

# CAPITAL IMPROVEMENT PROGRAM

FISCAL YEAR 2014/15 UPDATE



# Resiliency



# Resiliency



## from the director of engineering

This past fiscal year, we updated the 10-year Capital Improvement Program. This budgeting process identifies and prioritizes the risks we face, and charts a course for the agency to follow for the next two decades. We look at our facilities and infrastructure to make sure we have the capacity and resiliency to meet the demands that are before us. The Capital Improvement Program builds and renews the infrastructure necessary to protect the public health and turn wastewater into valuable resources for those we serve.

Our Capital Improvement Program execution schedule and funding are closely aligned. Our inflation based rate increases are projected to be sufficient to maintain our level of service and renew our infrastructure at the lowest lifecycle cost.

OCSD is committed to finding innovative solutions using technology and ingenuity to the challenging problems we face. Our resiliency is demonstrated with every project we complete. Not only are our facilities strong and reliable, so is our dedicated staff that come into work every day with the commitment to plan, design, and construct the best projects possible.

OCSD has been a leader for 61 years and it is our desire and intent to maintain that leadership by making state-of-the-art improvements that help protect the public health and environment of Orange County. We are committed to excellence and will not stop short of that.

On behalf of the Engineering Department, I would like to thank our Board of Directors and our rate payers for their continued support of our Capital Improvement Program.

Respectfully submitted,



Robert C. Thompson, P.E.  
Director of Engineering  
Orange County Sanitation District



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# information and background





## AGENCY INFORMATION

The Orange County Sanitation District is the regional sewer service provider for the central and northern portion of Orange County. With two treatment plants, 15 pump stations, 580 miles of sewers, and staff that works 365 days a year, OCSD safely collects, treats, recycles, and disposes of wastewater generated by 2.5 million people.

In 1954 when the Sanitation District commenced operations, it was a basic system providing treatment to 30 million gallons of wastewater daily. Today, we have a sophisticated system treating approximately 200 million gallons of wastewater daily with the ability to send 130 million gallons to the Orange County Water District for further processing in the Groundwater Replenishment System. We have converted our operation from a simple wastewater treatment facility to a resource recovery facility capturing, recycling, and reusing the products from the wastewater treatment process.

## CAPITAL IMPROVEMENT PLAN OVERVIEW

We have two plants of approximately 100-acres each; each facility has the capacity to treat over 150 million gallons of wastewater to full secondary treatment standards. We have 15 off-site pump stations throughout our service area, and more than 580 miles of pipe. Our assets are valued at \$6.2 billion. It is our duty and responsibility to ensure that every portion of the system is working at all times. That requires us to actively and consistently monitor, maintain, repair and/or replace the facilities. One missing link to any of these components has the potential to create a huge impact to our communities and the environment.

Our Capital Improvement Program's (CIP) purpose is to create and renew this critical infrastructure. Our CIP is an elaborate program that uses advanced principles to evaluate the condition, capacity, and lifespan of a facility to properly determine the time frame for replacement and/or rehabilitation. Projects are created from these assessments to maintain our everlasting commitment of protecting the environment and public health at the lowest lifecycle cost.

As projects continue to be identified, staff will continue to work with the community, partner agencies, and all the municipalities we service to ensure all are informed of our activities and efforts. We believe in collaborating with stakeholders early on to establish successful projects. It is our intent to protect and enhance our infrastructure with as minimal disruption as possible to others.

Information regarding our CIP and extensive community outreach efforts can be found on our website at [www.ocsewers.com](http://www.ocsewers.com) or by contacting our **Construction Hotline** at **714-378-2965** or [constructionhotline@ocsd.com](mailto:constructionhotline@ocsd.com).



## ENGINEERING HIGHLIGHTS

### Newport Beach Program

Two years ago, OCSD initiated a five-year program for a series of construction projects in the City of Newport Beach. A program was put together to work closely with City staff, residents, business owners, schools, and any other group exposed to the five projects that will be in construction during that period. We realized that five projects in a fairly tight area could be overwhelming for the City as well as the community, as such the Newport Beach Program was put together to help alleviate the impacts. The program's purpose is to build relationships in the community, have a constant flow of communication, and address questions and concerns.

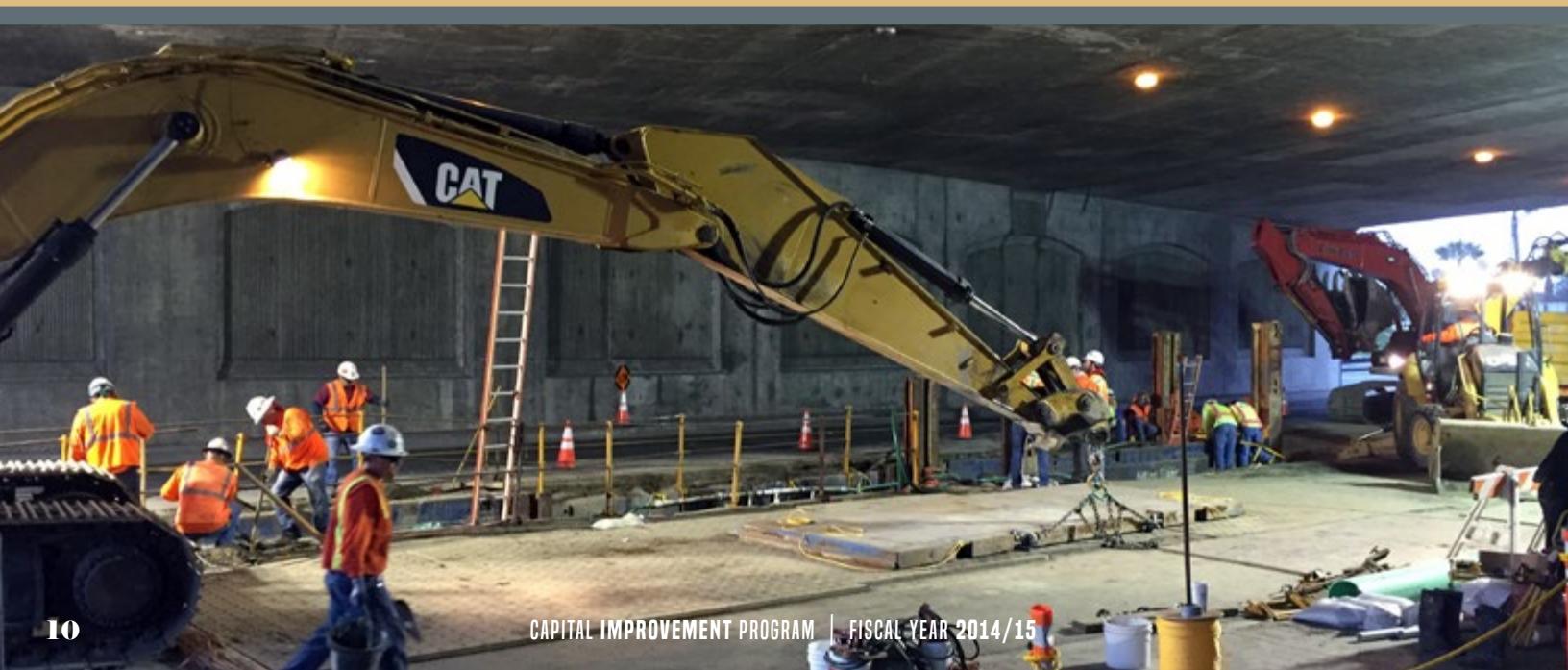
We have completed two of the five projects and are half way through construction of the third, and most complex project which is the Newport Force Main Rehabilitation running along Pacific Coast Highway.

Rehabilitation of the Balboa Trunk Sewer in the Balboa Peninsula was completed in the spring of 2014. The project rehabilitated the 70-year old sewer increasing the lifespan of the line by another 50 years. By relining the pipeline instead of replacing it, the construction period was reduced, which minimized the impact to the residents and businesses in the area.

The Dover Drive Sewer line was replaced in 2014. The sewer that runs between Pacific Coast Highway and Irvine Blvd. was old, too small to handle the current flow, and in bad condition. The entire sewer line was replaced with a new pipe that is expected to be in service for another 50-60 years. We also replaced a water line for the City of Newport Beach to minimize disturbance to the residents by only impacting the area once.

Phase 1 of the Newport Force Main Rehabilitation project began last summer and was completed in May. The force main system consists of two parallel, interconnected pipelines, varying in size from 22 to 36 inches on Pacific Coast Highway between Dover Drive and just north of Superior Avenue. The first phase replaced the south force main, relocating the pipe to the middle of the street. By relocating the pipe, it made construction less impactful on the community and will also make future maintenance easier to accomplish. In September we will commence the second phase which will rehabilitate the northern force main and properly abandon pipes that will no longer be in use.

OCSD is grateful to the community for their cooperation and understanding when unexpected issues arise during construction. The continued support enables us to complete our projects in a safe and effective manner to ensure reliable sewage conveyance.



## AWARDS

### **Orange County Engineering Council**

- 2014 Project Achievement Award: Newport Force Main Rehabilitation Project
- Outstanding Engineer Merit Award: Victoria Pilko
- 2015 Engineering Project Achievement Award - SARI Realignment Project

*(Awarded to Orange County Flood Control District)*

### **American Society of Civil Engineers**

- Construction Project of the Year: Newport Force Main Rehabilitation Project
- Public Sector Engineer of Merit: Victoria Pilko
- Wastewater Conveyance Project of the Year: SARI Realignment Project
- Wastewater Treatment Project of the Year: P2 Headworks

### **American Council of Engineering Companies Orange County Chapter (ACEC-OC)**

- 2015 Award of Excellence: SARI Realignment Project

### **California Geotechnical Engineering Association (CalGEO)**

- 2014-15 Large Project of the Year – SARI Realignment Project  
*(Awarded to Leighton, an engineering consulting firm)*

# planning





The Planning Division is the starting point of our comprehensive Capital Improvement Program. The group is tasked with providing CIP planning for the agency to meet anticipated capacity needs, extend life of our assets, manage risks associated with asset or system failure, take advantage of technology advancements, comply with regulatory changes, and meet necessary level of service and strategic goals.

The division recently completed a 10-year capital improvement plan that documents the projects and efforts to focus on. It was an elaborate effort by the asset engineers to evaluate the assets in their corresponding areas to determine condition, capacity, and future needs. Critical information is gathered, evaluated, and with sound engineering judgment, projects are identified that will cost effectively extend the life of key assets and provide resiliency in our operations. Our asset engineers strive to develop project scopes that are more comprehensive in order to maximize project delivery efficiency and minimize impact to existing operations. In Fiscal Year 2014/15, the Planning Division finalized and defined the scopes of work for seven projects, with project costs totaling over \$700 million. These projects are now managed by our Project Management Office and are either in the project development or design phase.

In 2013, the Board of Directors adopted a Five-Year Strategic Plan for 2014 through 2019 that included eight strategic goals. Three of the eight strategic goals are being addressed by the following Planning projects:

## **ODOR CONTROL MASTER PLAN PROJECT NO. SP-166**

Managing the byproduct of our operations has been a continuous goal for OCSD. We strive to be good neighbors by managing all aspects of the wastewater process. One area that we continuously focus on is odor control. Controlling nuisance odors represents a significant operational and capital expense to our agency. The last comprehensive odor control study was performed in the early 2000s. Since then, a significant number of capital projects have been completed, many of which include new odor control technologies. Earlier this year we initiated a one-year Odor Control Master Plan study to build upon our recent efforts and verify that our investments are current. If needed, the study will identify future process system improvements that will meet the Level of Service intended.

## **EFFLUENT REUSE STUDY PROJECT NO. SP-173**

As we shift from a wastewater treatment facility to a resource recovery facility, we are putting more focus toward enhancing the water supply reliability in our area.

In a joint study between the neighboring agencies, OCSD and the Orange County Water District (OCWD) are looking at ways to support the Groundwater Replenishment System (GWRS) Final Expansion. OCSD's Five-Year Strategic Plan identifies the need to develop a plan for the best utilization of Plant No. 2 effluent water currently discharged to the ocean. As such, the study will investigate utilizing Plant No. 2 as a water source for GWRS and what potential improvements are needed for the treatment and conveyance system needed to deliver the water to OCWD. The study will also identify any outfall impacts and permit modifications attributed to the GWRS Final Expansion. This project began in May 2015, and is anticipated to conclude by summer 2016.

## **BIOSOLIDS MASTER PLAN PROJECT NO. PS15-01**

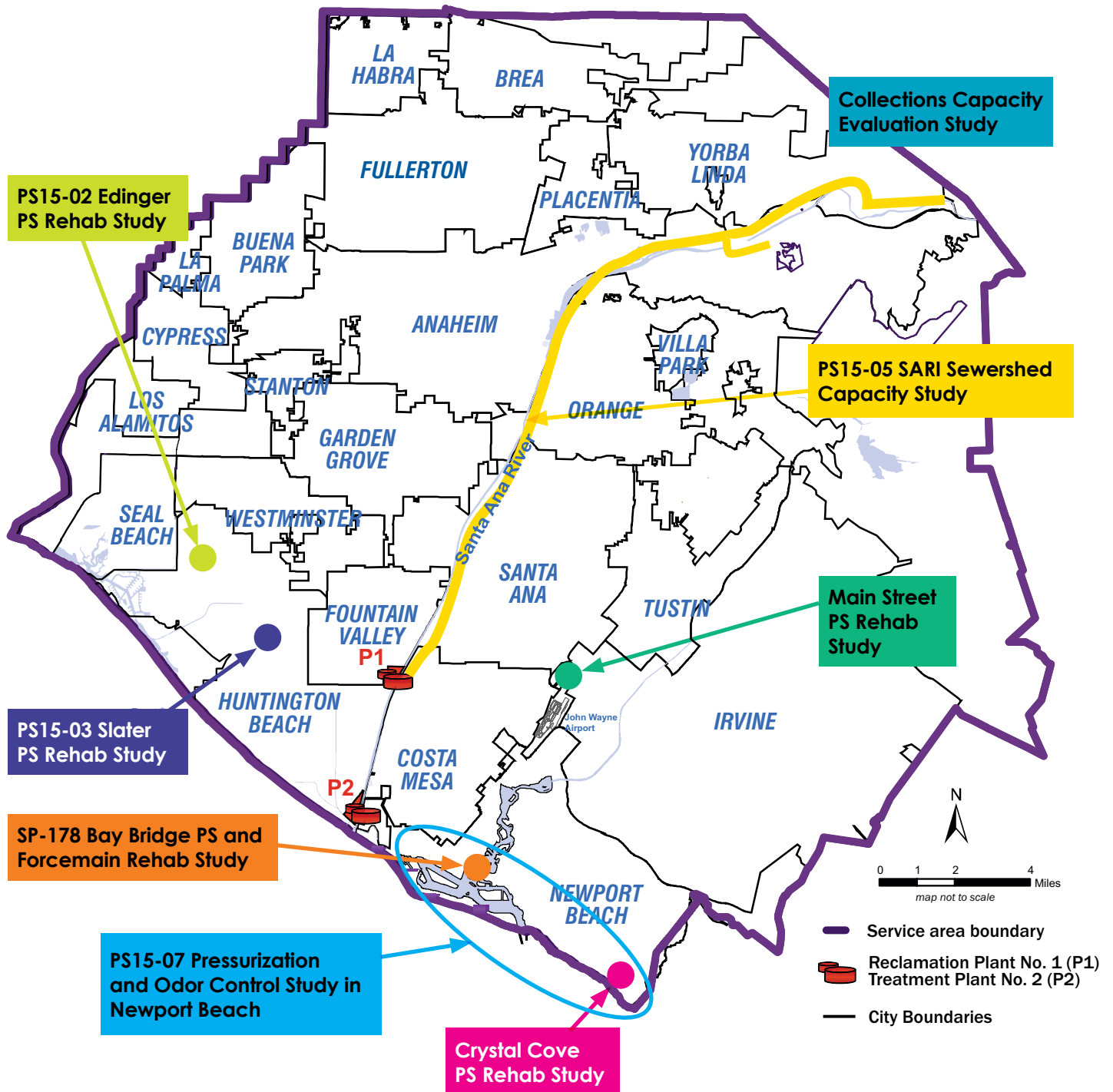
As our solids handling operations continue to evolve, we must continue to evaluate new technologies, new markets, and new options for us to use. Currently we have biosolids used for composting, land application and a small amount going into landfills. The composting contract with Synagro is set to expire in December 2016 making available approximately 225 wet tons per day of Class B biosolids to the market. The last full-scale biosolids management study was completed in 2003 and since then many changes have taken place in our operation, as well as in the marketplace.

A new Biosolids Master Plan will evaluate current and available biosolids treatment management options to assist OCSD in selecting the right option to maintain a sustainable biosolids management program. The study will also identify the onsite and offsite facility options to generate biosolids product that could meet a sustainable biosolids beneficial reuse market, as well as evaluate the existing OCSD biosolids handling facilities; study treatment alternatives, and make recommendation for future capital facilities improvements. The intent of the study is to meet established levels of service, and meet the requirements of our current and future operations. The request for proposal for this study was issued this summer with work scheduled to start early 2016.

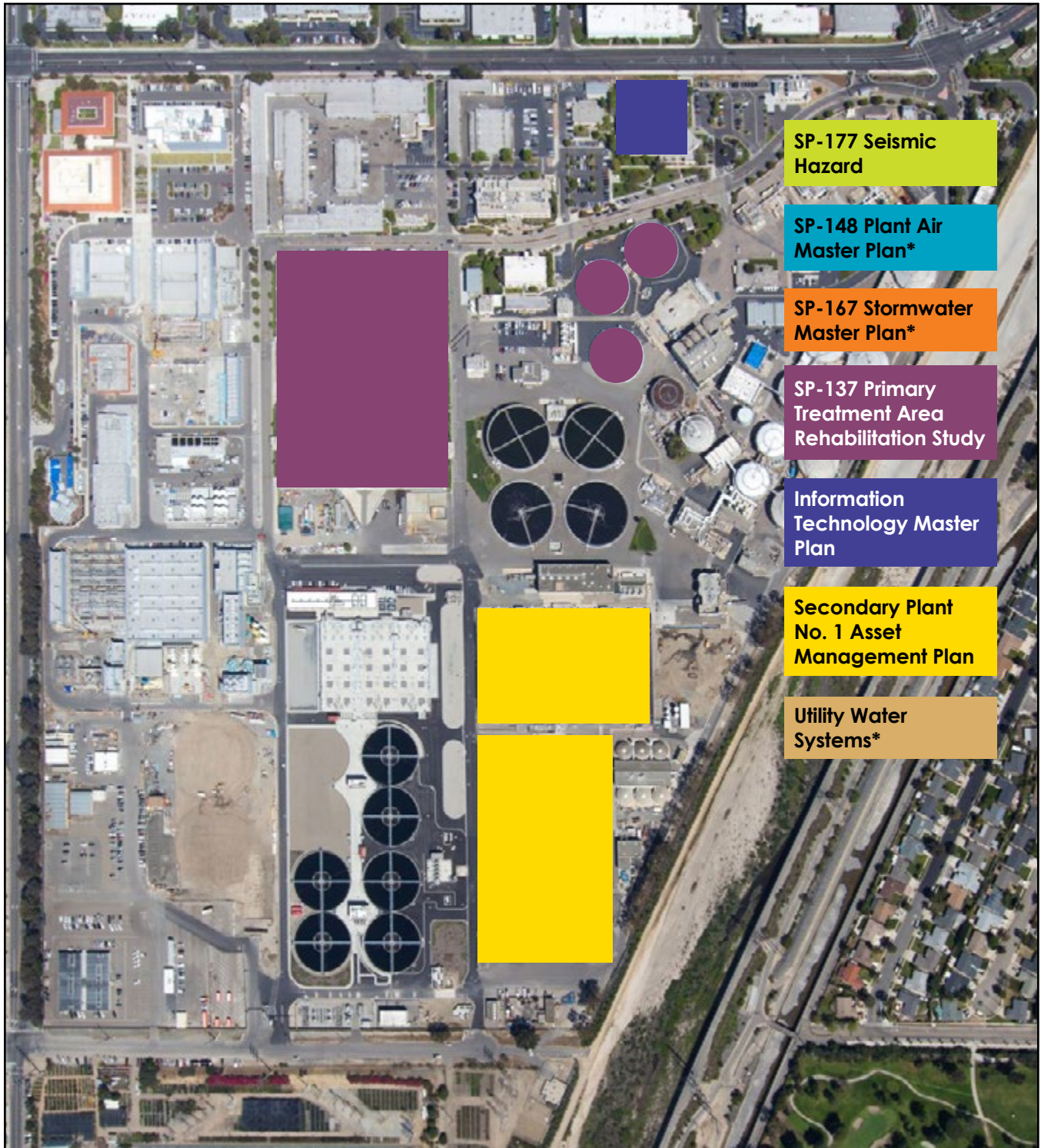
The following pages show some of the other upcoming Planning studies at Plant No. 1, Plant No. 2 and the Collections System. These studies will evaluate specific asset areas and provide recommendations for future CIP projects.



# COLLECTION SYSTEM



# RECLAMATION PLANT NO. 1



*\*These projects will evaluate various facilities at both treatment plants.*

## TREATMENT PLANT NO. 2



*\*These projects will evaluate various facilities at both treatment plants.*



# design and construction





## COLLECTION SYSTEM PROJECTS

The OCSD collection system is the starting point of our entire operation. The system collects flow from 20 cities, 4 special districts, and the unincorporated sections of the County of Orange. Keeping the collection system in excellent shape is imperative to protecting public health and the environment in the County of Orange. If any portion of the system were to fail, we can have spills, sewage backups, temporary loss of service, and much worse. It is our responsibility to keep a close eye on the system by inspecting the sewer lines, cleaning pump stations, making minor repairs, and above all else, monitoring the infrastructure to ensure that repairs and replacements are properly planned and scheduled. Extensive efforts are put forth in our planning and design to ensure that all aspects of the project are meticulously thought out and planned before we hit the streets. We want to make sure that the community we serve is minimally impacted and well informed before any project starts.

Our Community Outreach Program does just that. We have a talented team that works closely with project staff, as well as with the local municipalities to address the concerns of all interested parties. The team strives to build strong, positive relationships with the community by establishing lines of communication early and being available at all times throughout the project.

For information regarding the OCSD Capital Improvement Program and the outreach efforts, please visit our website at [www.ocsewers.com](http://www.ocsewers.com). You may also contact us at [constructionhotline@ocsd.com](mailto:constructionhotline@ocsd.com) or at 714-378-2965. For information on projects taking place in the City of Newport Beach, you may contact our Community Liaison at 714-679-2088.

### **NEWPORT BEACH** **Newport Force Main Rehabilitation** **Project No. 5-60**

The Newport Force Main Rehabilitation Project started last year and it is now 80 percent complete. This project extends along West Coast Highway from Dover Drive to just west of Superior Avenue which is a very busy thoroughfare for the coastal region. The project includes rehabilitation, replacement, and relocation of various portions of two parallel force mains. The criticality of the system and the location make this project extremely complex.

The majority of Newport Beach's sewage flows through these pipelines, so keeping the system operational during construction is imperative, which is why the project was split in two phases.

The first phase was the most challenging and work intensive of the two phases as it included rehabilitation of the south force main and installation of new pipe to increase the capacity of both force mains. The second phase of the project is comprised of rehabilitation of the north force main scheduled to start in September 2015 with a planned completion of May 2016.

The project is scheduled to avoid the summer months and thus minimize impacts to the businesses, homeowners, and commuters. Working closely with the community has and will continue to be very important as the project progresses. Extensive efforts were made during planning and design of the project, as well as during construction to try and identify potential issues as early as possible and mitigate them. Now that the first phase is completed, all the lessons learned will be applied to the second phase to achieve a smoother project conclusion.

## **SEAL BEACH**

### **Seal Beach Pump Station Upgrade and Rehabilitation Project No. 3-62**

The Seal Beach Pump Station was constructed in the early 70s on the corner of Seal Beach Blvd. and Westminster Blvd. In those days, safety codes, and electrical and mechanical requirements were quite different. The system is now facing challenges as its aging condition is causing frequent maintenance. Many electrical, mechanical, and control systems components are becoming obsolete resulting in much more difficult repairs. To address the deficiencies of the facility, most of it will be reconstructed and new equipment installed. New smaller pumps will be installed that can adequately handle the flow entering the pump station; the existing pumps were too large. There are two parallel force mains on Westminster Blvd. that connect the pump station to the OCSD system; the force mains will also be addressed during this project. The northern force main will need to be replaced with pipes to properly match the new pumps installed at the station, while the southern force main will simply need to be rehabilitated to protect it against corrosion. The project is in the preliminary design phase with construction anticipated for 2018.

## **ANAHEIM/FULLERTON**

### **The Newhope-Placentia Trunk Replacement Project No. 2-72**

In a time of severe drought, we are constantly looking at ways of capturing as much water as we can for the Groundwater Replenishment System. Currently, we send the Orange County Water District 120 MGD, that's more than half of what we collect as whole. But we can always use more and the Newhope-Placentia project is looking to do just that. Currently, approximately eight MGD of existing wastewater flows are being diverted into the SARI line instead of being routed to the Newhope-Placentia Trunk Sewer due to capacity limitations. The project will increase capacity in the line to accommodate current and future flows in the line, and thus allow the diversion of water out of the SARI line and into Plant No. 1 for the GWR System. The project will upsize the 50-year old sewer on State College Blvd. between Yorba Linda Blvd. in the City of Fullerton, and Orangewood Avenue in the City of Anaheim.

The project has been divided into two phases to reduce public impact by taking advantage of the Grade Separation Project that is currently in construction along State College Blvd. in the City of Fullerton for the northern portion of the project. Construction on the northern portion will commence in summer 2016 and be completed approximately 10 months later just as the Grade Separation Project is wrapping up as well. The southern portion of the work will follow with construction scheduled for completion by late 2018.

Coordination efforts between the City of Fullerton; Anaheim; California State University, Fullerton; and Caltrans have been ongoing to ensure a smooth construction period. It is our desire to keep the community involved and informed every step of the way; as such our outreach team will be heavily involved with this project and stay in constant communication with the public.





### **COSTA MESA / NEWPORT BEACH**

#### **District 6 Trunk Sewer Relief**

##### **Project No. 6-17**

Construction in Newport Beach continues; the District 6 Sewer Relief project is scheduled to begin in spring 2016. The current trunk line which runs along Newport Blvd. from Pacific Coast Highway to Pomona Street is currently undersized and in poor condition. The sewer will be rehabilitated using a variety of methods including pipe bursting, open-cut pipe replacement/realignment, and cured-in-place relining. Access improvements involving surface modifications will also be done to improve safety and reduce risk when accessing the pipe for maintenance.

### **TUSTIN / IRVINE**

#### **Gisler Redhill System Improvements**

##### **Project No. 7-37**

The Gisler-Redhill System Improvements, Reach B project consists of repairing two parallel sewers, a trunk and an interceptor that were constructed in the 1960s. These sewers experienced significant deterioration due to aging, as well as capacity deficiency due to increased flows from new developments. The project is located primarily along Redhill Avenue from Mitchell Avenue in the City of Tustin to McGaw Avenue in the City of Irvine.

Due to the heavy traffic volume on Redhill Avenue, certain segments of the work will be done during nights and weekends to minimize disruption. Our outreach team has already started working with the community to learn about their concerns and plan accordingly. The team will be in constant communication with the businesses and neighbors throughout the construction process to keep them informed.

Construction is scheduled to start as early as January 2016 with an anticipated completion date of summer 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 of Western Regional Sewers is our largest collection project to date. The project will rehabilitate or reconstruct 16 miles of sewers extending throughout six cities and unincorporated portions of the County of Orange. The entire length of the Orange Western Subtrunk, Los Alamitos Subtrunk, Westside Relief Interceptor, Seal Beach Boulevard Interceptor and West Side Pump Station odor control facilities, force main and wet well will be covered in this effort.

The sewer lines have exceeded their functional life and have developed various deficiencies that allow intrusion of groundwater and, in some cases, have developed hard calcium deposits which make the pipe hard to clean and impede the wastewater flow. Also, portions of both the Los Alamitos Subtrunk and the Westside Relief Interceptor are considered capacity deficient causing the flow to surcharge during wet weather.

The intricacy of this project is evident; as such the project team has met with all the cities involved to inform them of the project, the proposed schedule, and seek their feedback and input as we move along the planning phase. We will continue to work closely with City staff as we move from planning to design and eventually construction. Our current schedule consists of design from 2016-2017 and construction from 2018 through 2022.

**RECLAMATION PLANT NO. 1 PROJECTS**

The Fountain Valley facility collects flow from five major trunk lines totaling approximately 125 million gallons of wastewater a day. A vast majority of the Plant No. 1 flow is sent to the Groundwater Replenishment System for further treatment and reuse allowing us to combat the severe drought our state is facing on a daily basis.

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

**CenGen Emission Control Project  
Project No. J-111**

In January 2016, a new South Coast Air Quality Management District rule comes into effect requiring new emissions control equipment to continue operation of our eight Central Generation



System engines. By the end of the year, enough of the engines will be retrofitted to comply with the new regulation and continue to beneficially reuse all the digester gas produced at both plants to generate electricity and heat our treatment plants. The project will also automate two steam absorption chillers at Plant No. 1 and provide a steam converter at Plant No. 2 to reduce imported natural gas and electricity consumption. The project is scheduled for completion in 2016.

### **Sludge Dewatering and Odor Control Project No. P1-101**

More wastewater flow into Plant No. 1 means more solids to process. By increasing the flow into Plant No. 1 to support the water demand for the recently completed Groundwater Replenishment System expansion project means more solids will need to be processed at Plant No. 1.

Project No. P1-101 is installing three new thickening centrifuges and three new dewatering centrifuges. Ongoing work elements include the mechanical equipment and piping installations in the basement, and we are nearing completion of the structural steel for the Thickening and Dewatering Building.

We are also in the process of installing 20 progressive cavity pumps, piston pumps, centrate pumps, HVAC units, polymer make down units, electric equipment, and other miscellaneous equipment. Rehabilitation of the truck load out silos, foundation work on the odor control facility, and construction of the temporary truck load system are ongoing. Once completed the Project will reduce operational costs by an estimated \$3.62M annually. With 60 percent of the project already completed, full construction completion of the facility and demolition of existing facilities is anticipated for 2017.

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

Most of the Plant No. 1 Headworks facilities are close to 30-years old, with some components much older than that. Given that Headworks are critical water-in, water-out facilities, it is crucial these facilities be rehabilitated and upgraded to meet operational requirements and levels of service, particularly with regard to odor control. Key elements of this project include replacing peak wet weather pumping capacity, replacing and upgrading equipment, providing an all-new 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.

The project started the preliminary evaluation studies in July 2015. Key decisions will be made on the configuration of the project by mid-2016, with construction starting in late 2019 and finishing in 2024.

### **Trunk Line Odor Control Improvements Project No. P1-123**

Being good neighbors is very important to us. We closely monitor dust, noise, and above all, odors resulting from our process. In an effort to continue reinforcing the commitment to improve our odor control system, Project No. P1-123 was created.

The project replaces the existing chemical scrubbers with new bio-scrubbers, providing more reliable and cost-effective treatment of hydrogen sulfide generated in the influent trunk sewers that enter Plant No. 1. Additional improvements under this project include replacing pumping equipment associated with the Air Jumpers; modifications to the foul air inlet ducts associated with some of the scrubbers; and improvements to the odor control system at the Wastehauler Station biofilter. Construction began in late spring and it is expected to be completed in fall 2016.



## TREATMENT PLANT NO. 2 PROJECTS

Our Huntington Beach facility sits on a 100-acre triangular strip of land adjacent to the Santa Ana River and Pacific Coast Highway. Sitting just steps away from the Pacific Ocean is a daily reminder of why our mission of protecting public health and the environment is so important.

Below is a brief description of some of the major Plant No. 2 projects.

### **Ocean Outfall System Rehabilitation Project No. J-117**

The Ocean Outfall Booster Station (OOBS) is the primary pump station and last stop before the water is released through the ocean outfall. The system is approximately 25 years old and in need of rehabilitation; some of the components are becoming obsolete and difficult to service. The



project will assess and rehabilitate the electrical, mechanical, structural, instrumentation, and control systems. It will also assess and redesign the Effluent Pump Station Annex (EPSA) motor cooling system, modify the Standby Power Facility switchgear controls, perform hydraulic analyses for all possible flow scenarios for gravity and outfall pumping, and determine the size of a new outfall pump station which will be used to convey typical dry weather/low flows to the outfalls.

Part of the effort will include developing new operating philosophies for the outfall pump stations and outfall system, inspecting and rehabilitating the interplant pipelines (84 inch and 120 inch), junction boxes and overflow structures; and installing a new fiber optic cable between Plant No. 1 Cen Gen and Plant No. 2 OOBs. The project is currently scheduled for completion in 2018.

### **Solids Thickening and Processing Upgrades Project No. P2-89**

To help manage the additional biosolids resulting from our advanced process, four Dissolved Air Flotation Thickeners (DAFT) are being rehabilitated and two existing holding tanks are being converted to working digesters. DAFTs concentrate the organic solids before being fed to the digester which help reduce excess water and maximize digester capacity.

The first DAFT was placed into service in late 2014 with a greater than expected level of performance and capacity. The two holding digesters will be completed by the end of summer 2015 and the last DAFT should be completed by the end of 2016.

### **Sludge Dewatering and Odor Control at Plant No. 2 Project No. P2-92**

Earlier this year we started construction on the centrifuge dewatering facility. The existing belt press dewatering system is outdated and in need of replacement which led to the technologically superior solution of replacing it with a centrifuge based facility. The new system will remove a greater amount of water from the sludge resulting in reduced hauling costs. It will also include a new updated odor control facility.

Once fully constructed, the belt press system will be demolished and the new centrifuges will go into service. Project completion is scheduled for early 2019.

### **Plant No. 2 Primary Treatment System Rehabilitation Project No. P2-98**

Next on the list of repairs is the primary treatment system. The facility was built between 1960 and 1985 and as such, many of the structures are either in need of rehabilitation or in need of complete replacement. The work will increase the life of the critical assets, improve services of other areas in the plant, and meet the established level of service goals.

The processes affected, including the electrical and utility systems consist of: primary distribution structures, influent pipes, primary clarification basins and its components, effluent pipes, primary effluent pump station, and primary system odor control system.

Earlier this year, phase 1 began which is the project development study, next summer phase 2 will commence which is the preliminary and final design.



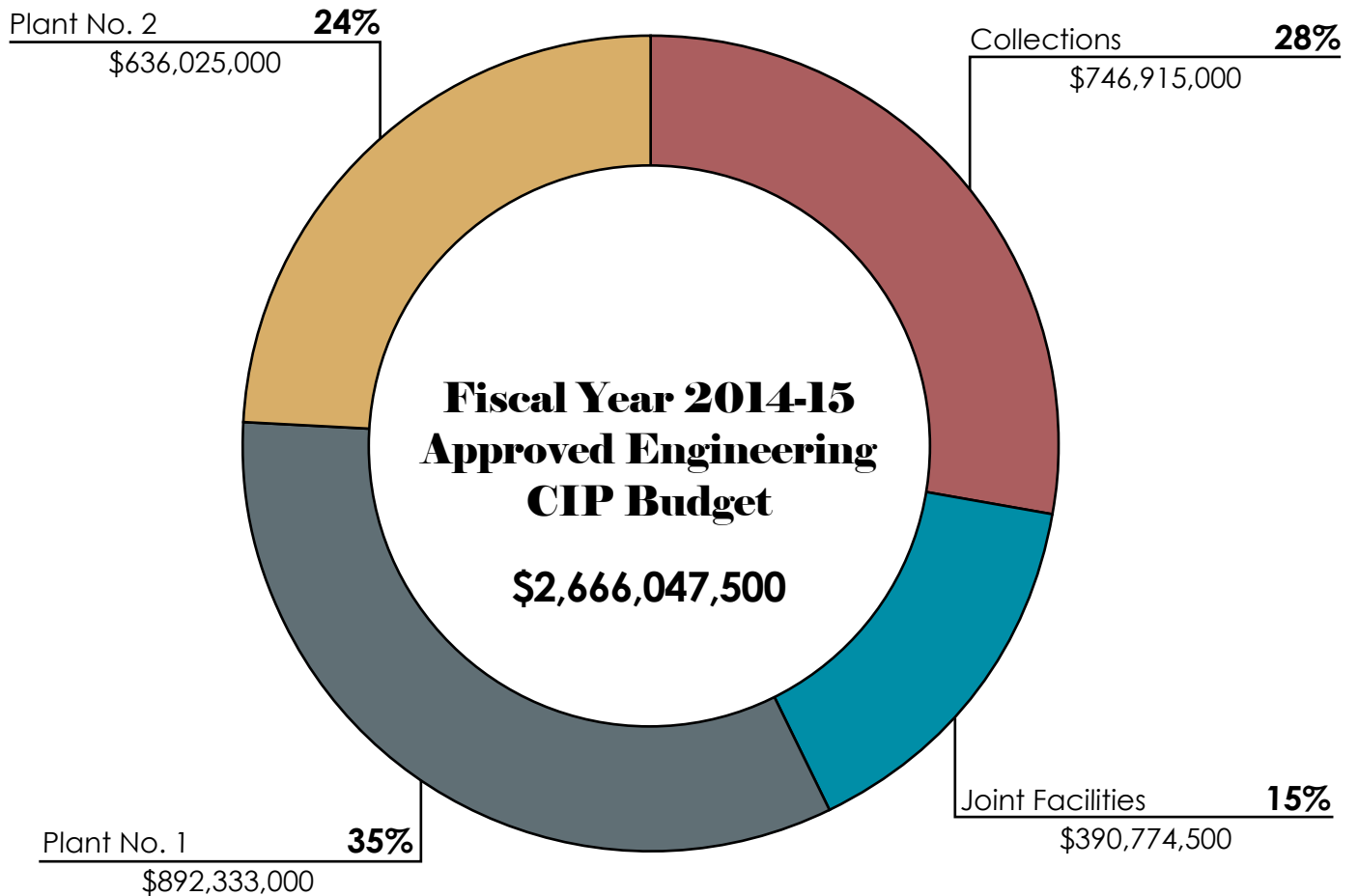
# financial data and contract activity



## FINANCIAL DATA AND CONTRACT ACTIVITY

Every year, the Engineering Department goes through an intense validation process which reviews each individual project to validate the scope, schedule, and budget. The intent behind the process is to ensure each project is properly and accurately budgeted so the funds are available as the project moves forward. It takes several months to crunch all the numbers and come up with a final dollar amount.

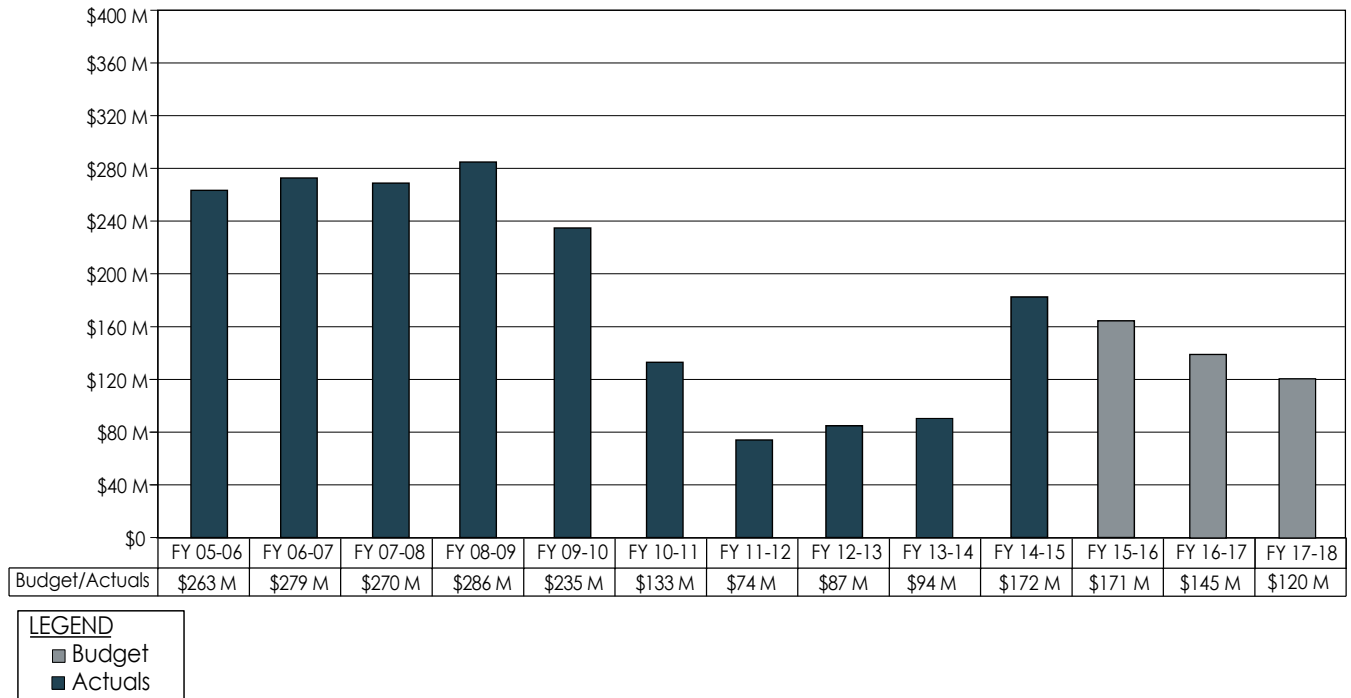
The financial information provided below and in the pages that follow is for the Engineering Department's Capital Improvement Program only. The agency's CIP also includes projects by other OCSD departments; however, that information is not included in this report.

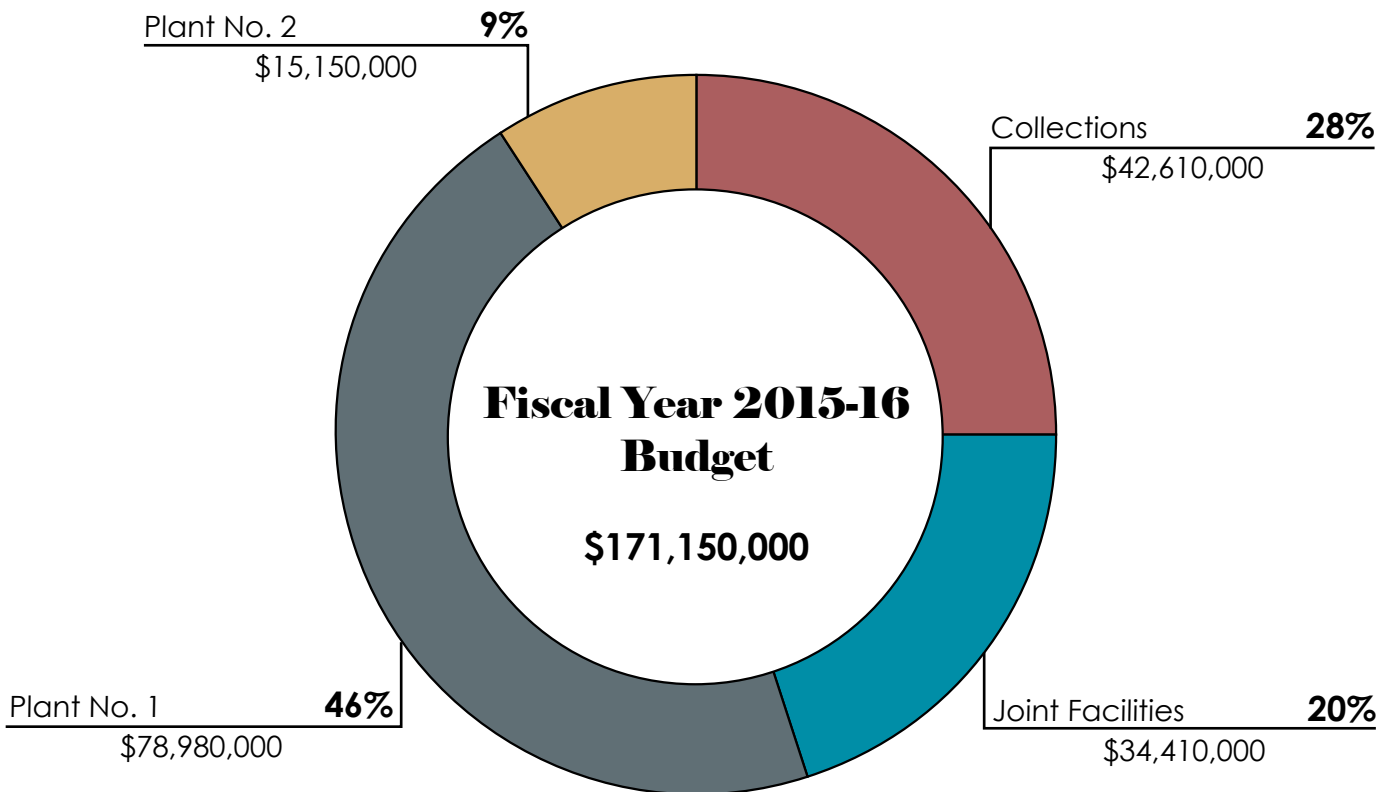
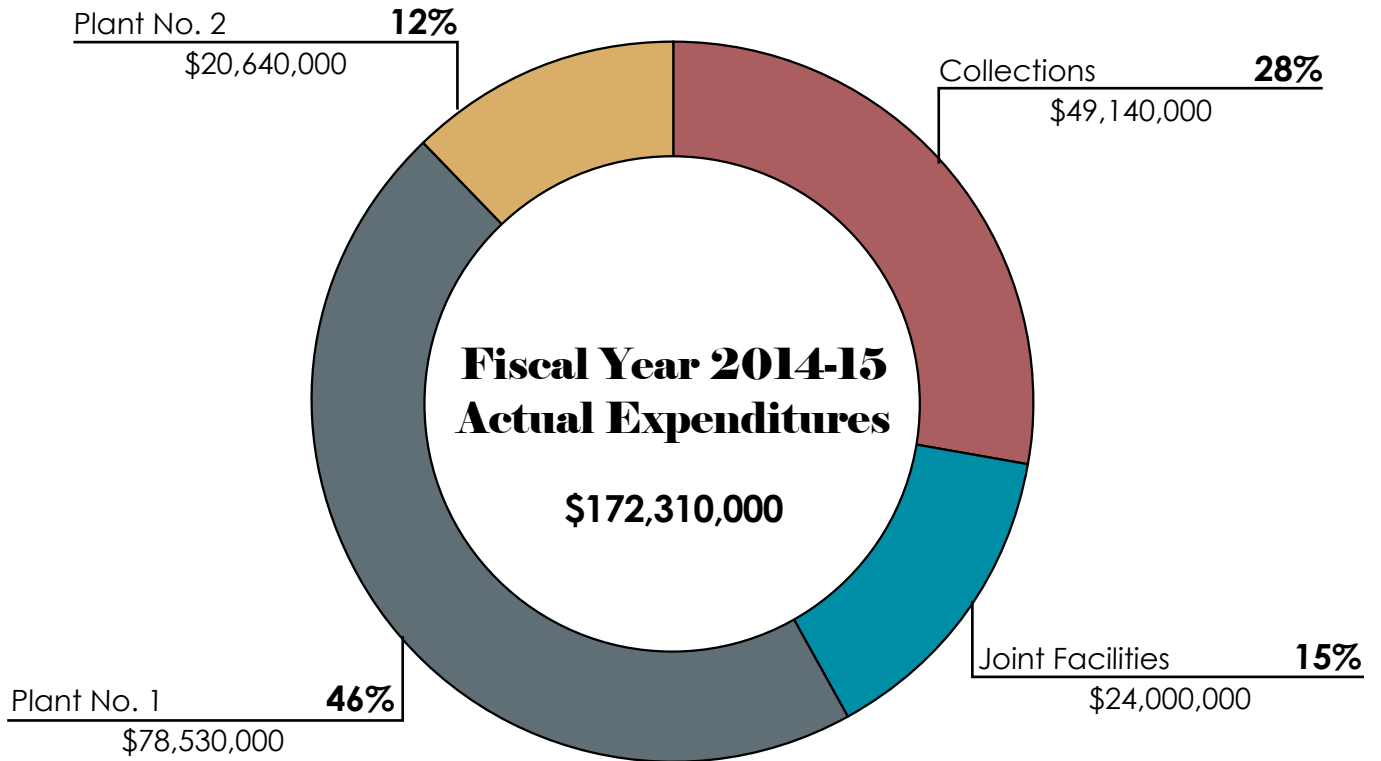


## PROGRAM CASH FLOWS

The program cash flow showcases the actual expenditures for the year versus what was budgeted. The table below shows the actual expenditures for the last ten years of the program as well as the projected budgeted amount for the next three years.

### Cash Flow Budget and Actual Totals by Fiscal Year





## CONTRACT ACTIVITY

The Engineering Department, in collaboration with the Contracts Division, awards multiple construction and design contracts every year. In fiscal year 2014-15, over \$45 million in design and planning study contracts were awarded; \$74.5 million in construction contracts were awarded as well. During this same time, five construction projects were completed totaling almost \$19 million.

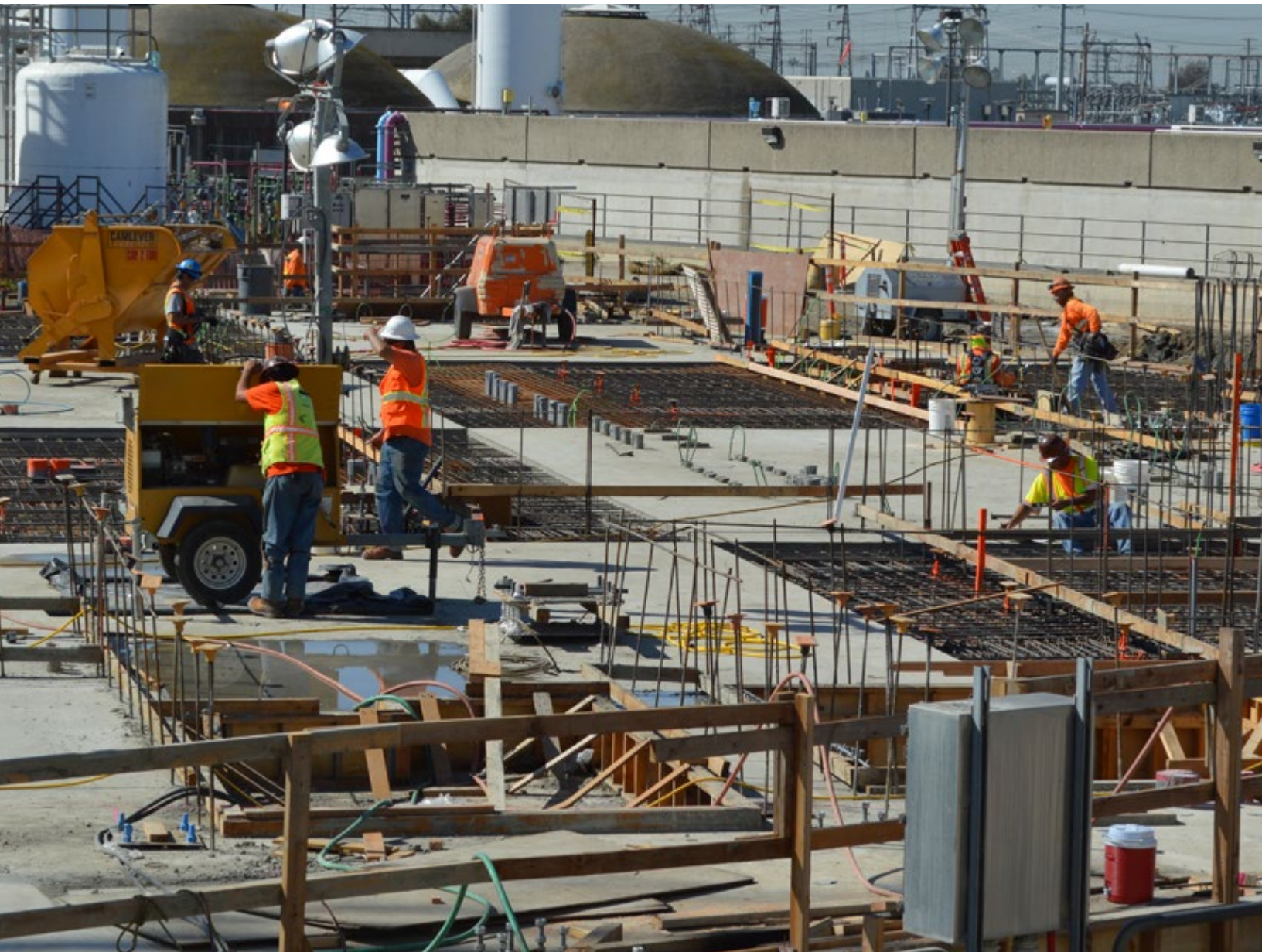
The table below highlights the contracts that were awarded and completed during the fiscal year.

PLANING STUDY AND DESIGN CONTRACTS AWARDED THIS FISCAL YEAR					
City	Project No.	Project Name	Consultant	Amount of Award	Date of Award
YL	2-41-8	SARI Rock Stabilizers Removal Environmental Services	RBF CONSULTING, INC.	\$172,917	5/6/2015
Anaheim, Fullerton	2-72	Newhope-Placentia Trunk Replacement	Lee & Ro	\$8,468,232	10/22/2014
FV, HB	J-110	Final Effluent Sampler and Building Area Upgrades	Atkins North America, Inc.	\$611,307	12/17/2014
FV, HB	J-117	Ocean Outfall System Rehabilitation	Brown and Caldwell	\$6,788,015	2/25/2015
FV	P1-105	Headworks Rehab. and Expansion at Plant No. 1	Carollo Engineers	\$17,528,957	5/27/2015
FV	P1-123	Trunk Line Odor Control Improvements	Carollo Engineers	\$529,970	4/22/2015
FV	P1-125	South Perimeter Security & Storm Water Improvements at Plant No. 1	CH2M Hill	\$567,003	4/22/2015
HB	P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	MWH AMERICAS, INC.	\$2,443,316	10/22/2014
HB	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Brown and Caldwell	\$4,798,328	12/17/2014
FV, HB	SP-129	Oxygen Plant Demolition at Plant No. 2	Hazen and Sawyer	\$152,450	9/3/2014
FV, HB	SP-166	Odor Control Master Plan	CH2M Hill	\$790,285	6/24/2015
FV, HB	SP-173	Effluent Reuse Study	CDM Smith	\$2,008,510	4/22/2015
NB	SP-178	Bay Bridge Pump Station and Force mains Rehabilitation Study	RBF CONSULTING, INC.	\$475,308	9/24/2014

CONSTRUCTION CONTRACTS AWARDED THIS FISCAL YEAR					
City	Project No.	Project Name	Consultant	Amount of Award	Date of Award
FV, NB	J-110	Final Effluent Sampler and Building Area Upgrades	Shimmick Construction	\$9,716,000	1/28/2015
FV, NB	J-125	J-125 Programmable Control Panel Upgrades	K&F Electric	\$1,067,774	7/23/2014
FV	P1-115	Title 24 Access Compliance and Building Rehabilitation Project	Stronghold Engineering, Inc.	\$7,323,217	7/23/2014
FV	P1-123	Trunk Line Odor Control Improvements	Environmental Construction Inc.	\$5,344,626	4/22/2015
HB	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Shimmick Construction	\$49,850,000	11/19/2014
	SP-129	Oxygen Plant Demolition at Plant No. 2	W.M. Lyles Co.	\$1,214,105	10/22/2014

## CONSTRUCTION CONTRACTS COMPLETED THIS FISCAL YEAR

City	Project No.	Project Name	Consultant	Amount of Award
HB	P2-105	Digester Ferric Chloride System Rehabilitation	ODC Engineering and Technology	\$1,694,000
FV, HB	J-33-3	Power Monitoring and Control Systems	Morrow Meadows Corp.	\$3,984,600
NB	5-63	Dover Drive Trunk Sewer Relief	Mike Bubalo Construction Company, Inc.	\$6,189,000
FV	P1-112	Plant Water System Rehabilitation at Plant No.1	W. M. Lyles Company	\$3,743,000
NB	5-47	Rehabilitation of Balboa Trunk Sewer	Charles King	\$3,313,100





# engineering capital improvement program projects



The table below includes all the projects that were active during the 2014-15 fiscal year, as well as the future projects the Planning Division will issue in the upcoming year.

COLLECTION SYSTEMS PROJECTS					
Cities	Project Number	Project Description	OCSD Project Manager	Schedule Status	Estimate at Completion
CM, FV, SA	1-101	Raitt and Bristol Street Sewer Extension	Wendy Smith	Future	\$5,319,000
CM, FV, SA	1-17	Santa Ana Trunk Sewer Rehab	Hardat Khublall	In Construction	\$7,676,000
HB	11-25	Edinger Bolsa Chica Trunk Improvements	Wendy Smith	Future	\$5,159,000
HB	11-33	Edinger Pumping Station Upgrade and Rehabilitation	Wendy Smith	Future	\$8,880,000
HB	11-34	Slater Avenue Pump Station Rehabilitation	Wendy Smith	Future	\$9,729,000
YL	2-41	SARI Realignment	Hardat Khublall	In Close-Out	\$11,404,000
YL	2-41-7	Santa Ana River Interceptor (SARI) Inspection & Mitigation	Hardat Khublall	Completed	\$630,000
YL	2-41-8	SARI Rock Stabilizers Removal	Hardat Khublall	In Project Development	\$3,092,000
Orange	2-49	Taft Branch Improvements	Wendy Smith	Future	\$1,928,000
Fullerton	2-65	Newhope - Placentia Trunk Grade Separation Replacement	Adam Nazaroff	In Construction	\$5,966,000
Anaheim, Fullerton	2-72	Newhope-Placentia Trunk Replacement	Raul Cuellar	In Preliminary Design	\$104,890,000
Fullerton	2-73	Yorba Linda Pump Station Abandonment	Wendy Smith	Future	\$4,158,000
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
Anaheim, Placentia	2-77	Orangethorpe OCTA Grade Separation	Wendy Smith	In Construction	\$3,900,000
Buena Park	3-60	Beach Trunk/Knott Interceptor Sewer Relief	Wendy Smith	Future	\$118,678,000
Seal Beach	3-62	Seal Beach Pump Station Rehabilitation	Adam Nazaroff	In Project Development	\$62,041,000
Anaheim, BP, Cyp, Los Al	3-64	Rehabilitation of Western Regional Sewers	Hardat Khublall	In Project Development	\$112,222,000
NB	5-47	Rehabilitation of Balboa Trunk Sewer	Adam Nazaroff	In Close-Out	\$6,842,250
NB	5-60	Newport Force Main Rehabilitation	Carla Dillon	In Construction	\$58,087,000
NB	5-63	Dover Drive Trunk Sewer Relief	Raul Cuellar	In Close-Out	\$14,327,000
NB	5-66	Crystal Cove Pumping Station Upgrade and Rehabilitation	Wendy Smith	Future	\$10,514,000
NB	5-67	Bay Bridge Pump Station Reconstruction	Cindy Murra	Future	\$51,010,000
CM, NB	6-17	District 6 Trunk Sewer Relief	Adam Nazaroff	In Design	\$7,795,000
CM, NB	6-19	Southwest Costa Mesa Trunk Sewer	Victoria Pilko	In Preliminary Design	\$14,993,000
Irvine, SA, Tustin	7-37	Gisler - Red Hill Trunk Improvements - Reach B	Hardat Khublall	In Design	\$28,143,000
Tustin	7-60	Browning Subtrunk Sewer Relief	Wendy Smith	Future	\$16,952,000
NB	7-63	MacArthur Pump Station Rehabilitation	Wendy Smith	Future	\$8,762,000
Irvine	7-64	Main Street Pump Station Rehabilitation	Wendy Smith	Future	\$37,892,000

## RECLAMATION PLANT NO. 1

Cities	Project Number	Project Description	OCSD Project Manager	Schedule Status	Estimate at Completion
FV	P1-100	Digester Rehabilitation at Plant No. 1	Raul Cuellar	In Construction	\$64,902,000
FV	P1-101	Sludge Dewatering and Odor Control at Plant No. 1	Raul Cuellar	In Construction	\$171,978,000
FV	P1-102	New Secondary Treatment System at Plant No. 1	Raul Cuellar	In Close-Out	\$255,340,000
FV	P1-105	Headworks Rehabilitation and Expansion at Plant No. 1	Don Cutler	In Project Development	\$235,273,000
FV	P1-112	Plant Water System Rehabilitation at Plant No. 1	Victoria Pilko	In Construction	\$8,000,000
FV	P1-114	Primary Scrubber Rehabilitation Project at Plant No. 1	Ted Vitko	Future	\$94,228,000
FV	P1-115	Title 24 Access Compliance and Building Rehabilitation Project	Wendy Sevenandt	In Construction	\$17,161,000
CM, FV	P1-123	Trunk Line Odor Control Improvements	Don Cutler	In Design	\$11,170,000
FV	P1-124	Plant No. 1 Primary Treatment Upgrades	Hardat Khublall	In Construction	\$10,317,000
FV	P1-125	South Perimeter Security & Storm Water Improvements at Plant No. 1	Adam Nazaroff	In Preliminary Design	\$5,277,000

## TREATMENT PLANT NO. 2

Cities	Project Number	Project Description	OCSD Project Manager	Schedule Status	Estimate at Completion
HB	P2-101	Plant Water System Rehabilitation at Plant No. 2	Victoria Pilko	In Construction	\$5,070,000
HB	P2-105	Digester Ferric Chloride System Rehabilitation	Victoria Pilko	In Construction	\$4,449,000
HB	P2-106	Boiler System Rehabilitation and Scrubbers H & I Demolition at Plant No. 2	Wendy Sevenandt	In Construction	\$3,095,000
HB	P2-107	SCADA System and Network Upgrades	Don Cutler	Future	\$27,839,000
HB	P2-110	Consolidated Demolition and Utility Improvements at Plant No. 2	Victoria Pilko	In Preliminary Design	\$43,984,000
HB	P2-66	Headworks at Plant No. 2	Raul Cuellar	Completed	\$258,184,458
HB	P2-89	Solids Thickening and Processing Upgrades	Jeffrey Mohr	In Construction	\$51,150,000
HB	P2-91-1	Plant No. 2 Digester Facilities Rehabilitation	Sharon Yin	Future	\$47,600,000
HB	P2-92	Sludge Dewatering and Odor Control at Plant No. 2	Richard Birdsell	In Bid and Award	\$86,500,000
HB	P2-96	Site and Security Improvements at Plant No. 2	Wendy Sevenandt	In Bid and Award	\$252,000
HB	P2-98	Plant No. 2 Primary Treatment System Rehabilitation	Dave MacDonald	In Project Development	\$156,029,000

## SPECIAL PROJECTS

Cities	Project Number	Project Description	OCS D Project Manager	Schedule Status	Estimate at Completion
FV, HB	SP-129	Oxygen Plant Demolition at Plant No. 2	Victoria Pilko	In Bid and Award	\$4,051,000
FV	SP-137	Primary Treatment Area Rehabilitation Study	Cindy Murra	In Project Development	\$1,000,000
FV, HB	SP-141	Digester Gas Facilities Study for Plants 1 & 2	Mike Lahlou	In Project Development	\$750,000
FV, HB	SP-145-1	Facility-Wide Safety Assessment	Eros Yong	In Project Development	\$930,000
FV, HB	SP-148	Plant Air System Master Plan	Mike Lahlou	In Project Development	\$340,000
FV, HB	SP-152	Climate Change Impact Study	Cindy Murra	Future	\$400,000
FV, HB	SP-166	Odor Control Master Plan	Ted Vitko	In Project Development	\$1,900,000
FV, HB	SP-167	Stormwater Master Plan	Kevin Hadden	In Project Development	\$700,000
FV, HB	SP-173	Effluent Reuse Study	Cindy Murra	In Project Development	\$3,250,000
NB	SP-178	Bay Bridge Pumpstation and Force Mains Rehabilitation Study	Cindy Murra	In Project Development	\$725,000
BP, Cyp, GG, HB, LH, LP, Los Al, SB, Stanton	SP-180	Collection System Master Planning	Wendy Smith	In Project Development	\$545,000
HB	SP-186	Plant No. 2 Digesters/Boilers Plant Asset Management Plan	Mike Lahlou	In Project Development	\$800,000
FV	SP-194	Administrative Facilities Implementation Planning	Wendy Sevenandt	In Project Development	\$800,000
FV	SP-195	Capital Improvement Program Management Services	Carla Dillon	Future	\$300,000
All Cities	M-FE-C	Master Facilities Engineering Projects - Collections	Carla Dillon	In Construction	\$12,192,000
FV, HB	M-FE-PLANT	Master Facilities Engineering Projects - Plant	Carla Dillon	In Construction	\$35,228,000
FV, HB	J-109	Cengen Cooling Water System Replacement Project	Victoria Pilko	In Close-Out	\$11,337,000
HB	J-110	Final Effluent Sampler and Building Area Upgrades	Wendy Sevenandt	In Bid and Award	\$15,973,000
FV, HB	J-111	Cengen Emissions Control Project	Jeffrey Mohr	In Construction	\$24,950,000
FV, HB	J-112	Outfall Land Section and OOB S Piping Rehabilitation	Victoria Pilko	Completed	\$19,672,140
HB	J-117	Ocean Outfall System Rehabilitation	Victoria Pilko	In Preliminary Design	\$76,000,000
HB	J-120	Process SCADA Replacement	Eros Yong	Future	\$24,680,000
FV, HB	J-121	UPS System Upgrades	Eros Yong	Future	\$7,891,000
FV, HB	J-123	Fall Protection Improvements at Plant Nos. 1 and 2	Hardat Khublall	Completed	\$2,600,000
FV, HB	J-124	Digester Gas Facilities Rehabilitation	Sharon Yin	Future	\$85,870,000
FV, HB	J-125	Programmable Control Panel Upgrades	Wendy Sevenandt	In Construction	\$3,177,000
FV	J-33-3	Power Monitoring and Control Systems	Wendy Sevenandt	In Close-Out	\$10,918,000
FV	J-36-1	Joint GWRS Microfiltration Backwash Redirection	Wendy Sevenandt	Completed	\$360,000
FV, HB	J-98	Electrical Power Distribution System Improvements	Eros Yong	Future	\$35,081,000

## JOINT AND FACILITIES ENGINEERING

Cities	Project Number	Project Description	OCSD Project Manager	Schedule Status	Estimate at Completion
All Cities	M-FE-C	Master Facilities Engineering Projects - Collections	Carla Dillon	In Construction	\$12,192,000
FV, HB	M-FE-PLANT	Master Facilities Engineering Projects - Plant	Carla Dillon	In Construction	\$35,228,000
FV, HB	J-109	Cengen Cooling Water System Replacement Project	Victoria Pilko	In Close-Out	\$11,337,000
HB	J-110	Final Effluent Sampler and Building Area Upgrades	Wendy Sevenandt	In Bid and Award	\$15,973,000
FV, HB	J-111	Cengen Emissions Control Project	Jeffrey Mohr	In Construction	\$24,950,000
FV, HB	J-112	Outfall Land Section and OOBS Piping Rehabilitation	Victoria Pilko	Completed	\$19,672,140
HB	J-117	Ocean Outfall System Rehabilitation	Victoria Pilko	In Preliminary Design	\$76,000,000
HB	J-120	Process SCADA Replacement	Eros Yong	Future	\$24,680,000
FV, HB	J-121	UPS System Upgrades	Eros Yong	Future	\$7,891,000
FV, HB	J-123	Fall Protection Improvements at Plant Nos. 1 and 2	Hardat Khublall	Completed	\$2,600,000
FV, HB	J-124	Digester Gas Facilities Rehabilitation	Sharon Yin	Future	\$85,870,000
FV, HB	J-125	Programmable Control Panel Upgrades	Wendy Sevenandt	In Construction	\$3,177,000
FV	J-33-3	Power Monitoring and Control Systems	Wendy Sevenandt	In Close-Out	\$10,918,000
FV	J-36-1	Joint GWRS Microfiltration Backwash Redirection	Wendy Sevenandt	Completed	\$360,000
FV, HB	J-98	Electrical Power Distribution System Improvements	Eros Yong	Future	\$35,081,000





# board of directors



Anaheim .....	Lucille Kring
Brea .....	Glenn Parker
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Cypress .....	Mariellen Yarc
Fountain Valley .....	Steve Nagel
Fullerton .....	Greg Sebourn
Garden Grove .....	Steve Jones
Huntington Beach.....	Jim Katapodis
Irvine .....	Steven Choi
La Habra .....	Tom Beamish
La Palma .....	Peter Kim
Los Alamitos .....	Richard Murphy
Newport Beach .....	Keith Curry
Orange .....	Teresa Smith
Placentia .....	Chad Wanke
Santa Ana .....	Sal Tinajero
Seal Beach .....	Ellery Deaton
Stanton .....	David Shawver
Tustin .....	John Nielsen
Villa Park .....	Greg Mills

## **SANITARY WATER DISTRICTS**

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Midway City Sanitary District .....	Tyler Diep
Irvine Ranch Water District .....	John Withers
Yorba Linda Water District .....	Robert Kiley
Member of the Board of Supervisors .....	Lisa Bartlett





## CIP ANNUAL REPORT

The CIP Annual Report is created to provide a snapshot of OCSD's Engineering Department's capital projects.

Thank you to management and staff who participated in the production of this report.

**Daisy Covarrubias**, *Senior Staff Analyst*  
**Gregg Deterding**, *Graphics Coordinator*  
**Suzanne Crider**, *Senior Staff Analyst*  
**Marc Brown**, *Principal Staff Analyst*



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