treatment facilities 2.0

BUILDING TO REUSE

ORANGE COUNTY SANITATION DISTRICT

CAPITAL improvement program

FISCAL YEAR 2015/16

FROM THE director of engineering

Over the past several years, the Engineering Department of the Orange County Sanitation District (the Sanitation District) has been shifting the planning methodology for the Capital Improvement Program (CIP). This advanced asset management approach looks at the condition and capacity of our facilities, the new technology options available, and the level of service changes and regulatory requirements in the future. This improved methodology is the way that the Sanitation District will continue to evolve from its original mission of sewage disposal in the 1950s to its current mission of environmental protection and resource recovery.

It has been exciting to watch projects conceived and scoped with this new methodology move through the design and construction process. These new projects will have a significant impact on the operation of the Sanitation District. Individual projects that renew and upgrade unit processes in the treatment plants are being thoughtfully designed to deliver improved reuse and resiliency.

The Sanitation District is committed to expanding reuse of water and solids for the benefit of its rate payers and the environment. On the water side, in cooperation with Orange County Water District, the Sanitation District expanded the capacity of the Groundwater Replenishment System by 42%, with plans to expand it by an additional 30%. On the solids side, the Sanitation District is expanding the conversion of organic material to energy, while continuing to provide high-quality fertilizers to the agricultural industry. Improvement projects to both digestion complexes will increase methane gas production and improvement projects to our power plants and will ensure we can continue to produce electricity and heat needed for our processes.

On resiliency, the Sanitation District is committed to thoughtfully improving our processes, utilities, and conveyance systems so that they are able to adapt and perform in an uncertain future. Our shift to increase water reuse will help create regional resiliency by addressing long-term drought risks in our service area. In addition, the Sanitation District is addressing seismic risks, especially at Plant No. 2, by upgrading structures and adding geographic diversity to conveyance, power, and communication systems.

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 of our CIP.

Rob Thompson, P.E.
Director of Engineering


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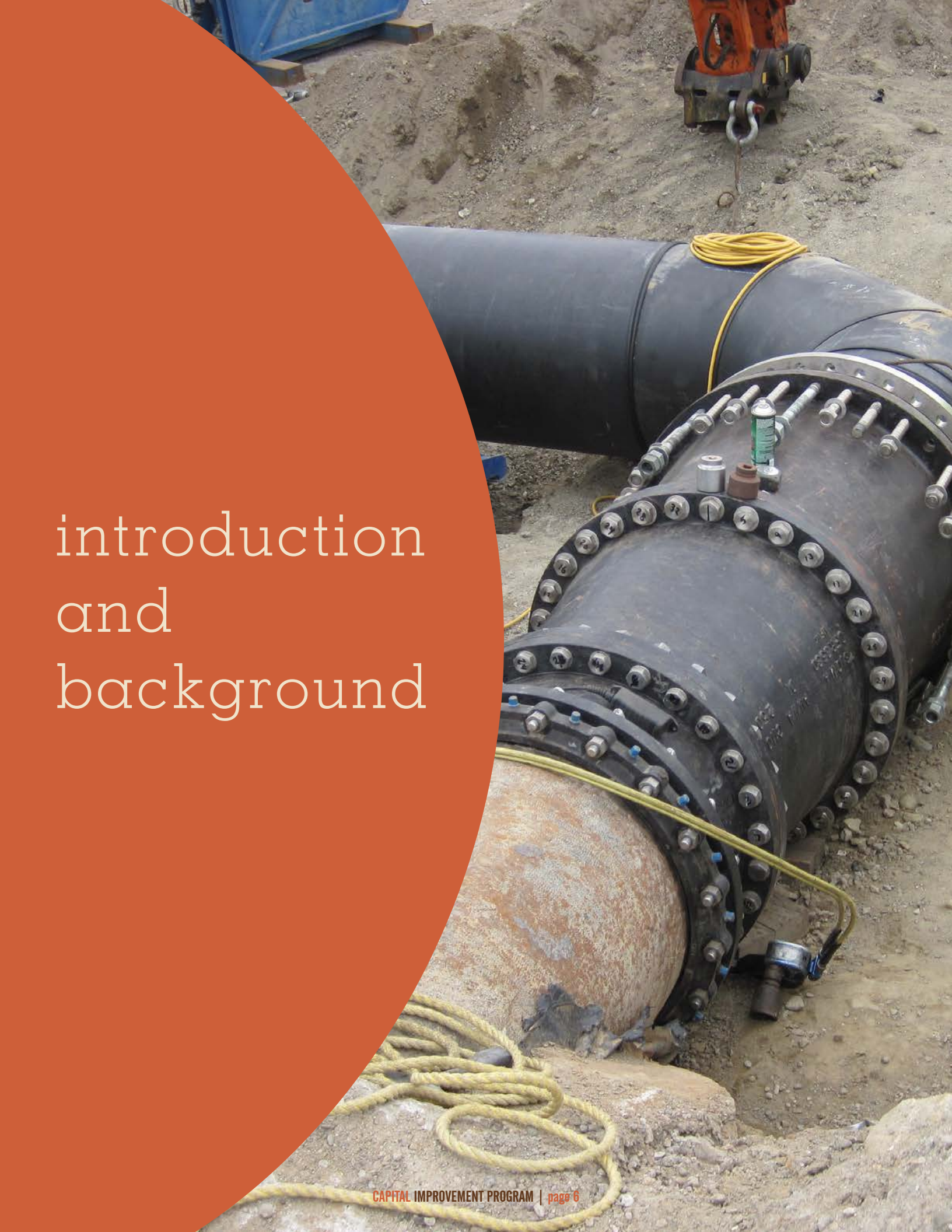
introduction and background



agency information

The Sanitation District is a resource recovery facility responsible for safely collecting, treating, recycling, and disposing of wastewater generated by 2.6 million people in Central and Northern Orange County. We have two treatments plants, 15 offsite pump stations, and 386 miles of sewers that must be maintained in a ready state for operation on a daily basis.

Being a resource recovery agency means that we convert sewage into useful products, principally water, energy and agricultural fertilizers.

The organics in the incoming sewage are converted to energy in the form of electricity, process heat, and building cooling. The organics not converted to energy are converted to biosolids and are used for their nutrient-rich benefits to fertilize farmland and as compost for agriculture.

The treated water is also recycled, it is sent to the Orange County Water District (OCWD) for further processing as part of the Groundwater Replenishment System that helps provide a reliable water source for 850,000 people annually.

Capital Improvement Program Overview

The Capital Improvement Program (CIP) is the Sanitation District's on-going effort to increase treatment capacity, upgrade or reconstruct our aging facilities, and to improve the quality of water that is released into the ocean. The focus of the perpetual program shifts over time. It began creating the initial capacity of the system, it then focused on improved treatment quality, and it is now focused on refurbishing and replacing our aging infrastructure and maximizing reuse. The Sanitation District plans to invest over $2 billion in our infrastructure over the next ten years. Technology, creativity, and out-of-the-box thinking allow us to find innovative solutions to improve our process technologies and minimize our operating costs. With development of our Biosolids Master Plan, the Odor Control Master Plan, and the Facilities Master Plan, we are preparing ourselves for the future.

Execution of the CIP depends on the engineers, inspectors, operators, mechanics, planners, project managers, analysts, administrative support, estimators, contract administrators, programmers, safety personnel, and outreach staff working together. That is over 140 staff member who work day in and day out on more than 70 active CIP projects going on at any one time. Last year alone, approximately 140,000 hours were spent on the CIP. Over 70 percent of the staff are residents of Orange County and average 12 years of service. The staff is well educated with almost 70 percent of our employees having Bachelor's degrees and over 35 percent with Masters Degrees. All of these numbers indicate the high level of commitment and preparation to perform the tasks of protecting the environment and public health.

The effective execution of the CIP would not be possible without our dedicated staff. We are very fortunate and proud to have such highly qualified staff that embraces the goals of the agency. Information regarding the CIP and the extensive Community Outreach Program can be found further along in this annual on our website at www.ocsd.com; by contacting our Construction Hotline at 714-378-2965; or via email at constructionhotline@ocsd.com.

planning and research

The Capital Improvement Program starts with an elaborate planning effort to anticipate capacity needs, manage risks associated with asset or system failure, identify technology advancements, comply with regulatory changes, and meet strategic goals. Part of the process is to prepare and maintain a 20-year District-wide CIP to ensure effective and efficient operations in the future.

Our Planning staff is constantly reviewing the condition, capacity, technology options and regulatory requirements of our assets to identify projects needed to cost effectively extend their life. The goal is to develop more comprehensive projects covering entire processes with greater delivery efficiency, rather than fewer narrowly focused projects to solve individual issues, that will provide better cash flow estimation. Research is a crucial step of the process. We examine new technologies and ideas to make the proper recommendation and suggestions to improve our systems and processes.

Below are some of the planning and research projects that took place during the fiscal year.

Odor Control Master Plan
Project No. SP-166

To support our good neighbor policy, we continue to make improvements to our odor control system. The Odor Control Master Plan will identify alternative levels of service for fence-line odors based on the chemical compounds that cause the odors, and investigate the available technologies that can filter these nuisance-causing odorants. Completion of the Odor Control Master Plan is necessary to ensure the Sanitation District's future investment in odor control is effective for each plant process area. As part of the master plan, we are conducting pilot testing of odor control technologies to determine particular odorant removal rates for each filter technology. The results will help determine the treatment to best address odorants present at process areas.

Effluent Reuse Study
Project No. SP-173

As environmental stewards, we recognize the value of enhancing water supply reliability in a time of persistent drought. Reusing this local resource supports California's efforts to provide a safe and sustainable water supply. the Sanitation District and OCWD have jointly sponsored the Groundwater Replenishment System (GWRS) and the Green Acres Project.

We have partnered with OCWD on the Effluent Reuse Study to look at treatment plant improvements needed to support the GWRS Final Expansion. The study lays out a plan that will segregate flows not fit for reclamation and make the balance of flows at Plant No. 2 available to the GWRS to maximize water reclamation.

Biosolids Master Plan
Project No. PS15-01

One of the main byproducts of our treatment process is biosolids. The Digestion complex at Plant No. 2 is in need of replacement due to seismic vulnerabilities that have been identified. Staff are using this opportunity to investigate technology options to maximize energy production and create high value fertilizer products. The Master Plan should be completed in spring 2017.

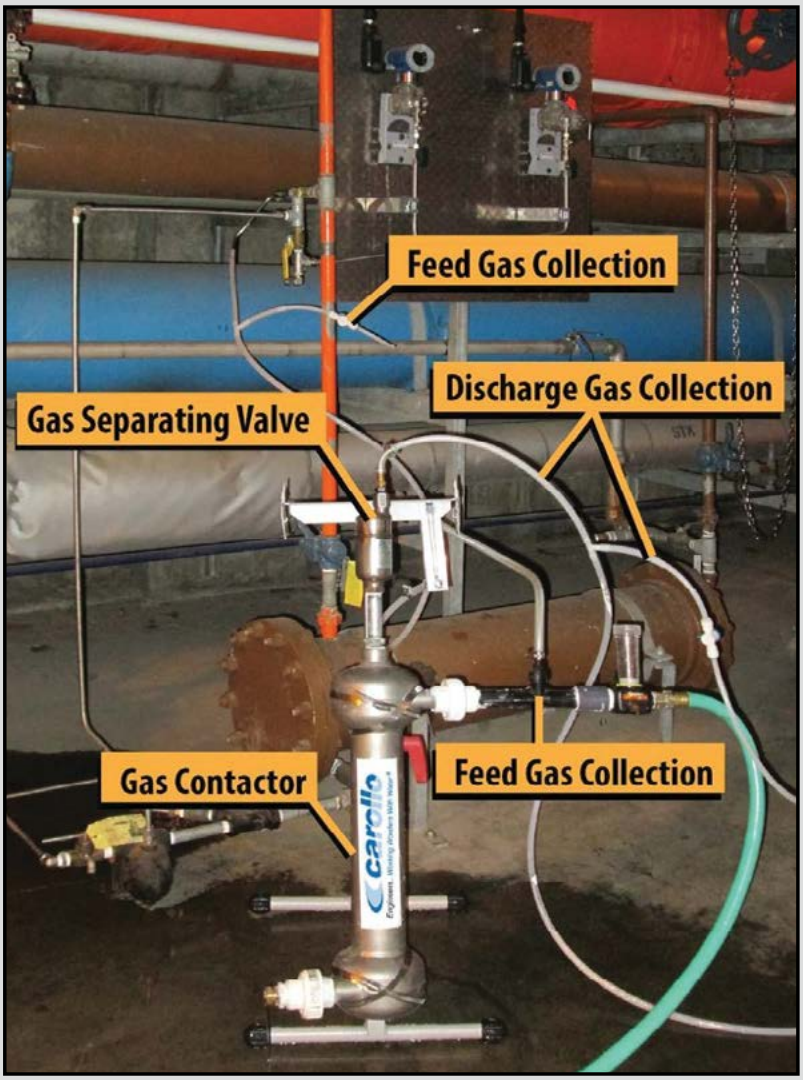
AquaCritox® Evaluation Study

As industry leaders, the Sanitation District is committed to exploring options that may not currently be used in our industry as part of the treatment process. An innovative technology has been identified that has the potential to replace several current unit processes with a single, more efficient treatment step. This process uses chemical and physical properties of water at elevated temperatures and pressures (the “supercritical” condition of water) to turn raw sludge into clean energy, harmless gases, and a small amount of inert mineral-rich material. The new technology, patented as AquaCritox®, offers up to three times better energy conversion, reduced negative environmental impacts, and superior final products at less cost than the current anaerobic digestion/engine generator/biosolids reuse technology that has been in place for decades. A three-step approach for investigating this process was approved by the Board of Directors in 2014. The first step was a conceptual study to define the process equipment, estimate performance and costs, and do site-specific planning for an AquaCritox® installation. That study has now been completed with a proposed path forward for design, and ultimately construction of a demonstration facility.

Biogas Improvements Study

Biogas is a byproduct of our process. Biogas from digesters contains chemicals, including odorous hydrogen sulfide (H2S) and silicon compounds (siloxanes), that must be removed before the gas can be used in the Central Generation engines. Currently, the removal process is done with liquid ferric chloride and columns of granular activated carbon, which are expensive and require a continuous chemical supply. Carollo Engineers has a new gas scrubbing process that uses water to remove the sulfides and siloxanes from the biogas, a process that is potentially more economical. The gas and water are mixed, transferring contaminants that are highly water soluble from the gas to the water.

A proof-of-concept was conducted which led to a feasibility study to evaluate the impacts of using the biogas scrubbing system in a full-scale application. The study is considering the impacts on other plant equipment, developing a conceptual full-scale design and cost estimate, calculating the resulting biogas treatment costs, and identifying areas of uncertainty that would require additional data to resolve.



design and construction

collection system projects

The Sanitation District collection system consists of 386 miles of sewers and 15 pump stations. The system collects flow from 20 cities, four special districts, and the unincorporated areas of the County of Orange. Staff analyzes the condition and capacity of the system to deliver sewage to the treatment plants to determine what improvements need to be made and develop projects to address those conditions.

Extensive preparation goes into developing, designing, and constructing the projects. An important element of projects within our collection system is coordinating with the cities, corresponding permitting agencies, and the public. We go to extensive lengths to make sure all parties are involved and informed along the way.

Newport Beach
Newport Force Main Rehabilitation
Project No. 5-60

The Newport Force Main Rehabilitation Project was a very critical project along a 2.5 mile stretch of Pacific Coast Highway (PCH) in the City of Newport Beach. The force mains transport most of the City's wastewater to our Huntington Beach treatment facility. This $41.4 million project was especially challenging due to the magnitude of the project and location, a major artery for many people who live, work, or commute via PCH with limited detour alternatives. The project replaced two parallel pressurized sewer pipelines, or force mains, and was accomplished using a combination of open trenches, tunnels, and trenchless rehabilitation methods, without any disruption to sewer services. Although the project encountered many challenges like finding an abandoned underground concrete tank, 16 deep wooden piles from an old bridge, and an active natural gas line, we still managed to complete the project ahead of schedule.

Fullerton/Anaheim
Newhope Sewer Replacement
Project No. 2-72 A & B

The Sanitation District is upsizing the Newhope Sewer, which runs along State College between Yorba Linda Blvd. and Orangewood Avenue in the Cities of Fullerton and Anaheim in order to abandon the existing Yorba Linda Pump Station, and make more water available for recycling. Currently, the water is pumped to the Santa Ana River Interceptor which mixes with brine from the Inland Empire which makes it undesirable for reclamation.

The project was divided into two phases to minimize the impact to the public by speeding up the northern portion of the work in coordination with the City of Fullerton's construction of a railroad grade separation project on State College Blvd. Phase A, above the 91 freeway, began earlier this spring with an estimated completion in fall 2017. Phase B, south of the 91 freeway, will then commence making its way across Anaheim with completion anticipated for mid-2019.

Costa Mesa/Newport Beach
District 6 Trunk Sewer Relief
Project No. 6-17

The Sanitation District has invested in many of its sewers in Newport Beach in recent years. Later this fall, we will commence construction on another project to repair an undersized sewer that is in need of rehabilitation. The District 6 Trunk Sewer runs along Newport Blvd. from Pacific Coast Highway in Newport Beach to Pomona Street in Costa Mesa. The sewer will be rehabilitated using a variety of methods including pipe bursting, open-cut pipe replacement/realignment, and cured-in-place relining. In addition, modifications will be made to above-ground structures to improve safety and reduce risk when accessing the pipe for maintenance. Construction is scheduled to begin in the fall and be completed by winter 2018.

Tustin/Irvine/Santa Ana
Red Hill System Improvements
Project No. 7-37

Construction is underway on the Red Hill System Improvements project. This project is rehabilitating and/or replacing segments of an existing trunk and an interceptor line located along Red Hill Avenue from McGaw Avenue to Mitchell Avenue within the Cities of Irvine, Tustin, and Santa Ana

The complexity of this project is increased by the depth of the sewer and a corridor filled with underground utilities. Excavating 20-feet deep and rehabilitating 50 manholes is very labor intensive and thus requires a significant amount of time. The Sanitation District has worked with the cities, local businesses, and residents to minimize the impact of this project. Construction is scheduled to be completed by September 2017.

Anaheim/Buena Park/Cypress/La Palma/Los Alamitos/Seal Beach/ County of Orange (Rossmoor)
Rehabilitation of Western Regional Sewers
Project No. 3-64

The rehabilitation or upsizing of 17 miles of sewer and upgrades to one pump station make up the Sanitation District's largest collection project. Over the last six months, we have been conducting exploratory field work in the streets of Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, and unincorporated areas of the County of Orange to identify the various elements that will be needed to be accounted for in the design of this large project. There are four trunk lines that will be either replaced or rehabilitated as part of this project. In addition, the Westside Pump Station will undergo some upgrades and add odor control measures. The 50-year old sewers are in poor condition and in some areas under capacity, therefore improvements need to be made.

While construction is not slated until 2019, close coordination with the impacted cities and agencies has already begun. We have also been corresponding with the local school districts to keep them informed of our activities. As the project progresses, more information will be shared and project details provided to the community. The Environmental Impact Report is expected to be released for public comment this fall. Design is anticipated to be completed by 2018, with construction wrapping up in 2022.

reclamation plant no. 1 projects

Plant No. 1 is located in Fountain Valley bordered by the Santa Ana River, the I-405, the OCWD and Fountain Valley residents. The 100-acre facility is operated 24-hours a day and currently responsible for providing 100 percent of the water sent to the OCWD for further processing in the Groundwater Replenishment System.

Below are a couple of the projects we are currently working on at Plant No. 1.

Sludge Dewatering and Odor Control Project No. P1-101

One of the larger projects taking place at Plant No. 1 is the enhancement to solids processing. The increased water demand at the Fountain Valley plant that is required to feed the water needs of the Groundwater Replenishment System, in combination with the higher treatment level, has created more solids to be handled and processed. The Sludge Dewatering and Odor Control project will reduce the water content of our trucked biosolids, which in turn will result in annual savings of $3.6 million due to reduced hauling costs. The new facility will pay for itself over time by decreasing the amount of water in the solids, and it will have lower total 25-year operational costs as compared to the existing process and technology. This new facility also has a high degree of automation, in fact, this is the most complex system installed at either Sanitation District plant.

The project is 85 percent complete. Testing of the facility will take place next year, with final completion anticipated for fall 2018.

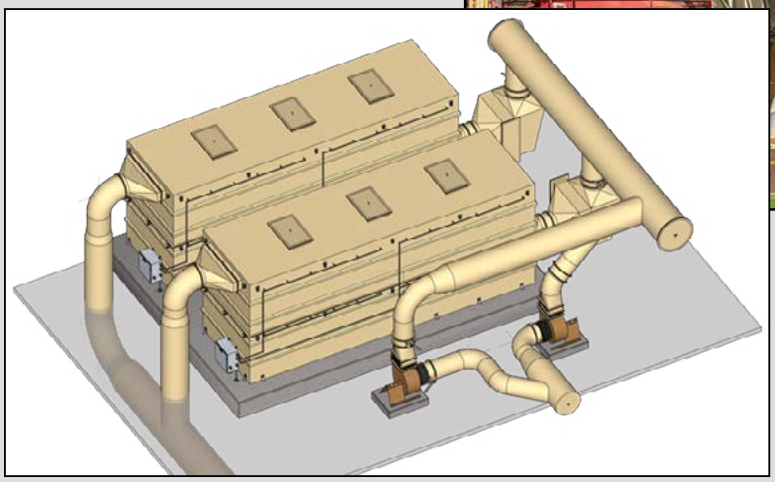
Actual facility

3-D model of facility

Headworks Rehabilitation and Expansion at Plant No. 1
Project No. P1-105

The Headworks Facility at Plant No. 1 will be rehabilitated and expanded. Rehabilitating the facility while keeping 130 million gallons of sewage flowing per day will be extremely involved and complicated. Key elements of this project include replacing peak wet weather pumping capacity, replacing and upgrading grit removal systems, providing an all-new, upgraded odor control system, and installing a more resilient and reliable power supply to the facilities. The project will also demolish some facilities that are long past their useful lives. Preliminary design of the project is currently underway with an eight-year construction slated to begin in 2019.

Current facility



Proposed 3-D model of facility

Headquarters Complex, Site and Security, and Entrance Realignment Program
Project No. P1-128

Our main administrative facilities currently sit on the north end of the Fountain Valley plant; however, that only houses a portion of our staff. This project will create new office and meeting space for staff currently spread across the Plant No. 1 facilities in various buildings and temporary trailers.

The estimated 155,000 square foot building will be large enough to accommodate staff that currently sits in the Administration Building, Human Resources, Risk Management, Engineering, IT, and Purchasing trailers. Potential locations are currently being evaluated to identify the best option to place our future Headquarter Complex. This project will also replace the existing environmental laboratory facilities which are dated and less efficient than current design standards.

treatment plant no. 2 projects

Plant No. 2 is located in Huntington Beach directly across from the Huntington State Beach. The 100-acre facility is bordered by the Santa Ana River, Pacific Coast Highway, and a residential area off Brookhurst Street in Huntington Beach. Below is a brief description of a couple of the Plant No. 2 projects.

Ocean Outfall System Rehabilitation Project No. J-117A and B

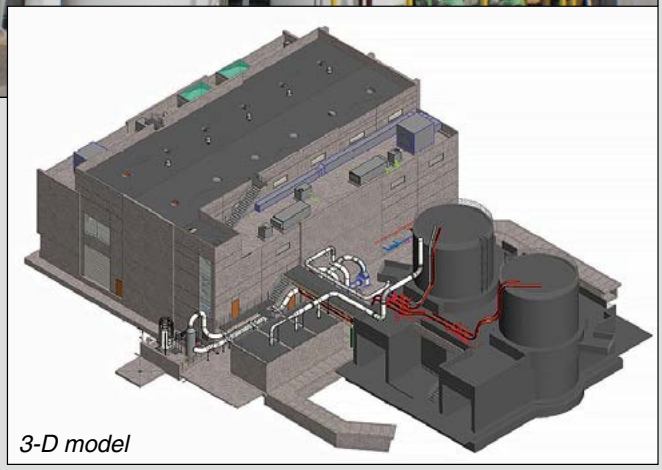
The Ocean Outfall System is the process responsible for moving the treated effluent from treatment to the ocean. This project will focus on rehabilitating the pumps, conveyance pipes, wetwells, electrical systems, and buildings that make up the system to increase its reliability and life expectancy. The project will also construct a new, low flow pump station that is necessary to support the increased water reclamation effort that cut the Sanitation District's ocean disposal flow. The work will be done in two phases, the first phase is scheduled to begin construction in 2017, will rehabilitate the 84 and 120-inch pipelines that travel along the Santa Ana River trail between the Fountain Valley and Huntington Beach plants, as well as repair the Ocean Outfall Booster Station wetwell and junction boxes. Phase B, scheduled for construction in 2018, will construct the new low flow pump station.

Sludge Dewatering and Odor Control Project No. P2-92

Plant No. 2 is also working on a project to improve and enhance the solids treatment process. Last year construction began on the Sludge Dewatering and Odor Control project which is constructing a centrifuge dewatering facility that will help reduce the amount of water in the trucked biosolids, thus resulting in reduced hauling costs.

Odor Control facility

The construction of this project has significant geotechnical work to support the structure in a liquefaction zone on a fault line. Odor control is also a large element of this project. All the air from the Centrifuge Building will be passed through ammonia scrubbers and biofilters before it is released to the atmosphere to remove odors from the air. Project completion is estimated for late 2018.



3-D model

community outreach program

Our **Capital Improvement Program** has a very broad and deep reach across our service area. With 2.6 million rate payers, we have a responsibility to keep the public informed of the activities that could potentially impact their daily lives. As such, we have a very active Community Outreach Program that focuses on establishing a relationship with the community we serve prior to any activity taking place. The objective is to help establish a surprise-free project from design through project completion.

We focus on informing and educating the public of the long-term benefits of our sewer improvements long before any construction begins. We involve the public in the design process and demonstrate concern and good faith by responding quickly and sincerely to address issues and provide reasonable solutions to concerns or complaints.

Our program consists of:

- Community Liaison
- Community Meetings
- Notifications and Flyers
- Neighborhood Bulletins
- Website
- Construction Hotline
- Social Media Posts
- Media Relations
- Presentations
- Community Research
- Database Research

This past year, we were also the recipient of the ***Golden Hub of Innovation Award*** for ***"Newport Beach Outreach Program."*** The Newport Beach Outreach Program was created to keep the Newport Beach community informed of five construction projects that were taking place over a five-year period in a concentrated area.

To learn more about our Capital Improvement Program and our **Community Outreach Program,** please visit our website at **www.OCSD.com/construction**. You may also contact our **Construction Hotline** at **(714) 378-2965** or via email at **constructionhotline@ocsd.com**. Our Community Liaisons are ready to assist you.

Project Specific Hotlines:
Newhope Sewer Replacement – (657) 208-7900
District 6 Trunk Sewer Relief – (714) 679-2088
Western Regional Sewers – (800) 274-3983

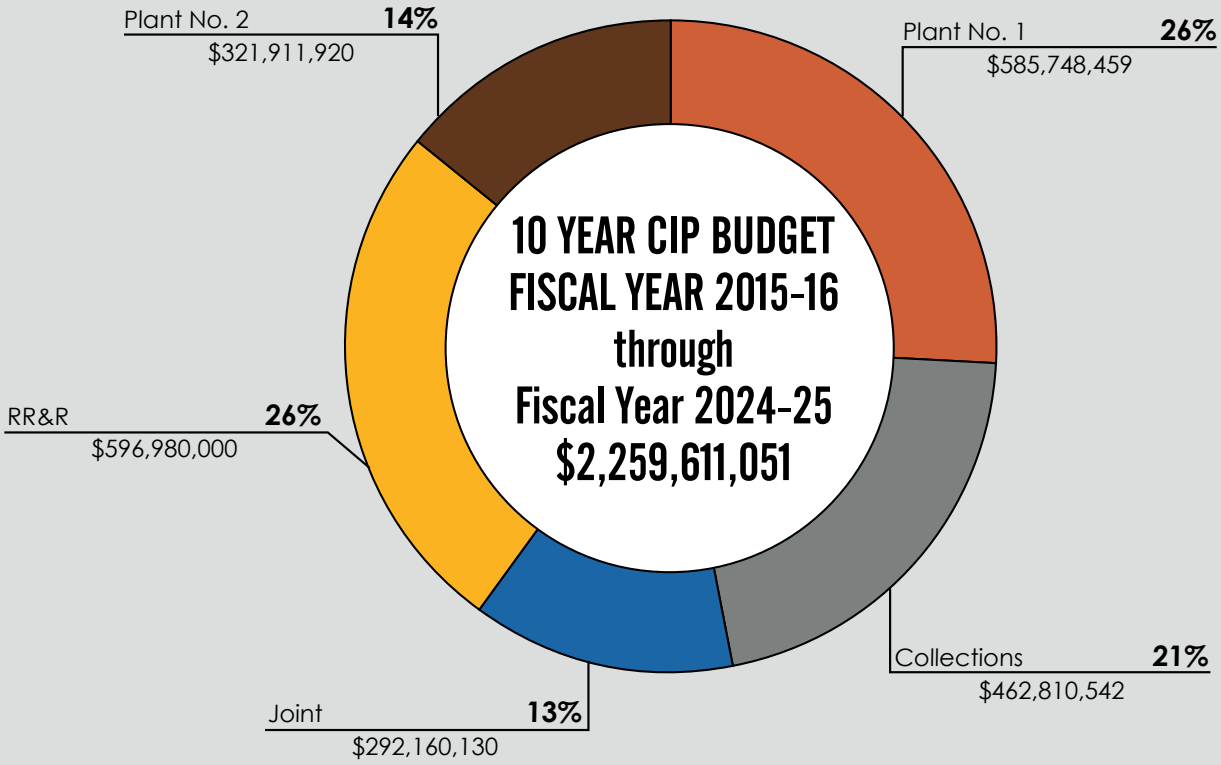
financial data and contract activity

financial data and contract activity

The Capital Improvement Program budget is reviewed and approved on an annual basis. The process begins by evaluating each individual project to validate the scope, schedule, and proposed cost. The budget allotted for each project includes project development and extends through project closeout.

The Engineering CIP budget only focuses and includes projects performed by the Engineering Department. The agency's CIP also includes projects by other OCSD departments which are not included in this report.

The chart below represents the proposed 10 year budget from FY15-16 though FY25-24 for all Engineering projects. The chart includes future projects that are currently not fully scoped or identified which are designated as Replacement, Rehabilitation, and Refurbishment.

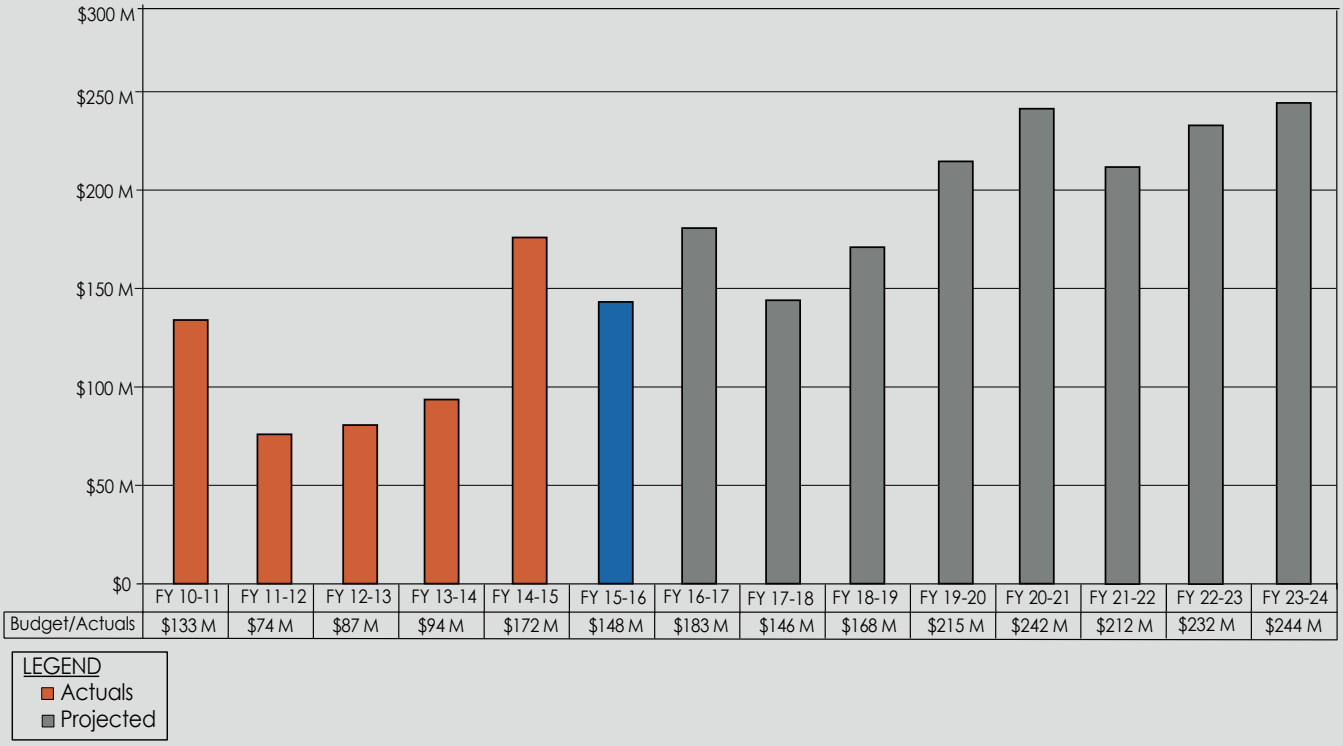


program cash flow

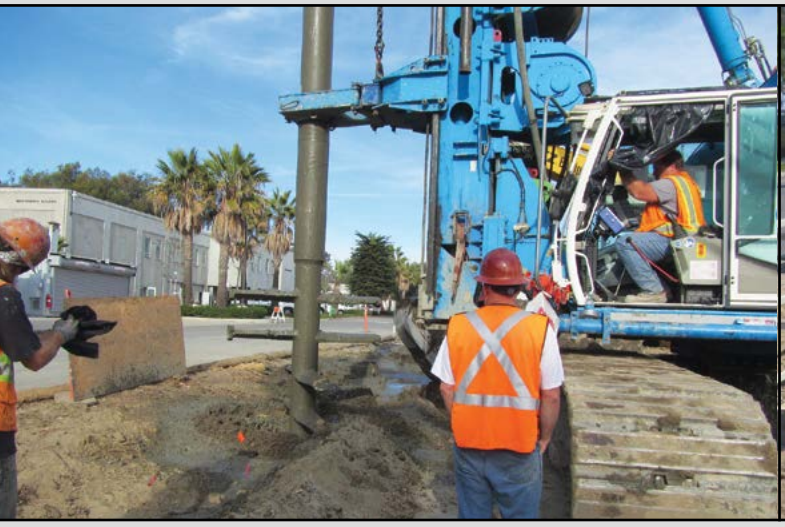
The cash flow demonstrates the actual expenditure for the program versus what was projected. As can be expected with large construction projects, situations are often encountered that can delay the project progression or accelerate the work and thus resulting in varying expenses from those originally planned for.

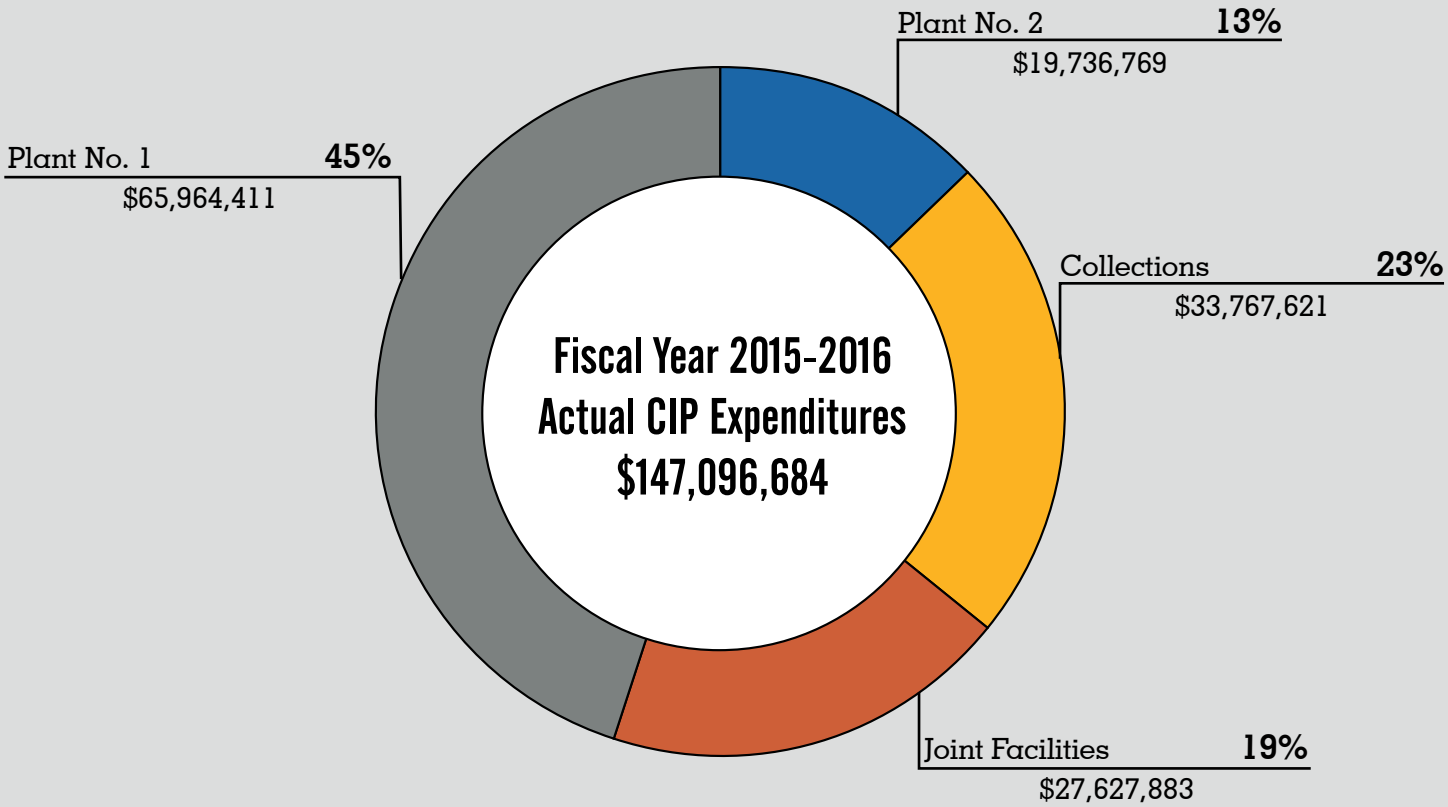
The graph below shows the historical trend for the last few years of the program as well as the projected budget for the next few years.

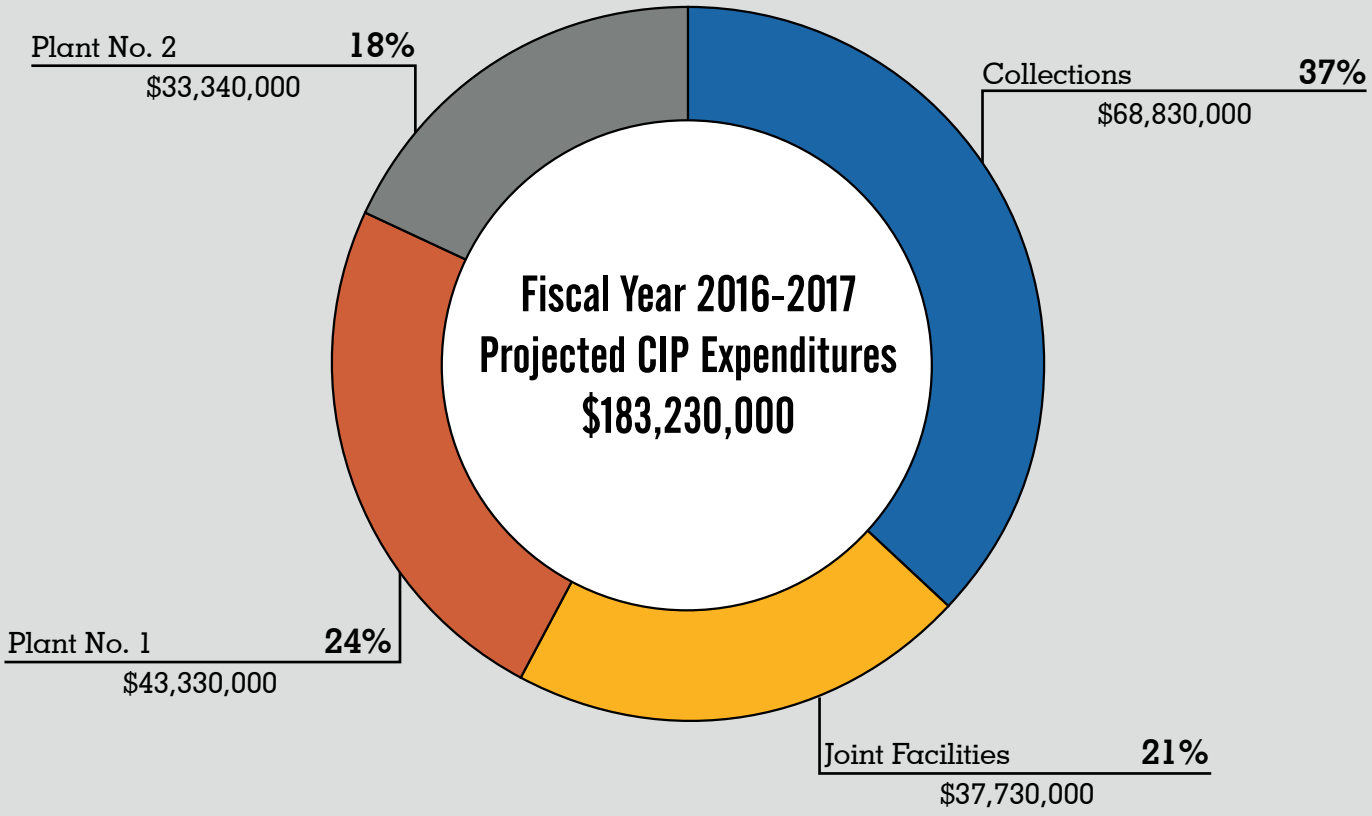
Annual CIP Expenditures



	FY 10-11	FY 11-12	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
Budget/Actuals	$133 M	$74 M	$87 M	$94 M	$172 M	$148 M	$183 M	$146 M	$168 M	$215 M	$242 M	$212 M	$232 M	$244 M




Plant No. 2
13%
$19,736,769
Plant No. 1
45%
$65,964,411
Collections
23%
$33,767,621
Fiscal Year 2015-2016
Actual CIP Expenditures
$147,096,684
Joint Facilities
19%
$27,627,883


Plant No. 2
18%
$33,340,000
Collections
37%
$68,830,000
Fiscal Year 2016-2017
Projected CIP Expenditures
$183,230,000
Plant No. 1
24%
$43,330,000
Joint Facilities
21%
$37,730,000

contract activity

The Engineering Department, with support from the Contracts Division, awarded multiple contracts during the past fiscal year. Approximately $3.6 million in planning studies were awarded, over $39 million for four design contracts were awarded, and seven construction contracts were awarded totaling $40.5 million. We also successfully closed out 15 projects totaling $19.6 million.

The tables below highlights the contracts that were awarded and completed during the fiscal year.

PLANNING STUDIES CONTRACTS AWARDED

City/Plant	Project No.	Project Name	Consultant	Amount of Award	Date of Award
P1/P2	SP-148	Plant Air System Master Plan	CH2M Hill	$187,100	July 2015
OCSD service area	PS15-08	Collections Capacity Evaluation Study	ADS Environmental Services	$330,000	October 2015
OCSD service area	PS15-08	Collections Capacity Evaluation Study	Brown and Caldwell	$37,230	November 2015
P1/P2	PS15-01	Biosolids Master Plan	Black & Veatch	$2,965,556	December 2015
P1	PS15-09	Wastehauler and Fueling Stations Relocation Study	Black & Veatch	$99,954	February 2016

DESIGN CONTRACTS AWARDED

City	Project No.	Project Name	Consultant	Amount of Award	Date of Award
Seal Beach	3-62	Seal Beach Pump Station Rehabilitation	MWH Americas, Inc.	$6,917,175	July 2015
Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, County of Orange	3-64	Rehabilitation of Western Regional Sewers	AECOM Technical Services, Inc.	$17,639,250	January 2016
Fountain Valley	P1-128	Headquarters Complex, Site and Security, and Entrance Realignment Program	HDR	$11,785,708	June 2016
Huntington Beach	P2-107	SCADA System and Network Upgrades	Brown and Caldwell	$2,818,197	January 2016

CONSTRUCTION CONTRACTS AWARDED

City	Project No.	Project Name	Consultant	Amount of Award	Date of Award
Tustin/Irvine	7-37	Gisler - Red Hill Trunk Improvements - Reach B	Kiewit Pacific Company	$15,432,000	December 2015
Fullerton/Anaheim	2-72	Newhope-Placentia Trunk Replacement	Trautwein Construction	$21,134,650	February 2016
Fountain Valley	FE12-10	IT Server Room Cooling Improvements	ODC Engineering and Technology	$281,000	July 2015
Huntington Beach	FE14-06	Plant No. 2 Repairs to Air Dampers at OOBS	OConnell Engineering & Construction, Inc.	$45,800	October 2015
Huntington Beach	FE13-04	Plant No. 2 Trickling Filter Chemical Odor Control	Kiewit Pacific Co.	$2,514,000	November 2015
Huntington Beach	FE14-03	Rehabilitation of Digester Mixing Pumps at Plant No. 2 Digesters E, H, R, S, and T	Tharsos, Inc.	$594,000	December 2015
Fountain Valley	FE14-04	Primary Influent Channels Repair at Plant No. 1	Jamison Engineering	$514,072	March 2016

CONSTRUCTION CONTRACTS COMPLETED			
City	**Project No.**	**Project Name**	**Consultant**
Santa Ana	1-17	Santa Ana Trunk Sewer Rehab	Charles King Company, Inc.
Fountain Valley	J-125	Programmable Control Panel Upgrades	K&F Electric
Fountain Valley	P1-112	Plant Water System Rehabilitation at Plant No.1	W. M. Lyles Company
Fountain Valley	P1-124	Plant No. 1 Primary Treatment Upgrades	Archer Western Construction
Huntington Beach	P2-101	Plant Water System Rehabilitation at Plant No. 2	W. M. Lyles Company
Huntington Beach	P2-106	Boiler System Rehabilitation and Scrubbers H & I Demolition at Plant No. 2	Irwin Industries
Huntington Beach	SP-129	Oxygen Plant Demolition at Plant No. 2	W. M. Lyles Company
Huntington Beach	FE12-03	WiFi Installation at Plant No. 2	Amtek Construction
Huntington Beach	FE11-02	Huntington Beach Coast Trunk Abandonments	West Tech Contracting
Huntington Beach	FE12-06	84˝ Plant No. 2 PI Lines	SANCON Engineering
Fountain Valley	FE12-02	Plant No. 1 Hazardous Waste Storage Relocation	Fleming Engineering
Fountain Valley	FE14-01	Plant No. 1 Primary Sludge Handling Modifications	Pyramid Building & Engineering, Inc.
Huntington Beach	FE12-08	TF/SC Modifications to Blower Building and Air Piping	Interlog HYM Engineering
Fountain Valley	FE09-04	Plant No. 1 Potable Water System - In and Near City Water Pump Station	ODC Engineering and Technology
Newport Beach	FE12-05	15th St, RPPS and BPPS Fall Protection Improvements	Jamison Engineeering

engineering capital improvement program projects

The tables included in this section consists of all the active projects during the reporting period.

COLLECTION SYSTEMS PROJECTS					
Cities	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
Costa Mesa, Fountain Valley, Santa Ana	1-17	Santa Ana Trunk Sewer Rehab	Hardat Khublall	In Construction	$6,974,000
Yorba Linda	2-41-8	SARI Rock Stabilizers Removal	Hardat Khublall	In Design	$3,743,000
Fullerton	2-65	Newhope - Placentia Trunk Grade Separation Replacement	Adam Nazaroff	In Construction	$5,739,000
Fullerton, Anaheim	2-72	Newhope - Placentia Trunk Sewer Replacement	Adam Nazaroff	In Construction	$99,475,000
Anaheim, Placentia	2-75	Lakeview Grade Separation Project	Wendy Smith	In Construction	$330,000
Anaheim, Placentia	2-76	Tustin Rose OCTA Grade Separation	Wendy Smith	In Construction	$586,000
Seal Beach	3-62	Seal Beach Pump Station Rehabilitation	Adam Nazaroff	In Preliminary Design	$60,840,000
Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach, County of Orange	3-64	Rehabilitation of Western Regional Sewers	Hardat Khublall	In Preliminary Design	$217,069,000
Newport Beach	5-60	Newport Force Main Rehabilitation	Adam Nazaroff	In Construction	$64,000,000
Costa Mesa, Newport Beach	6-17	District 6 Trunk Sewer Relief	Adam Nazaroff	In Design	$7,965,000
Tustin, Irvine, Santa Ana	7-37	Gisler - Red Hill Trunk Improvements - Reach B	Hardat Khublall	In Construction	$25,213,000

RECLAMATION PLANT NO. 1					
Cities	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
Fountain Valley	P1-100	Digester Rehabilitation at Plant No. 1	Anni Larkins	In Construction	$66,650,000
Fountain Valley	P1-101	Sludge Dewatering and Odor Control at Plant No. 1	Anni Larkins	In Construction	$188,328,000
Fountain Valley	P1-105	Headworks Rehabilitation and Expansion at Plant No. 1	Donald Cutler	In Preliminary Design	$274,841,000
Fountain Valley	P1-112	Plant Water System Rehabilitation at Plant No.1	Victoria Pilko	In Close Out	$6,157,000
Fountain Valley	P1-115	Title 24 Access Compliance and Building Rehabilitation Project	Wendy Sevenandt	In Construction	$17,500,000
Fountain Valley, Costa Mesa	P1-123	Trunk Line Odor Control Improvements	Donald Cutler	In Construction	$9,299,000
Fountain Valley	P1-124	Plant No. 1 Primary Treatment Upgrades	Hardat Khublall	In Construction	$9,146,000
Fountain Valley	P1-125	South Perimeter Security & Storm Water Improvements at Plant No. 1	Wendy Sevenandt	In Design	$570,000
Fountain Valley	P1-128	Headquarters Complex, Site and Security, and Entrance Realignment Program	Wendy Sevenandt	In Project Development	$179,070,000

TREATMENT PLANT NO. 2					
Cities	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
Huntington Beach	P2-101	Plant Water System Rehabilitation at Plant No. 2	Victoria Pilko	In Close Out	$3,704,000
Huntington Beach	P2-105	Digester Ferric Chloride System Rehabilitation	Victoria Pilko	Completed	$4,410,000
Huntington Beach	P2-106	Boiler System Rehabilitation and Scrubbers H & I Demolition at Plant No. 2	Wendy Sevenandt	In Close-out	$3,095,000
Huntington Beach	P2-107	SCADA System and Network Upgrades	Donald Cutler	In Preliminary Design	$34,123,000
Huntington Beach	P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	Victoria Pilko	In Design	$38,460,000
Huntington Beach	P2-118	Activated Sludge Aeration Basin Deck Repair at Plant No. 2	Donald Cutler	In Project Development	$2,331,000
Huntington Beach	P2-89	Solids Thickening and Processing Upgrades	Jeffrey Mohr	In Construction	$51,150,000
Huntington Beach	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Richard Birdsell	In Construction	$90,477,000
Huntington Beach	P2-96	Site and Security Improvements at Plant No. 2	Wendy Sevenandt	In Construction	$250,000
Huntington Beach	P2-98	Plant No.2 Primary Treatment System Rehabilitation	Shahrzad Namini	In Project Development	$428,264,000
Fountain Valley, Huntington Beach	SP-129	Oxygen Plant Demolition at Plant No. 2	Victoria Pilko	In Construction	$3,444,000

JOINT FACILITIES PROJECTS					
Cities/Plants	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
P1/P2	J-109	Cengen Cooling Water System Replacement Project	Victoria Pilko	In Close Out	$11,477,000
P2	J-110	Final Effluent Sampler and Building Area Upgrades	Wendy Sevenandt	In Construction	$16,411,000
P1/P2	J-111	Cengen Emissions Control Project	Richard Birdsell	In Construction	$23,820,000
P2	J-117	Ocean Outfall System Rehabilitation	Victoria Pilko	In Preliminary Design	$87,683,000
P1/P2	J-125	Programmable Control Panel Upgrades	Wendy Sevenandt	In Construction	$2,283,000
P1/P2	J-126	Safety Improvement at Plant No. 1 and Plant No. 2	Tom Grant	In Project Development	$9,702,000
P1	J-33-3	Power Monitoring and Control Systems	Wendy Sevenandt	Completed	$10,590,000

FACILITIES ENGINEERING PROJECTS					
Cities/Plants	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
Fullerton	FE15-01	Fullerton Creek Channel Crossing	Rudy Davila	In Project Development	$260,000
OCSD service area	FE15-03	Safety Improvements at all Pump Stations	Richard Birdsell	In Project Development	$2,323,000
Fountain Valley	FE09-04	P1 Potable Water System - In and Near City Water Pump Station	Richard Birdsell	In Construction	$825,000
P1/P2	FE10-20	2011 Miscellaneous Fall Protection Improvements	Richard Birdsell	In Construction	$1,020,000
P1	FE12-10	IT Server Room Cooling Improvements	Richard Birdsell	In Construction	$800,000
P2	FE13-04	Plant No. 2 Trickling Filter Chemical Odor Control	Richard Birdsell	In Construction	$3,386,000
P1	FE14-01	Plant No. 1 Primary Sludge Handling Modifications	Richard Birdsell	In Close-Out	$308,000
P2	FE14-03	Rehabilitation of Digester Mixing Pumps at Plant No. 2 Digesters E, H, R, S, and T	Richard Birdsell	In Construction	$1,170,542
P1	FE14-04	Primary Influent Channels Repair at Plant No. 1	Donald Cutler	In Design	$1,083,000
P1	FE14-05	Plant No. 1 Fleet Services UST Leak Remediation	Richard Birdsell	In Design	$16,906,000
P2	FE14-06	Plant No. 2 Repairs to Air Dampers at OOBS	Richard Birdsell	In Construction	$191,000
P2	FE15-02	Plant No. 2 Control Center Server Room HVAC Upgrade	Richard Birdsell	In Design	$773,000
P1	FE15-04	Plant No. 1 Primary Clarifier Backwash System Demo	Richard Birdsell	In Project Development	$205,998
P2	FE12-04	IT Power Plant No. 2 Ops Center	Richard Birdsell	Completed	254,878
P1	FE10-09	Landscaping and Misc. Improvements Along Ellis Ave. Corridor	Jeff Mohr	Completed	806,670

PLANNING STUDIES					
Cities/Plants	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
P1/P2	PS15-01	Biosolids Master Plan	Jeffrey Mohr	In Project Development	$4,650,000
Huntington Beach	PS15-02	Edinger Pump Station Rehabilitation Study	Hardat Khublall	In Project Development	$940,000
Huntington Beach	PS15-03	Slater Pump Station Rehabilitation Study	Hardat Khublall	In Project Development	$651,000
P1/P2	PS15-06	Seismic Hazard Evaluation at Plant No. 1 and Plant No. 2	Donald Cutler	In Project Development	$2,671,000
Newport Beach	PS15-07	Pressurization and Odor Control Study at Newport Beach	Victoria Pilko	In Project Development	$536,000
OCSD service area	PS15-08	Collections Capacity Evaluation Study	Adam Nazaroff	In Project Development	$4,602,000
P1/P2	PS15-09	Wastehauler and Fueling Stations Relocation Study	Wendy Sevenandt	In Project Development	$203,000
P1/P2	PS15-10	2017 Facilities Master Plan	Eros Yong	In Project Development	$1,000,000
P1	PS15-11	Office Trailer Relocation Evaluation	Wendy Sevenandt	Completed	$35,000
P1	SP-137	Primary Treatment Area Rehabilitation Study	Cindy Murra	Completed	$1,000,000
P1/P2	SP-166	Odor Control Master Plan	Carla Dillon	In Project Development	$1,950,000
P1/P2	SP-173	Effluent Reuse Study	Eros Yong	In Project Development	$3,250,000
OCSD service area	SP-180	Collection System Master Planning	Wendy Smith	Completed	$561,000
P1/P2	SP-148	Plant Air System Master Plan	Donald Cutler	In Project Development	$225,000
Newport Beach	SP-178	Bay Bridge Pumpstation and Force Mains Rehabilitation Study	Adam Nazaroff	In Project Development	$725,000
P1	SP-194	Administrative Facilities Implementation Planning	Wendy Sevenandt	Completed	$782,000
P1/P2	SP-145-1	Facility-Wide Safety Assessment	Eros Yong	Completed	$865,290

RESEARCH PROJECTS					
Plant	**Project Number**	**Project Description**	**OCSD Project Manager**	**Schedule Status**	**Estimate at Completion**
P1 /P2	SP-125-18	Odorants Scrubbing Analytical Protocals	Ted Vitko	Completed	$60,000
P1	SP-125-16	Biogas Scrubbing	Jeff Brown	Completed	$122,000
Outfall/Ocean	SP-125-15	SCCWRP Nutrient Cycling Sampling	George Robertson	In Project Development	$95,000
OCSD service area	SP-125-14	SeweX modeling	MarcoPolo Velasco	Completed	$100,000
P1	SP-125-13	ZAPS Multi-Analyzer	Kim Christensen	Completed	$8,200
P1	SP-125-4	Fuel Cell Demonstration	Jeff Brown	Completed	$105,755

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AWARDS

American Academy of Environmental Engineers
Honor Award for Environmental Sustainability for the CenGen Emissions Control Project

Honor Award for Design for the GWRS Initial Expansion

Association of California Cities - Orange County (ACC-OC)
Golden Hub Award for Newport Beach Outreach Program

American Council of Engineering Companies (ACEC)
Client of the Year

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

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