1 Fleet Services UST Leak Remediation	Construction	$1,487,311
Plant No. 1	FE15-07	Secondary Treatment and Plant Water VFD Replacement at Plant No. 1	Construction	$3,319,600
Plant No. 1	FE15-09	CenGen Hot Water Pipe Bracing at Plant No. 1	Close Out	$425,000
Newport Beach	FE15-10	East Lido Force Main Rehabilitation	Close Out	$2,228,000
Plant No. 2	FE16-05	Buried Water Valve Support Upgrades at Plant No. 2	Close Out	$250,000
Plant No. 1	FE16-06	Fuel Cell Facilities Demolition	Design	$900,000
Plant No. 1	FE16-10	East Basin Distribution Box Repair	Close Out	$1,021,960
Irvine	FE16-11	Lane Channel Crossing	Construction	$500,000
Huntington Beach	FE16-14	Slater Pump Station Valve Replacements	Close Out	4459,674
Brea	FE17-01	Carbon Canyon Pipeline Sag Repairs	Design	$783,000
Plant No. 1	FE17-03	Battery Storage System at Plant No. 1	Construction	$571,000
Plant No. 1	FE17-05	Plant No. 1 ICS Network Extension	Design	$950,000
Anaheim, Placentia	FE17-06	Tustin Ave Manhole and Pipe Repair	Design	$273,000
Newport Beach	FE17-08	Big Canyon Trunk Sewer Realignment – Big Canyon Country Club Maintenance Yard	Close Out	$130,000
Fountain Valley	FE18-01	Interim Relocation to 18350 Mt. Langley	Close Out	$665,000
Plant No. 2	FE18-04	Activated Sludge Basin Lighting Repair at Plant No. 2	Close Out	$1,600,000
Plant Nos. 1 & 2	FE18-06	CenGen Instrument Air Compressors Replacement at Plant No. 1 and No. 2	Close Out	$1,450,000
Santa Ana	FE18-08	West Trunk Bypass Sewer Realignment	Design	$98,000
Fountain Valley	FE18-10	Mt Langley HVAC Replacement and Upgrades	Construction	$560,000
Plant Nos. 1 & 2	FE18-11	Headworks Explosive Gas Monitoring Systems at Plant No. 1 and No. 2	Design	$335,000
Huntington Beach	FE18-12	Erosion Control at Santa Ana River and Hamilton Ave	Design	$245,000
Santa Ana	FE18-13	Redhill Relief Sewer Protection at State Route 55	Design	$520,000
Plant No. 2	FE18-14	Plant Water Pipeline Replacement in Kinnison, Lindstrom, and Scott Tunnels at Plant No. 2	Project Development	$1,425,000
Plant No. 2	FE18-15	Plant Boiler System Relief at Plant No. 2	Project Development	$180,000
Plant No. 1	FE18-16	Truck Loading Basement Drain Modifications at Plant No. 1	Design	$440,000
Newport Beach	FE18-18	Portable Generator Connector at Lido Pump Station	Design	$106,000
Plant No. 1	FE18-19	12KV Distribution B and East RAS Pump Station Roofing Replacement	Project Development	$600,000
Plant No. 1	FE18-20	Blower Building No. 1 Air Compressors at Plant No. 1	Project Development	$1,200,000

BOARD OF DIRECTORS

Cities	Active Director	Alternate Director
Anaheim	Lucille Kring	Denise Barnes
Brea	Glenn Parker	Steven Vargas
Buena Park	Fred Smith	Sunny Park
Cypress	Mariellen Yarc	Stacy Berry
Fountain Valley	Steve Nagel	Patrick Harper
Fullerton	Jesus J. Silva	Jan Flory
Garden Grove	Steve Jones	John O'Neill
Huntington Beach	Erik Peterson	Mike Posey
Irvine	Christina Shea	Anthony Kuo
La Habra	Tim Shaw	Tom Beamish
La Palma	Peter Kim	Marshall Goodman
Los Alamitos	Richard Murphy	Dean Grose
Newport Beach	Brad Avery	Joy Brenner
Orange	Mark Murphy	Kim Nichols
Placentia	Chad Wanke	Ward Smith
Santa Ana	Cecilia Iglesias	David Penaloza
Seal Beach	Sandra Massa-Lavitt	Schelly Sustarsic
Stanton	David Shawver	Carol Warren
Tustin	Allan Bernstein	Chuck Puckett
Villa Park	Robert Collacott	Chad Zimmerman
Agencies		
Costa Mesa Sanitary District (CMSD)	James Ferryman	Robert Ooten
Midway City Sanitary District (MCSD)	Andrew Nguyen	Al Krippner
Irvine Ranch Water District (IRWD)	John Withers	Douglas Reinhart
Yorba Linda Water District (YLWD)	Phil Hawkins	Brooke Jones
County Areas		
Member of the Board of Supervisors	Doug Chaffee	Michelle Steel

Ribbon cutting event for the new centrifuge facility for the Sludge Dewatering and Odor Control project at Plant No. 1.

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
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09/2019