Orange County Sanitation District

Building for the Future

CAPITAL IMPROVEMENT PROGRAM

FISCAL YEAR 2016/17

from the director of engineering

Every day, the Orange County Sanitation District's (OCSD) Engineering Department is focused on the future of the agency. Our goal is to make sure OCSD is prepared and equipped for future operations while maintaining our expected levels of service. This past year, we completed a Facilities Master Plan to assure OCSD's capability to meet regulatory requirements, future capacity demands, level of service goals, and to meet our Board of Director's policies for enhanced resource recovery and energy independence.

With the use of clever engineering, we were able to lay out a 20-year Capital Improvement Program (CIP) that coordinates and optimizes the refurbishment and replacement of our collection system and treatment assets. The master plan balances the on-going treatment capacity needs, available staffing to deliver projects, and our inflation adjusted current cash flow to provide world class asset management.

The recent completion of several studies on odor, biosolids, and water reuse provided a strong foundation for our master planning efforts. Our facilities are being designed to not only treat the water coming in, but to recover the valuable resources in that water. We are building resiliency by focusing on resource recovery, creating energy independence, and being fiscally responsible, which in turn helps us build a sustainable model for the future.

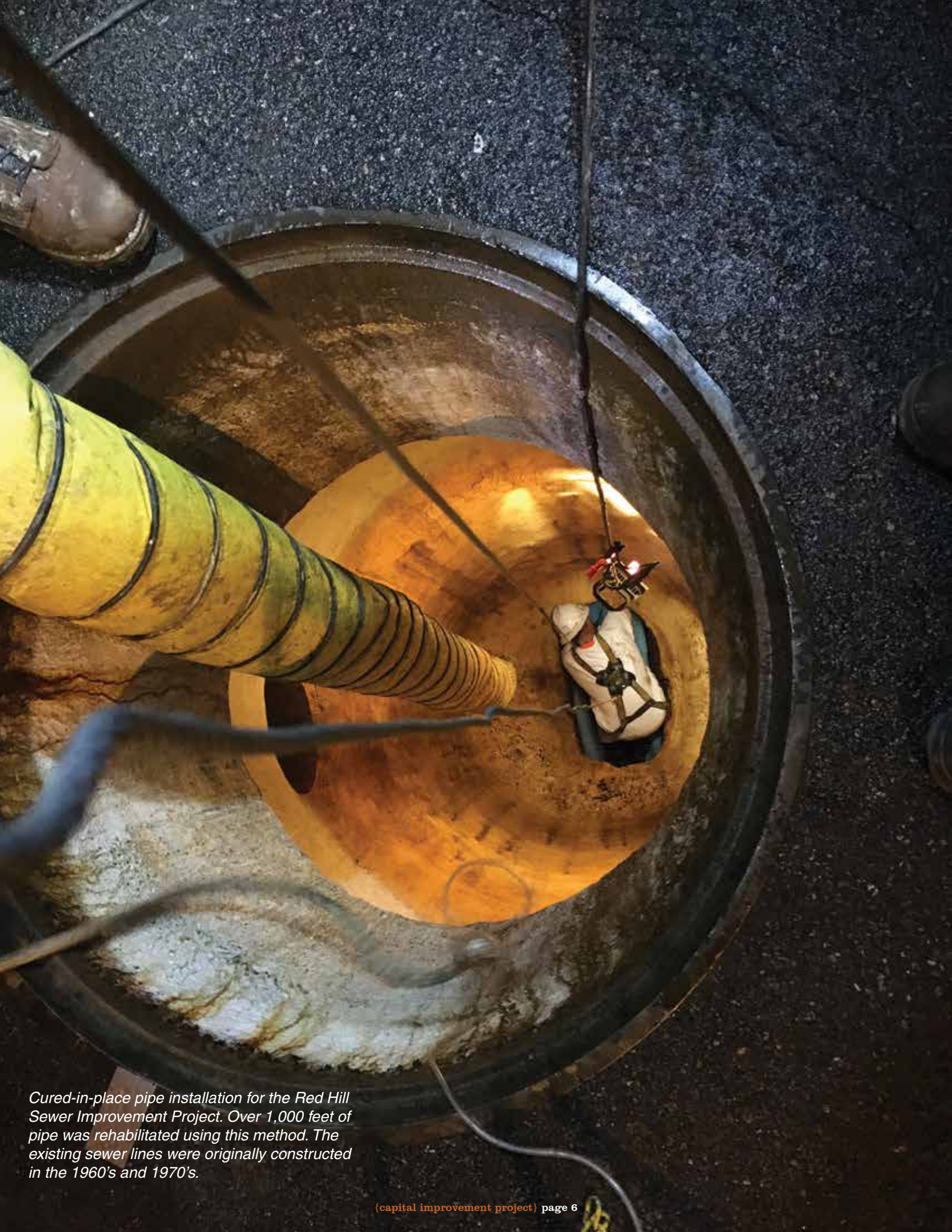
With this clear plan in place, I am confident OCSD will be able to deliver its vital services to the public we serve at the lowest possible cost.

On behalf of the Engineering Department, I would like to extend our gratitude to the Board of Directors and our rate payers for their continued support.

Rob Thompson, P.E.
Director of Engineering

Sewer pipe installation for Phase A of the Newhope Sewer Replacement Project in Fullerton and Anaheim. Over two miles of pipe was installed as part of this phase.

table of contents



Cured-in-place pipe installation for the Red Hill Sewer Improvement Project. Over 1,000 feet of pipe was rehabilitated using this method. The existing sewer lines were originally constructed in the 1960's and 1970's.

introduction and background

Agency Information

The Orange County Sanitation District is a public agency that provides wastewater collection, treatment, and recycling for 2.6 million people in central and northern Orange County. We have two operating facilities that treat wastewater from residential, commercial, and industrial sources. The wastewater from these communities is conveyed through 396 miles of regional sewer and 15 pump stations to either the reclamation plant in Fountain Valley or the treatment plant in Huntington Beach where it is treated and sent for water recycling or released into the Pacific Ocean.

Over the years, we have evolved from a wastewater treatment facility to a resource recovery facility that treats wastewater as the resource that it is, not a waste. We convert wastewater into clean water, energy, and soil amendments.

Capital Improvement Program Overview

The Capital Improvement Program (CIP) is our blueprint for addressing the future demands and needs of the agency. Our newly updated CIP details the planned projects that will maintain, enhance, and adapt our facilities into the future.

The program was put together by first identifying the issues that need to be addressed. The issues range from condition assessments of our current assets, current and anticipated regulations, capacity, resiliency, health and safety, and overall OCSD resource recovery initiatives. A project list was developed for each collection system drainage basin and pump station, as well as for each in-plant process area that included project descriptions, project elements, and cost. Once the complete list was created, the projects were prioritized to develop a timeline and budget for execution. The comprehensive effort resulted in the Capital Improvement Program Master Plan which will be carried out over the next 20 years.

We program to invest over $2 billion in capital in the next 10 years. This includes 80 projects that stretch from research and planning all the way through construction and commissioning. These projects will allow OCSD to continue providing a reliable and necessary service to our rate payers at the lowest life cycle cost.

The CIP is a large endeavor that requires the participation and support from staff throughout the agency. There are over 100 members of the Engineering Department whose job, day in and day out, is to support the CIP. However, additional resources are needed to carry out the complex projects that are planned, designed, and constructed. We utilize on-call staff from local firms to supplement our Engineering staff on an as-needed basis. This allows us the flexibility of soliciting a specific skill set for a predetermined amount of time, and the ability to swiftly adjust staffing to meet shifting needs. We currently have approximately 20 supplemental staff members working at our facilities. The culture of ownership and dedication carried out by our talented team is passed on to our supplemental staff, allowing us to manage and implement the projects effectively and efficiently.

For additional information regarding the Capital Improvement Program, please visit our website at **www.ocsd.com/construction** or by contacting our **Construction Hotline at 714-378-2965** or via email at **constructionhotline@ocsd.com**

Installation of 30-inch diameter pipe for the Red Hill Sewer Improvement Project in the Cities of Tustin, Irvine, and Santa Ana. Over one mile of pipe was replaced with a larger diameter pipe at a depth of approximately 20 feet.

community outreach program

The **Capital Improvement Program (CIP)** has projects sprinkled throughout central and northern Orange County, as well as at our two plants in Fountain Valley and Huntington Beach. It is no surprise that these projects have the potential to impact our neighbors. This means that we must keep our rate payers informed of the activities and solicit their input in planning and design to mitigate the potential impact to their daily activities.

The Community Outreach Program was developed to establish a relationship with the community to ensure they are well informed of the CIP projects prior to construction. The purpose is to build a strong rapport that allows the outreach team to be the liaisons and advocates for the community, and to make sure the concerns, issues, and questions of the public are addressed prior to and during construction. We strive to educate the public on the importance of maintaining and upgrading the infrastructure to preserve their quality of life.

The outreach program is comprised of:

- Community Liaison
- Community Meetings
- Community Database and Research
- Construction Hotline
- E-mail Notifications
- Letters, Notifications, and Flyers
- Media Relations
- Neighborhood Bulletins
- Presentations
- Social Media
- Website
- Plant Tours
- On-site Visits

To learn more about the Capital Improvement Program and the Community Outreach Program, please visit our website at **www.ocsd.com/construction**. You can reach our Community Liaisons by contacting our **Construction Hotline** at **714-378-2965** or via email at **constructionhotline@ocsd.com**.

Jack and bore operation for installation of 48-inch pipe underneath the 91 freeway in Anaheim. Jack and bore consist of using a machine to tunnel underneath the street without disturbing the surface. There is a launch pit to insert the machine and an exit pit to remove the machine once the work is complete.

awards

Awards

American Academy of Environmental Engineers & Scientists
Honor Award in Planning for Biosolids Master Plan
Honor Award in Environmental Sustainability for Effluent Reuse Study

Santa Ana River Basin Section of the California Water Environment (SARBS)
Supervisor of the Year - William Cassidy

Communicator Awards
Silver Award of Distinction - CIP Annual Report 2015-2016

Piping to transport dewatered sludge from the new thickening and dewatering building to the solids storage facility at Plant No. 1.

Centrifuges in the new thickening and dewatering building at Plant No. 1. The dewatering centrifuges will dewater solids to be sent to the solids storage facility, thus replacing the existing belt presses. The thickening centrifuges will thicken sludge from various processes to be sent to the digesters.

planning and research

The Capital Improvement Program has various components that take meticulous planning, coordination, and management. Every project goes through a rigorous evaluation that often begins or derives from a study. Below are some of the largest studies conducted during the past year that are setting the tone for the CIP's future.

Biosolids Master Plan

One of the strategic goals in the agency's 2013 Five-Year Strategic Plan was to study biosolids management options. The study for the Biosolids Master Plan was recently completed. The Biosolids Master Plan evaluated the biosolids market and investigated technology options for future Plant No. 2 digestion facility replacement, keeping in mind OCSD's plan to accommodate Orange County's food waste diversion needs. The result was a comprehensive plan for Plant No. 2 digestion facilities to be implemented over the next twenty years. The new digestion facilities will generate Class A biosolids, which will provide a sustainable, cost-effective, and diverse biosolids management strategy for OCSD as specified in the strategic goal. Currently, the project team is developing a programmatic Environmental Impact Report (EIR) for the projects recommended by the Biosolids Master Plan, with certification planned for summer 2018.

Collections Capacity Evaluation

Evaluating and monitoring the flow entering our facilities is crucial to ensuring our plants are properly built and operated. Last year, approximately 85 flow monitors were installed throughout the service area to gather data that will be analyzed as part of the Collections Capacity Evaluation Study. The main objective of the study is to update the existing collections hydraulic model to identify and prioritize capacity-related projects in our collections system. The flow data collected will be used to calibrate the model, and to analyze the amount of inflow and infiltration that enters the system during wet weather events. Data used to estimate flows such as population projections will also be updated to make the hydraulic model more accurate. This study will be completed in 2018.

2017 Facilities Master Plan

A Facilities Master Plan is used to guide the CIP based on the identified needs. Last year the development of the 2017 Facilities Master Plan began to validate and prioritize OCSD's 20-year capital improvement program plan, which will be the basis for a sewer rate study scheduled for later this year. The Facilities Master Plan focused on assessing OCSD's capability to meet regulatory requirements, future capacity demands, level of service goals and initiatives set by the Strategic Plan, to determine the scope, schedule and budget of projects that are needed.

The plan also incorporated projects identified by other recent more focused master plans and planning studies, such as the Biosolids Master Plan, Odor Control Master Plan, and the Effluent Reuse Study. The result is CIP outlays of $2.5 billion and $5 billion, for the next 10 and 20 years, respectively. The next step is to take this information and conduct a rate study to recommend a rate structure for the next 5 years. The rate study is slated to be completed by October 2017.

Odor Control Master Plan

As part of our good neighbor policy, an Odor Control Master Plan was conducted to further improve our odor control systems. The plan identified nuisance-level odors for each process area utilizing the Odor Profile Method, which is the first application of this method for wastewater processes. The Odor Profile Method is a tool to identify odors that are below the detection limit of standard analytical methods, yet odorous and detectable by the human nose. Pilot testing of odor control technologies was also conducted to determine particular odorant removal rates for each filter technology. The results help determine the best treatment to address odorants present at process areas. The combined testing methods formed the basis for the Odor Control Master Plan which provides a guide for the necessary future investment to ensure odor control is effective for each plant process area.

reclamation plant no. 1

Plant No. 1 is a 100-acre facility located in Fountain Valley adjacent to the Santa Ana River, I-405, and the Orange County Water District. The aging facility is undergoing some major upgrades to continue providing quality service. These are some of the projects we are working on.

Sludge Dewatering and Odor Control

Where: East side of Plant No.1

What: Enhancement of solids processing and odor control systems. New facilities will reduce the water content of our trucked biosolids reducing the hauling costs, resulting in cost savings of $3.6 million annually.

Why: Higher treatment level has created more solids to be handled and processed.

When: Construction began in 2013, completion scheduled for 2019.

Headworks Complex, Site and Security, and Entrance Realignment Program

Where: North end of Plant No. 1 and property across Ellis Avenue.

What: Relocation of the administration offices from the north end of Plant No. 1 to a new property across Ellis Avenue from the existing location. Upon construction of the new building, the old office buildings will be demolished.

Why: The current offices can't accommodate administrative staff resulting in personnel being spread out through the plant in temporary trailers. The new building will be large enough to house all of the Plant No. 1 administrative staff in a joint location. Construction will include administration offices, laboratory, and a parking structure.

When: Project currently in preliminary design. Construction anticipated for 2020 with a three-year project duration.

Headworks Rehabilitation and Expansion

Where: North-east side of Plant No. 1

What: Rehabilitation and expansion of the Headworks Facility. Includes replacing peak wet weather pumping capacity, replacing and upgrading grit removal systems, upgrading odor control system, and installing a more reliable power supply to the facilities.

Why: To increase the life of critical assets, Headworks is the heart of the process. Improve service to other areas in the plant, and meet the level of service.

When: Project is currently in design, construction anticipated for 2020.

treatment plant no. 2

Plant No. 2 is a 100-acre facility located in Huntington Beach adjacent to the Santa Ana River, Huntington State Beach, and Brookhurst Street. The plant is in the midst of major upgrades and improvements that are preparing us for current and future needs. These are some of the projects we are working on.

Ocean Outfall System Rehabilitation – Phase A

Where: Adjacent to Santa Ana River trail between Plant No. 1 and No. 2, and east side of Plant No. 2

What: Rehabilitation of the 84-inch and 120-inch interplant lines that run between the two plants. Repair the wetwell and junction boxes of the Ocean Outfall Booster Station.

Why: To extend service life of facilities by approximately 20 years.

When: Construction began in summer 2017, estimated completion for mid-2019.

Ocean Outfall System Rehabilitation – Phase B

Where: East side of Plant No. 2

What: Construction of new joint Outfall Low Flow Pump Station and Plant Water Pump Station facility, and rehabilitation of the existing Ocean Outfall Booster Station, Central Power Generation Building, Effluent Pump Station Annex, and Standby Power Facility.

Why: To repair and improve the reliability and efficiency of the Ocean Outfall System at Plant No. 2, and accommodate lower flows to ocean due to expansion of Groundwater Replenishment System (GWRS).

When: Project is currently in design, construction anticipated for fall 2018 with completion in 2022.

Sludge Dewatering and Odor Control

Where: West side of Plant No. 2

What: Construction of facilities to reduce biosolids handling and disposal costs and add odor control components. Old structures no longer needed will be demolished.

Why: To replace aged sludge dewatering facilities and add odor control.

When: Project is currently in construction with completion estimated for 2020.

collection system projects

There are 396 miles of regional sewer and 15 pump stations in the OCSD collection system. A system that collects flow from 2.6 million people who reside and frequent our service area. Projects within the collection system require a different approach than those within our plants because of the elaborative coordination required with the cities, the public, and other agencies. Showcased in the map are projects that are currently in construction or will be in the next couple of years.

Newhope Sewer Replacement Project – Phase A (State College Sewer Project)

Where: State College Blvd. from Yorba Linda Blvd. to south of SR-91, Yorba Linda Blvd. from State College to Associated Road – Cities of Fullerton and Anaheim.

What: Installed new, larger sewer line.

Why: To allow flow to be rerouted so more water is available for recycling, to abandon the Yorba Linda Pump Station and eliminate maintenance and operating cost, to provide greater capacity.

When: Construction began in May 2016, completed summer 2017.

Newhope Sewer Replacement Project – Phase B (State College Sewer Project)

Where: State College Blvd. from south of SR-91 to Orangewood Avenue – City of Anaheim.

What: Installing new, larger sewer pipeline ranging from 48 inches to 54 inches.

Why: Project is continuation of Phase A. Once entire segment is completed, an additional 8 million gallons of water will be available for recycling.

When: Project currently in final design, construction anticipated from Summer 2018 – Fall 2020.

Western Regional Sewers Rehabilitation

Where: Seal Beach Blvd., Los Alamitos Blvd., Cerritos Avenue, Bloomfield Avenue, Denni Avenue, Moody Street, Katella Avenue, Orange Avenue, Western Avenue – Cities of Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, and unincorporated areas of the County of Orange.

What: Rehabilitating or replacing 17 miles of pipe along four distinct sewer lines, and replacing the wet well and installing odor control measures at Westside Pump Station.

Why: Aging infrastructure, need to upgrade to continue providing safe and reliable service.

When: Project currently in preliminary design, construction anticipated for 2019.

Seal Beach Pump Station Rehabilitation

Where: Corner of Seal Beach Blvd. and Westminster Avenue, and Westminster Avenue between Seal Beach Blvd. and Springdale Street – Cities of Seal Beach and Westminster.

What: Rehabilitation of existing Seal Beach Pump Station and dual force main system.

Why: Aging infrastructure. Project will increase system reliability, modernize and standardize equipment, and address odor and corrosion concerns to extend service life by 30-40 years.

When: Project currently in preliminary design, construction anticipated for 2019 – 2021.

Red Hill Sewer Improvements

Where: Red Hill Avenue from McGaw Avenue to Mitchell Avenue, and intersection of Newport Avenue and Mitchell Avenue – Cities of Tustin, Irvine, and Santa Ana.

What: Rehabilitated and/or replaced segments of an existing trunk line and an interceptor line.

Why: To extend the life of the sewer line and eliminate risk of spill during wet weather flows.

When: Construction began in May 2016, completed summer 2017.

District 6 Trunk Sewer Project

Where: Newport Blvd. between Pacific Coast Highway and Industrial Way; and Pomona Avenue and 17th Street – Cities of Newport Beach and Costa Mesa.

What: Installation of new sewer pipe to increase the size of the existing pipeline, rehabilitation of some segments of pipe, as well as manholes.

Why: Pipe is severely corroded and needs to be replaced with larger pipe to allow additional capacity.

When: Construction from September 2017 – Spring 2018.

The 600 feet of pipe that was installed under the 91 Freeway in Anaheim was encased in steel. Pictured here is the launch pit for the jack and bore operation on State College Boulevard.

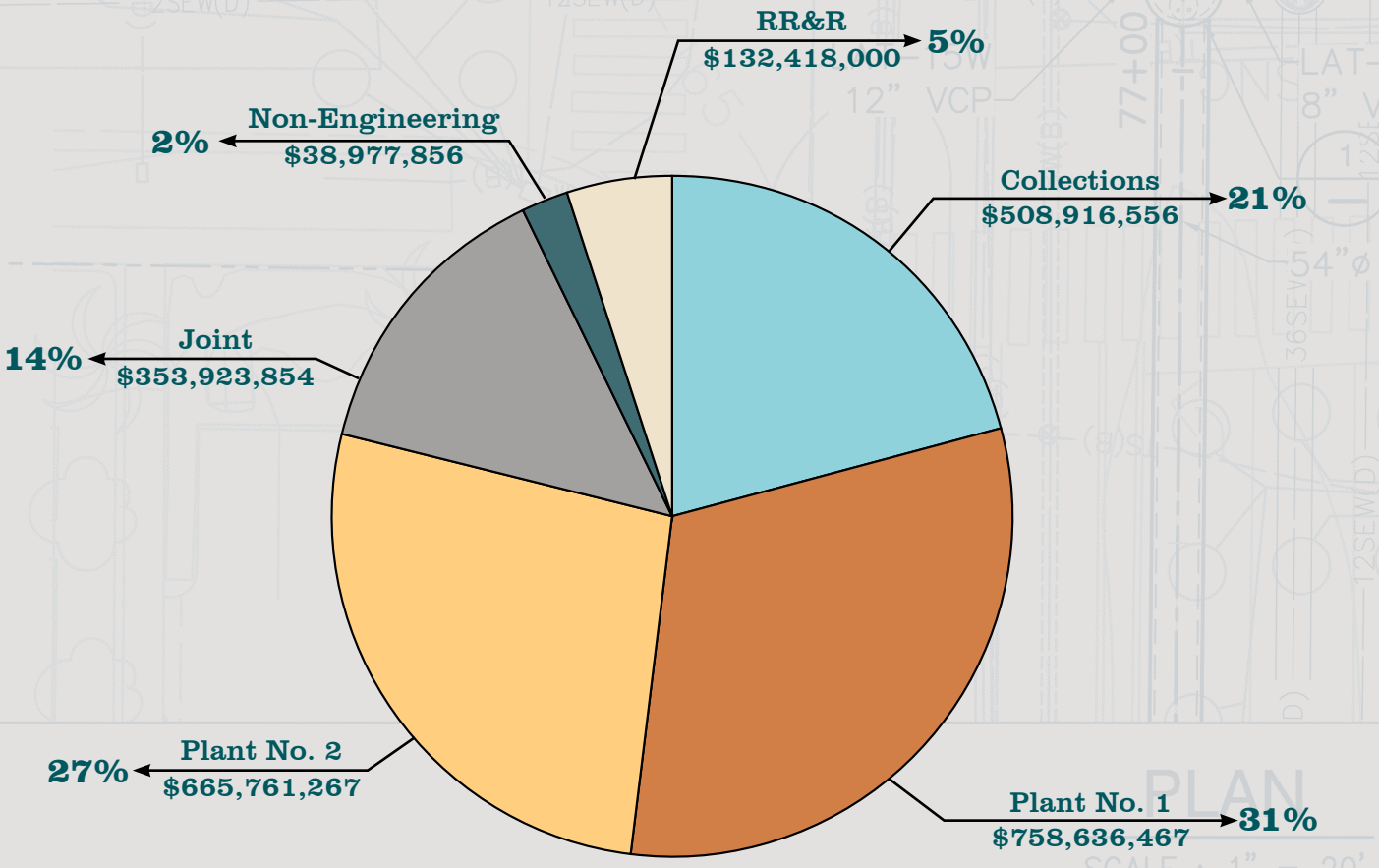
financial data and contract activity

The Capital Improvement Program budget represents the dollar amount allocated to projects from project development to closeout. The individual projects are closely evaluated to confirm that the appropriate funds are budgeted.

While this annual report focuses on the efforts made by the Engineering Department, the numbers noted in the following tables and charts represent the agency's overall Capital Improvement Program which includes projects by Information Technology and Operations and Maintenance.

The chart below shows the 10-year budget for all the proposed CIP projects, including projects that are not fully scoped or identified which are designated as Replacement, Rehabilitation, and Refurbishment.

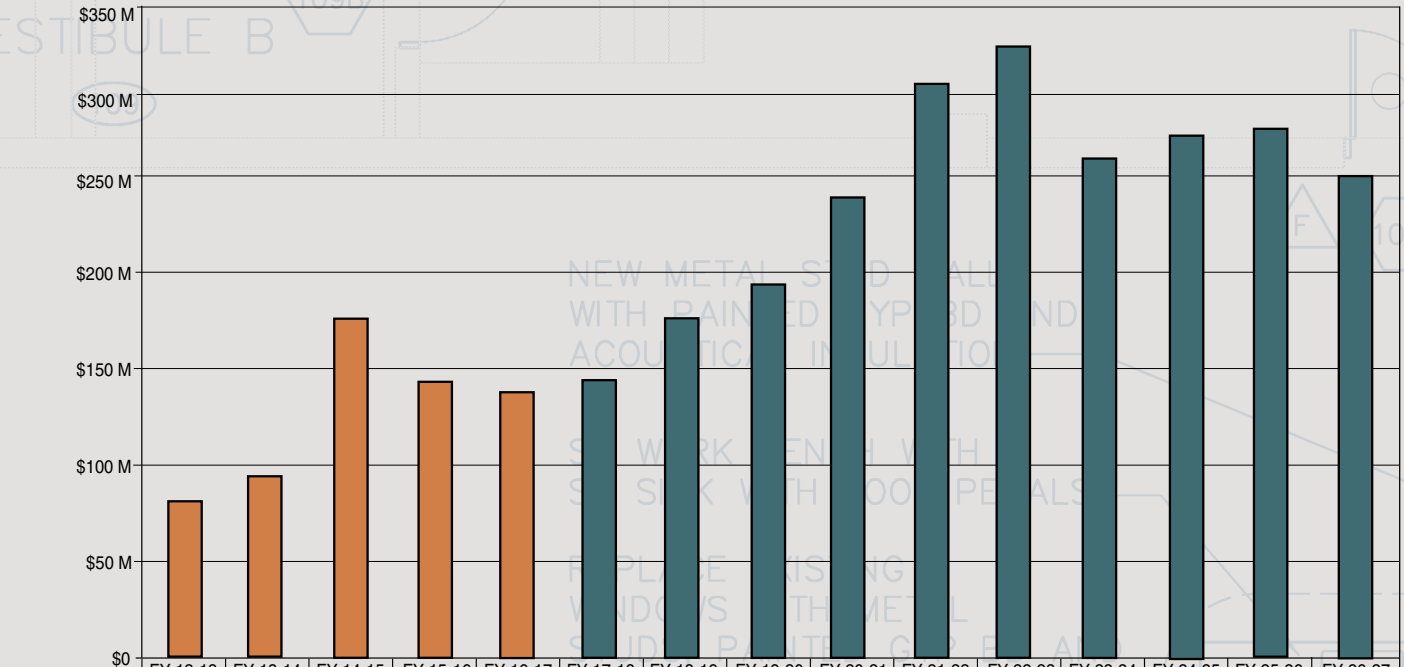
Fiscal Year 2017-18 through Fiscal Year 2026-27
Net CIP Outlay
$2,458,634,000



program cash flow

At the end of the year the net outlay is compared against the actual expenditures to evaluate what occurred during that time and determine if any adjustments need to be made.

The graph below shows the actual expenditures for the past few years and the proposed net outlays for the years to come. The charts showcase the actual expenditures for the reporting period (FY16/17) and the net outlay for the current year (FY17/18).

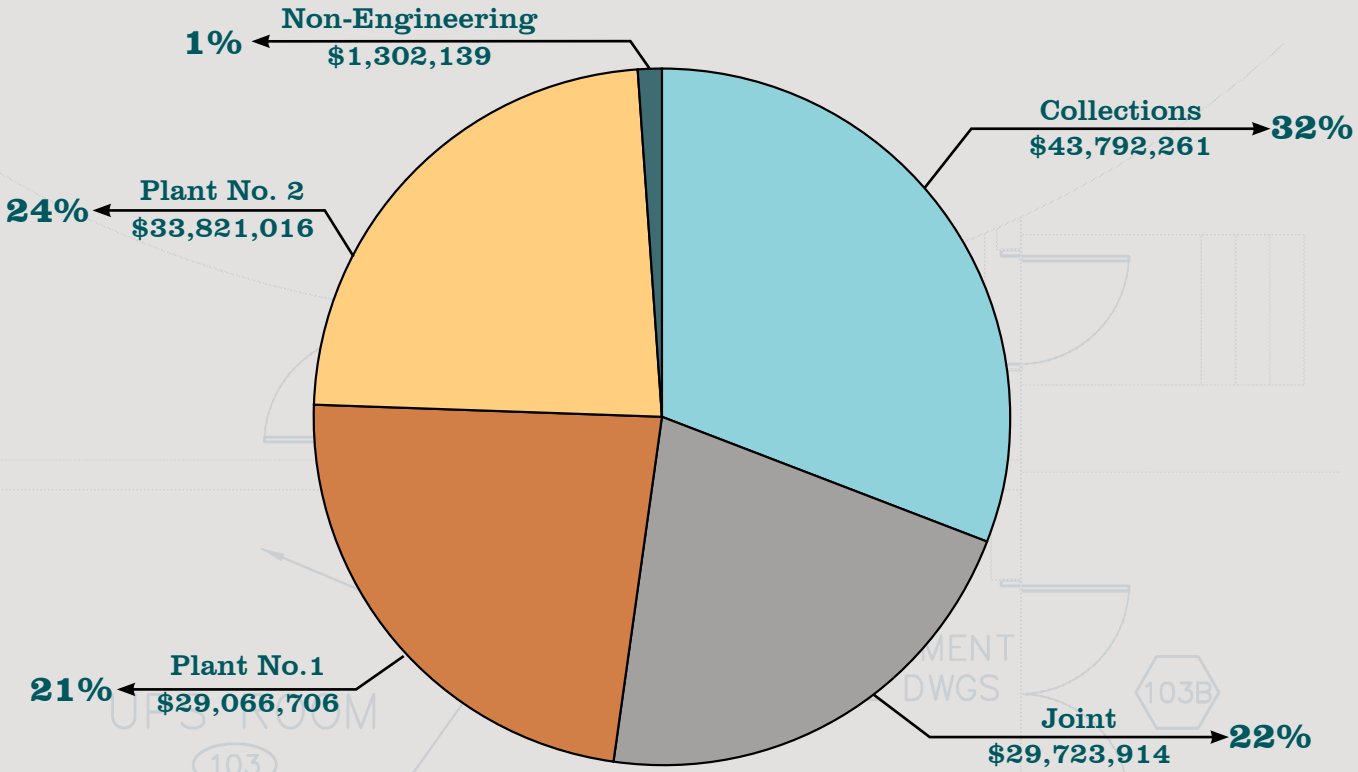


	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24	FY 24-25	FY 25-26	FY 26-27
Budget/Actuals	$87 M	$94 M	$172 M	$148 M	$138 M	$148 M	$169M	$193 M	$234 M	$306 M	$332 M	$263 M	$275 M	$288 M	$250 M

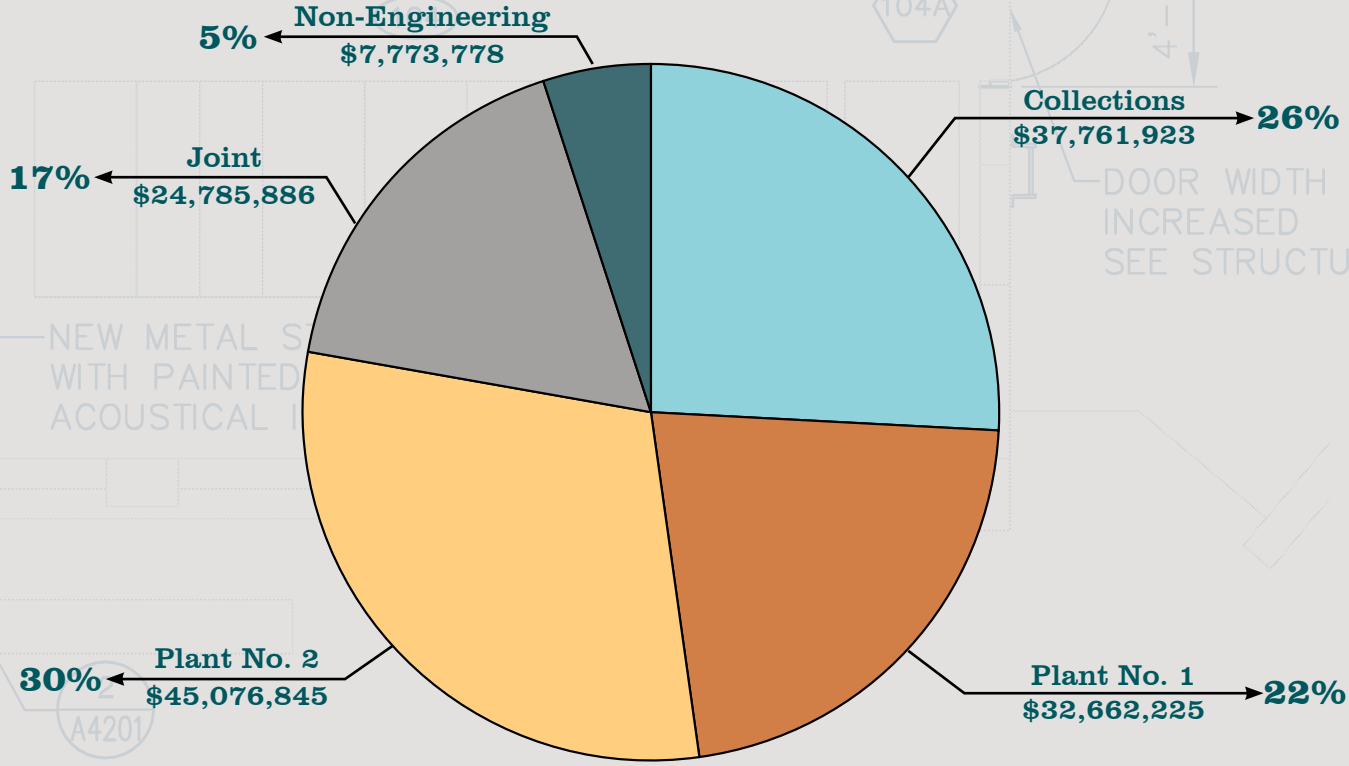
LEGEND
- Actuals
- Projected

Set up of slide rail shoring for installation of 72-inch manhole at Red Hill and Mitchell Avenue in Tustin. Over 50 manholes were also rehabilitated and/or replaced as part of the project.

Fiscal Year 2016-17 Actual CIP Expenditures
$137,706,036



Fiscal Year 2017-18 Net CIP Outlay
$148,060,657



contract activity

The Engineering Department and Contracts Administration Division stay busy all year long going through an extensive procurement process to award multiple contracts. Over the course of the year four planning studies, seven design contracts, and five construction contracts were awarded, totaling almost $60 million. We also completed a total of ten construction projects.

The tables below showcase the specific contract activity that occurred during the fiscal year.

PLANNING STUDIES CONTRACTS AWARDED THIS FISCAL YEAR

City/Plant	Project No.	Project Name	Consultant	Amount of Award	Date of Award
Plant No. 1, Plant No. 2	PS15-06	Seismic Hazard Evaluation at Plant No. 1 and Plant No. 2	Geosyntec Consultants	$2,578,028	June 2017
OCSD Service Area	PS15-08	Collections Capacity Evaluation Study	RMC Water & Environment	$2,802,675	August 2016
Plant No. 1, Plant No. 2, & OCSD Service Area	PS15-10	2017 Facilities Master Plan	Carollo Engineers	$3,132,052	July 2016
Newport Beach	PS15-07	Pressurization and Odor Control Study at Newport Beach	Dudek & Associates, Inc.	$256,478	Sept. 2016

DESIGN CONTRACTS AWARDED THIS FISCAL YEAR

City/Plant	Project No.	Project Name	Consultant	Amount of Award	Date of Award
Yorba Linda	2-41-8	SARI Rock Stabilizers Removal	Michael Baker International, Inc.	$399,008	Sept. 2016
Irvine	FE16-11	Lane Channel Crossing	HDR Engineering, Inc.	$131,939	June 2017
Plant No. 1, Plant No. 2, & OCSD Service Area	J-126	Safety Improvements Program	Arcadis	$1,540,000	July 2016
Plant No. 1, Plant No. 2	J-128	Project Management Information System	PM Web Inc.	$1,022,500	May 2017
Plant No. 1	P1-129	AS1 RAS Header Piping Replacement at Plant No. 1	AECOM Technical Services, Inc.	$523,039	May 2017
Plant No. 2	P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	CDM Smith	$5,319,930	May 2017
Plant No. 2	P2-98	Primary Treatment Rehabilitation at Plant No. 2	Black & Veatch	$18,141,423	July 2016

CONSTRUCTION CONTRACTS AWARDED THIS FISCAL YEAR

City/Plant	Project No.	Project Name	Contractor	Amount of Award	Date of Award
Newport Beach, Costa Mesa	6-17	District 6 Trunk Sewer Relief	Charles King Company, Inc.	$3,699,301	Sept. 2016
Brea	FE16-08	Carbon Canyon Clay Pipe Repairs	SANCON Engineering	$303,563	March 2017
Plant No. 2	P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	Flatiron West Inc.	$16,730,000	January 2017
Plant No. 2	P2-92A	Truck Loading Bay Odor Control at Plant No. 2	Kiewit Infrastructure West	$3,304,000	Nov. 2016
Plant No. 1	FE15-04	Plant No. 1 Primary Clarifier Back-wash System Demo	United Riggers & Erectors Inc.	$21,591	July 2016

CONSTRUCTION CONTRACTS COMPLETED THIS FISCAL YEAR			
City	**Project No.**	**Project Name**	**Contractor**
Newport Beach	5-60	Newport Force Main Rehabilitation	Kiewit Infrastructure West
Plant No. 1	P1-115	Title 24 Access Compliance and Building Rehabilitation Project, Package A	Stronghold Engineering, Inc.
Plant No. 2	J-110	Final Effluent Sampler and Building Area Upgrades	Shimmick Construction
Plant No. 1	J-111	Cengen Emissions Control Project	Shimmick Construction
Plant No. 2	P2-89	Solids Thickening and Processing Upgrades	W. M. Lyles Company
Plant No. 1, Plant No. 2	FE10-20	2011 Miscellaneous Fall Protection Improvements	OConnell Engineering & Construction, Inc.
Plant No. 2	FE12-10	IT Server Room Cooling Improvements	ODC Engineering and Technology
Plant No. 2	FE14-06	Plant No. 2 Repairs to Air Dampers at OOBS	OConnell Engineering & Construction, Inc.
Plant No. 1	FE15-04	Plant No. 1 Primary Clarifier Backwash System Demo	United Riggers & Erectors Inc.
Plant No. 1	FE14-04	Primary Influent Channels Repair at Plant 1	Jamison Engineering

Formwork for the sheer wall and parapet wall on the low roof level of the Centrifuge Building of the Sludge Dewatering and Odor Control Project at Plant No. 2. This building design combines cast in place sheer walls and columns with precast architectural panels to provide a unique finished look.

engineering CIP projects

The projects listed below are those that were active during the reporting period.

COLLECTION SYSTEMS PROJECTS				
Cities	**Project Number**	**Project Description**	**Phase**	**Project Budget**
Costa Mesa, Fountain Valley, Santa Ana	1-17	Santa Ana Trunk Sewer Rehab	Completed	$6,974,000
Yorba Linda	2-41	SARI Re-Alignment	Construction	$11,404,000
Yorba Linda	2-41-8	SARI Rock Stabilizers Removal	Construction	$6,860,000
Fullerton	2-65	Newhope - Placentia Trunk Grade Separation Replacement	Construction	$4,300,000
Fullerton, Anaheim	2-72	Newhope-Placentia Trunk Replacement	Construction	$112,000,000
Anaheim, Placentia	2-75	Lakeview Grade Separation Project	Close-out	$330,000
Anaheim, Placentia	2-76	Tustin Rose OCTA Grade Separation	Close-out	$586,000
Anaheim, Placentia	2-77	Orangethorpe OCTA Grade Separation	Close-out	$1,505,000
Seal Beach	3-62	Seal Beach Pump Station Rehabilitation	Preliminary Design	$54,000,000
Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, County of Orange	3-64	Rehabilitation of Western Regional Sewers	Preliminary Design	$217,069,000
Fountain Valley	3-66	405 Widening Project Impacts on OCSD Sewers	Project Development	$528,000
Newport Beach	5-60	Newport Force Main Rehabilitation	Close-out	$59,668,000
Newport Beach	5-67	Bay Bridge Pump Station Replacement	Project Development	$64,000,000
Costa Mesa, Newport Beach	6-17	District 6 Trunk Sewer Relief	Construction	$7,965,000
Tustin, Irvine, Santa Ana	7-37	Red Hill Sewer Improvements - Reach B	Construction	$25,213,000
Fullerton	FE10-21	Area 02 Craig Regional Park Manhole Improvements	Design	$1,359,000
Fullerton	FE15-01	Fullerton Creek Channel Crossing	Design	$260,000
Newport Beach	FE15-10	East Lido Force Main Rehabilitation	Project Development	$2,628,000
Newport Beach	FE16-01	Big Canyon Nature Park Improvements	Project Development	$533,000
Newport Beach	FE16-02	Jamboree Sewer Realignment at Big Canyon	Project Development	$930,000
Brea	FE16-08	Carbon Canyon Clay Pipe Repairs	Design	$1,131,000
Irvine	FE16-11	Lane Channel Crossing	Project Development	$1,251,000
Plant No. 2	FE16-13	Collections Infrastructure Relocation at Plant 2, Phase 1B	Project Development	$216,000
Huntington Beach	FE16-14	Slater Pump Station Valve Replacements	Project Development	$906,000

RECLAMATION PLANT NO. 1				
Cities/Plants	**Project Number**	**Project Description**	**Phase**	**Project Budget**
Plant No. 1	P1-100	Digester Rehabilitation at Plant No. 1	Construction	$67,150,000
Plant No. 1	P1-101	Sludge Dewatering and Odor Control at Plant No. 1	Construction	$188,328,000
Plant No. 1	P1-105	Headworks Rehabilitation and Expansion at Plant No. 1	Preliminary Design	$436,000,000
Plant No. 1	P1-112	Plant Water System Rehabilitation at Plant No.1	Completed	$6,157,000
Plant No. 1	P1-115	Title 24 Access Compliance and Building Rehabilitation Project	Construction	$21,717,000
Plant No. 1	P1-123	Trunk Line Odor Control Improvements	Construction	$9,299,000
Plant No. 1	P1-124	Plant No. 1 Primary Treatment Upgrades	Completed	$9,146,000
Plant No. 1	P1-128	Headquarters Complex, Site and Security, and Entrance Realignment Program	Preliminary Design	$179,067,000
Plant No. 1	P1-129	AS1 RAS Header Piping Replacement at Plant No. 1	Project Development	$3,979,000
Plant No. 1	P1-132	Uninterrupted Power Supply Improvements at Plant No. 1	Project Development	$4,800,000
Plant No. 1	FE12-10	IT Server Room Cooling Improvements	Completed	$960,000
Plant No. 1	FE14-05	Plant No. 1 Fleet Services UST Leak Remediation	Design	$7,032,000
Plant No. 1	FE15-09	CenGen Hot Water Pipe Bracing at Plant No. 1	Design	$425,000
Plant No. 1	FE16-06	Fuel Cell Facilities Demolition	Project Development	$166,000
Plant No. 1	FE16-10	East Basin Distribution Box Repair	Design	$854,000
Plant No. 1	FE16-12	Garfield Road Perimeter Security Fence	Project Development	$121,000

TREATMENT PLANT NO. 2				
Cities/Plants	**Project Number**	**Project Description**	**Phase**	**Project Budget**
Plant No. 2	P2-89	Solids Thickening and Processing Upgrades	Commissioning	$48,150,000
Plant No. 2	P2-91-1	Plant No. 2 Digester Facilities Rehabilitation	Project Development	$49,220,000
Plant No. 2	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Construction	$90,477,000
Plant No. 2	P2-96	Site and Security Improvements at Plant No. 2	Construction	$252,000
Plant No. 2	P2-98	Primary Treatment Rehabilitation at Plant No. 2	Preliminary Design	$490,880,000
Plant No. 2	P2-101	Plant Water System Rehabilitation at Plant No. 2	Completed	$3,854,000
Plant No. 2	P2-106	Boiler System Rehabilitation and Scrubbers H & I Demolition at Plant No. 2	Completed	$3,095,000
Plant No. 2	P2-107	SCADA System and Network Upgrades	Design	$24,100,000
Plant No. 2	P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	Construction	$30,300,000
Plant No. 2	P2-118	Activated Sludge Aeration Basin Deck Repair at Plant No. 2	Design	$2,800,000
Plant No. 2	P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Project Development	$54,000,000
Plant No. 2	P2-123	Return Activated Sludge Piping Replacement at Plant No. 2	Project Development	$15,000,000
Plant No. 2	P2-124	Interim Food Waste Receiving Facility	Project Development	$5,400,000
Plant No. 2	P2-125	Plant No. 2 Southwest Perimeter Screening	Project Development	$2,800,000
Plant No. 2	FE13-04	Plant No. 2 Trickling Filter Chemical Odor Control	Construction	$4,290,000
Plant No. 2	FE14-03	Rehabilitation of Digester Mixing Pumps at Plant No. 2 Digesters E, H, R, S, and T	Construction	$1,360,000
Plant No. 2	FE15-02	Plant No. 2 Control Center Server Room HVAC Upgrade	Design	$773,000
Plant No. 2	FE15-06	Gas Compressor Building Piping Replacement at Plant No. 2	Design	$3,924,000
Plant No. 2	FE16-05	Buried Water Valve Support Upgrades at Plant No. 2	Project Development	$500,000
Plant No. 2	SP-129	Oxygen Plant Demolition at Plant No. 2	Completed	$3,440,000

JOINT FACILITIES PROJECTS

Cities/Plants	Project Number	Project Description	Phase	Project Budget
Plant No. 1, Plant No. 2	J-109	CenGen Cooling Water System Replacement Project	Completed	$11,477,000
Plant No. 2	J-110	Final Effluent Sampler and Building Area Upgrades	Construction	$16,411,000
Plant No. 1, Plant No. 2	J-111	CenGen Emissions Control Project	Close-Out	$23,820,000
Plant No. 2	J-117	Ocean Outfall System Rehabilitation	Preliminary Design	$147,000,000
Plant No. 1, Plant No. 2	J-124	Digester Gas Facilities Rehabilitation	Project Development	$96,500,000
Plant No. 1, Plant No. 2	J-125	Programmable Control Panel Upgrades	Completed	$2,283,000
Plant No. 1, Plant No. 2	J-126	Safety Improvements Program	Design	$19,000,000
Plant No. 1, Plant No. 2	J-127	Natural Gas Pipelines Replacement at Plant No. 1 and Plant No. 2	Project Development	$1,310,000
Plant No. 1, Plant No. 2	J-128	Project Management Information System	Project Development	$4,000,000
Plant No. 1	J-36-2	GWRS Final Expansion Coordination	Project Development	$1,132,000
Plant No. 1, Plant No. 2	J-98	J-98 Electrical Power Distribution System Improvements	Project Development	$34,608,000
Plant No. 1	FE16-12	Garfield Road Perimeter Security Fence	Project Development	$121,000

PLANNING STUDIES AND RESEARCH PROJECTS

Cities/Plants	Project Number	Project Description	Status	Project Budget
Plant No. 1, Plant No. 2	PS15-01	Biosolids Master Plan	Active	$4,150,000
Huntington Beach	PS15-02	Edinger Pump Station Rehabilitation Study	Active	$1,300,000
Huntington Beach	PS15-03	Slater Pump Station Rehabilitation Study	Active	$1,000,000
Plant No. 1, Plant No. 2	PS15-06	Seismic Hazard Evaluation at Plant No. 1 and Plant No. 2	Active	$3,860,000
Newport Beach	PS15-07	Pressurization and Odor Control Study at Newport Beach	Active	$535,200
OCSD Service Area	PS15-08	Collections Capacity Evaluation Study	Active	$4,529,678
Plant No. 1	PS15-09	Wastehauler and Fueling Stations Relocation Study	Completed	$165,000
Plant No. 1, Plant No. 2 & OCSD Service Area	PS15-10	2017 Facilities Master Plan	Active	$4,150,000
Plant No. 1, Plant No. 2 & OCSD Service Area	PS16-01	Stormwater Master Plan	Active	$1,415,700
Plant No. 2	PS16-02	SCE Feed Reliability Improvements Study	Active	$293,000
Plant No. 1	SP-125-15	SCCWRP Nutrient Cycling Sampling	Active	$95,000
Plant No. 1, Plant No. 2	SP-125-17	AquaCritox Evaluation/Design	Completed	$588,000
Plant No. 1, Plant No. 2	SP-148	Plant Air System Master Plan	Completed	$225,000
Plant No. 1, Plant No. 2 & OCSD Service Area	SP-152	Climate Change Impact Study	Active	$590,000
Plant No. 1, Plant No. 2	SP-166	Odor Control Master Plan	Completed	$1,950,000
Plant No. 1, Plant No. 2	SP-173	Effluent Reuse Study	Completed	$3,250,000
Newport Beach	SP-178	Bay Bridge Pump Station and Force Mains Rehabilitation Study	Active	$725,000
Plant No. 1, Plant No. 2	SP-195	Capital Improvement Program Management Services	Active	$300,000
Plant No. 1, Plant No. 2	SP-196	Process Control Systems Upgrades Study	Active	$3,554,000
Plant No. 1	PS16-04	Rectangular Primary Clarifier Reliability Study	Active	$420,000

Aerial view of the Centrifuge Building at Plant No. 2 after all the cast in place sheer walls and columns have been placed. The centrifuges will be located on the second floor of the building, and the rest of the equipment will be on the ground floor.

board of directors

Cities

Anaheim
Denise Barnes

Brea
Glenn Parker

Buena Park
Fred Smith

Cypress
Mariellen Yarc

Fountain Valley
Steve Nagel

Fullerton
Gregory C. Sebourn

Garden Grove
Steve Jones

Huntington Beach
Barbara Delgleize

Irvine
Donald P. Wagner

La Habra
Tim Shaw

La Palma
Peter Kim

Los Alamitos
Richard Murphy

Newport Beach
Scott Peotter

Orange
Teresa Smith

Placentia
Chad Wanke

Santa Ana
Sal Tinajero

Seal Beach
Ellery Deaton

Stanton
David Shawver

Tustin
Allan Bernstein

Villa Park
Robert Collacott

Sanitary Districts

Costa Mesa Sanitary District
James M. Ferryman

Midway City Sanitary District
Al Krippner

Water Districts

Irvine Ranch Water District
John Withers

Yorba Linda Water District
Phil Hawkins

County Areas

Member of the Board of Supervisors
Michelle Steel

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@ocsd.com • Phone: 714.378.2965
www.ocsewers.com