

EXECUTIVE SUMMARY

Fiscal Years 2018-19 and 2019-20

PROPOSED BUDGET

**ADOPTED
JUNE 27, 2018**



Orange County Sanitation District, California

Orange County Sanitation District, California

BUDGET EXECUTIVE SUMMARY

Fiscal Years 2018-19 and 2019-20

OUR MISSION

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

GFOA BUDGET PRESENTATION AWARD



GOVERNMENT FINANCE OFFICERS ASSOCIATION

*Distinguished
Budget Presentation
Award*

PRESENTED TO

**Orange County Sanitation District
California**

For the Biennium Beginning

July 1, 2016

A handwritten signature in black ink, appearing to read 'Jeffrey R. Ennis'.

Executive Director

The Government Finance Officers Association of the United States and Canada (GFOA) presented a Distinguished Budget Presentation Award to the Orange County Sanitation District, California, for its biennial budget for the biennium beginning July 1, 2016.

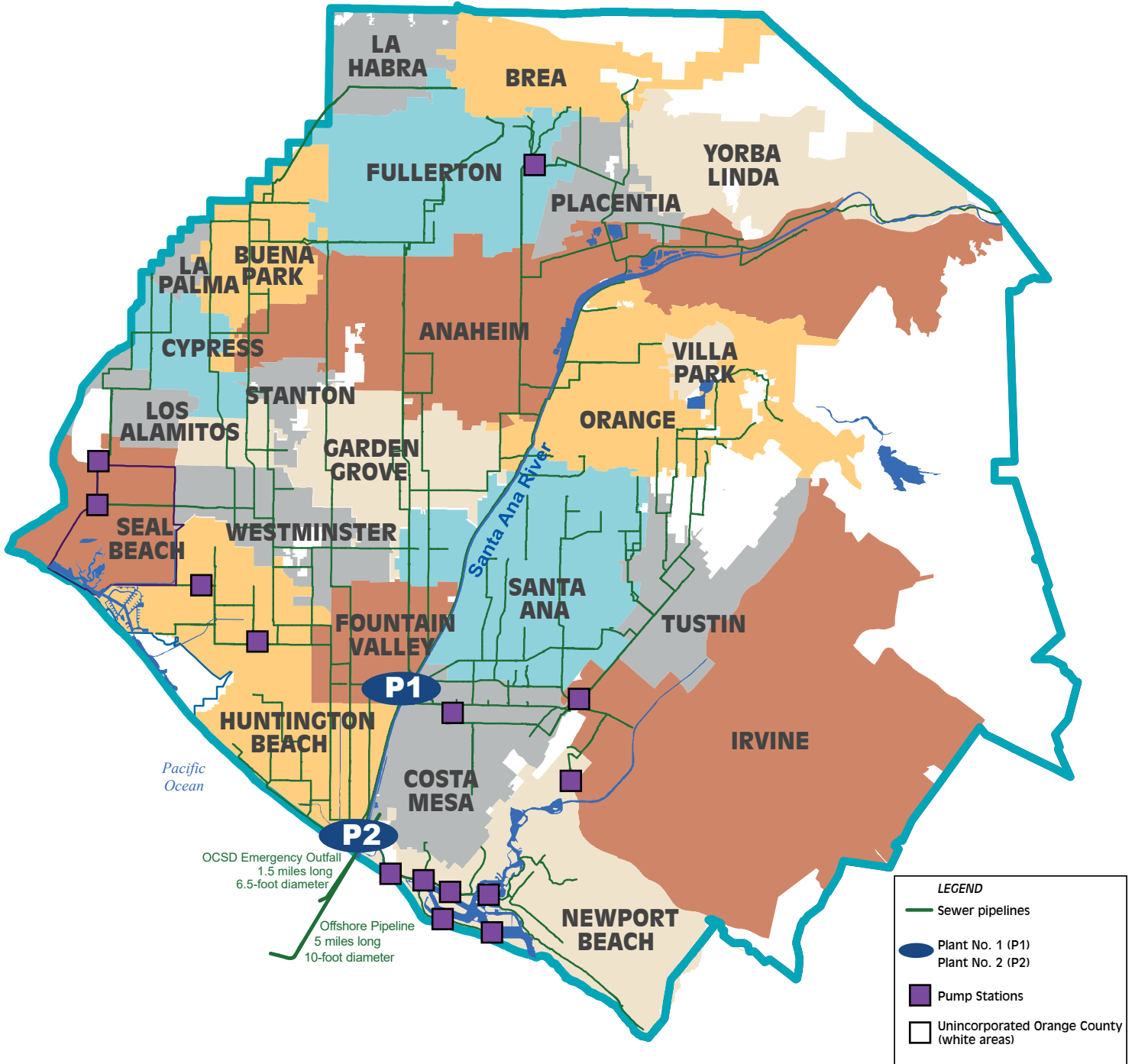
In order to receive this award, a government unit must publish a budget document that meets program criteria as a policy document, as an operations guide, as a financial plan, and as a communication device.

The award is valid for a period of two years only. We believe our current budget continues to conform to the program requirements, and we are submitting it to GFOA to determine its eligibility for another award.

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OCSD SERVICE AREA



BOARD OF DIRECTORS

Agency/Cities

Anaheim
Brea
Buena Park
Cypress
Fountain Valley
Fullerton
Garden Grove
Huntington Beach
Irvine
La Habra
La Palma
Los Alamitos
Newport Beach
Orange
Placentia
Santa Ana
Seal Beach
Stanton
Tustin
Villa Park

Active Director

Denise Barnes
Glenn Parker
Fred Smith
Mariellen Yarc
Steve Nagel
Greg Sebourn
Steve Jones
Erik Peterson
Donald P. Wagner
Tim Shaw
Peter Kim
Richard Murphy
Scott Peotter
Teresa Smith
Chad Wanke
Sal Tinajero
Ellery Deaton
David Shawver
Allan Bernstein
Robert Collacott

Alternate Director

Lucille Kring
Cecilia Hupp
Virginia Vaughn
Stacy Berry
Cheryl Brothers
Jesus Silva
Kris Beard
Mike Posey
Lynn Schott
Michael Blazey
Marshall Goodman
Warren Kusumoto
Brad Avery
Mark Murphy
Ward Smith
David Benavides
Sandra Massa-Lavitt
Carol Warren
Chuck Puckett
Robert Pitts

Sanitary Water Districts

Costa Mesa Sanitary District (CMSD)
Midway City Sanitary District (MCSD)
Irvine Ranch Water District (IRWD)
Yorba Linda Water District (YLWD)

James Ferryman
Charlie Nguyen
John Withers
Phil Hawkins

Robert Ooten
Al Krippner
Douglas Reinhart
Brooke Jones

County Areas

Member of the Board of Supervisors

Michelle Steel

Shawn Nelson

BOARD COMMITTEES

Steering Committee

Greg Sebourn, Board Chair
David Shawver, Board Vice-Chair
Chad Wanke, Chair, Administration Committee
John Withers, Chair, Operations Committee
Ellery Deaton, Member-At-Large
Tim Shaw, Member-At-Large
Donald P. Wagner, Member-At-Large

Administration Committee

Chad Wanke, Chair
Donald P. Wagner, Vice-Chair
James Ferryman
Peter Kim
Richard Murphy
Steve Nagel
Charlie Nguyen
Glenn Parker
Erik Peterson
Teresa Smith
Sal Tinajero
Greg Sebourn, Board Chair
David Shawver, Board Vice-Chair

Operations Committee

John Withers, Chair
Ellery Deaton, Vice-Chair
Denise Barnes
Allan Bernstein
Robert Collacott
Phil Hawkins
Steve Jones
Scott Peotter
Tim Shaw
Fred Smith
Michelle Steel
Mariellen Yarc
Greg Sebourn, Board Chair
David Shawver, Board Vice-Chair

Legislative and Public Affairs Committee

Greg Sebourn, Board Chair
David Shawver, Board Vice-Chair
Allan Bernstein, Member-At-Large
Peter Kim, Member-At-Large
Donald P. Wagner, Member-At-Large
Chad Wanke, Member-At-Large
John Withers, Member-At-Large

GWRS Joint Cooperative Steering Committee

Greg Sebourn
James Ferryman
Steve Jones
(A1) – Donald P. Wagner
(A2) – Phil Hawkins
(A3) – Tim Shaw

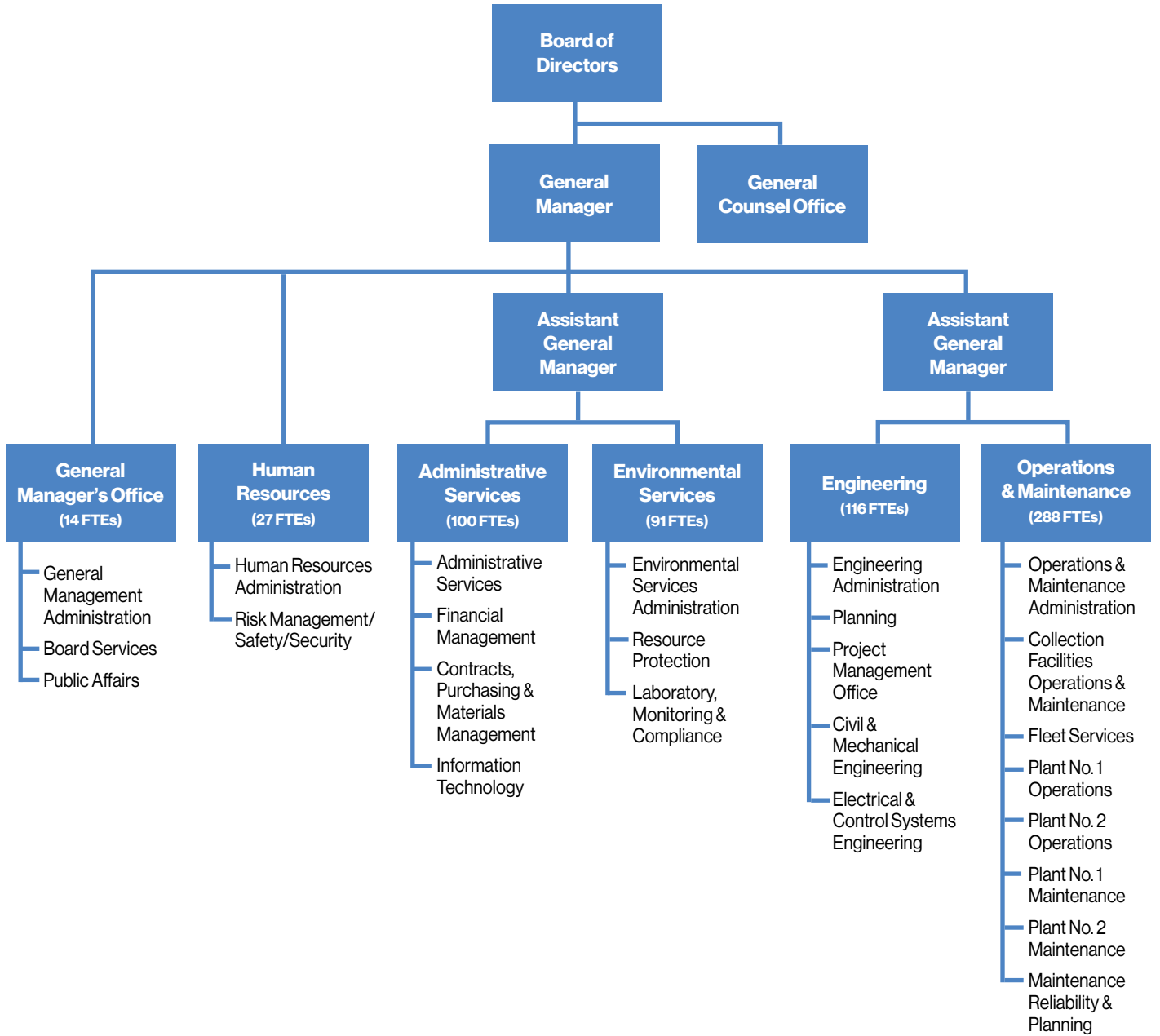
Audit Ad Hoc Committee

Peter Kim
Richard Murphy
Steve Nagel
Glenn Parker

SAWPA Joint Policy Committee

Greg Sebourn
David Shawver
(A) John Withers

ORGANIZATION CHART



ADMINISTRATIVE OFFICIALS

Management Team

General Manager	James Herberg
Assistant General Manager	Robert Ghirelli
Assistant General Manager and Director of Engineering	Robert Thompson
Director of Environmental Services	James Colston
Director of Finance and Administrative Services	Lorenzo Tyner
Director of Human Resources.....	Celia Chandler
Director of Operations and Maintenance	Edward Torres
General Counsel	Bradley Hogin



MESSAGE FROM THE GENERAL MANAGER

June 1, 2018

Honorable Chair and Board Directors:

I am pleased to submit the Orange County Sanitation District's (OCSD) Proposed Budget Update for fiscal years 2018-2019 and 2019-2020. This document lays out the framework of OCSD's activities during the next two years, and serves as a source of information for OCSD's Board of Directors, our ratepayers, and our employees. This budget includes the operational, capital and debt service expenditures necessary to cost-effectively support our mission and execute the Strategic Plan adopted by our Board of Directors. Our work plan for the next two years focuses on:

- **Succession Planning/Restructuring** – In anticipation of the retirement of our Assistant General Manager we have reevaluated our organization to improve and streamline the management structure to best position ourselves for the future. A second Assistant General Manager position was established with responsibility for the Operations and Maintenance (O&M) and Engineering Departments. Upon the retirement of the existing Assistant General Manager in August 2018, his replacement will begin overseeing the Finance & Administrative Services and Environmental Services departments. With this restructuring in place we expect better coordination between departments and the overall Executive Management Team will be streamlined with one less filled position.
- **Infrastructure Reliability and Asset Management** – OCSD's infrastructure must operate continuously day and night. Reliability must be built into all that we do and that includes managing the condition of our \$10 billion in assets to ensure they are running effectively. The O&M and Engineering Departments will work together planning and coordinating near term maintenance activities, major refurbishments and replacements. These maintenance efforts reflect a \$6 million dollar increase in Repairs and Maintenance in this Operating Budget. In addition to all of the maintenance and repair work, we will review our preventative maintenance plans and schedules for accuracy and effectiveness. Improved maintenance plans will provide a more accurate picture of the resources required to complete all preventive maintenance for OCSD assets and will enable us to optimize our staffing resources.
- **Operational Optimization** – OCSD continues to find innovative and efficient ways to do our work. A new administrative headquarters facility is being designed to bring together employees who are currently located in various trailers and offices. To reduce the need for storage space for paper records, a trusted digital system is being implemented to maintain electronic records and speed up locating and processing of documents. Also, the cost of biosolids hauling will be reduced by using centrifuges to dewater our biosolids and produce a drier product.

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- **Expanded Water Recycling** – In partnership with the Orange County Water District (OCWD), our agency recycles enough water to supply the needs of 850,000 people. Having completed a joint feasibility study with OCWD for the ultimate expansion of the Groundwater Replenishment System (GWRS), the two agencies will now embark on construction projects that will increase water recycling for an additional 250,000 people. This expansion will ensure that a potential resource once lost to the ocean will now supply water for over one million people in north and central Orange County.
- **Energy Resource Recovery** – The State of California mandates that local jurisdictions reduce the amount of organic material entering landfills by 75 percent by 2025. With anaerobic digestion facilities already in place, OCSD can help the state meet its goals by receiving food waste to be co-digested with our solids to increase biogas and energy production. OCSD has plans to construct interim and permanent food waste receiving facilities at Plant No. 2 in Huntington Beach.
- **Safety and Security** – Capital projects, maintenance activities, drafting of an implementation plan for a Voluntary Protection Program Certification, and training to address safety in our workplace are included in this budget, as are enhancements to our physical, electronic, and cyber security infrastructure.

While addressing rising treatment and chemical costs, aging infrastructure, and increased regulatory requirements, this budget displays our commitment to efficiency as it includes only minimal staff cost increases; and rate increases averaging only about 1 percent per year.

OCSD will continue to provide wastewater treatment, recycling, sewer and facilities maintenance, ocean monitoring and many other services while keeping rates among the lowest in California. This budget fully supports the goals and level of service included in the Orange County Sanitation District's Strategic Plan and positions us well to proactively manage in the coming years.



James D. Herberg
General Manager
Orange County Sanitation District



FINANCE SUMMARY

FINANCIAL SUMMARY/OVERVIEW & BUDGETARY ISSUES

Budget Overview

Orange County Sanitation District's (OCSD) proposed fiscal year 2018-19 and 2019-20 operating and capital improvement budgets total \$422 million and \$383 million, respectively. The increase in the 2018-19 budget over the 2017-18 projected spending of \$355 million is primarily due to the timing of construction cash outlays, in addition to increases in salaries and benefits, repairs and maintenance, and an increase in the loss on the disposal of obsolete inventory. The decrease in the 2019-20 budget is primarily due to the timing of construction cash outlays as we meet our infrastructure needs. The budget continues to reflect the agency's ongoing efforts to streamline operations.

OCSD's proposed Capital Improvement Program (CIP) budgets for fiscal years 2018-19 and 2019-20 are \$175 million and \$137 million, respectively, net of savings and deferrals. This CIP budget supports collection system, joint works treatment and disposal system improvement projects.

Financing

OCSD uses long-term Certificates of Participation (COP) for financing capital improvements that cannot be completely funded from current revenue. Before any new debt is issued, the impact of debt service payments on total annual fixed costs is analyzed. Total COP indebtedness is currently at \$1.0 billion. No new money debt financings are currently forecasted to assist in the funding of the \$2.7 billion in capital improvements required over the next 10 years.

Staffing

Reflecting the organization's commitment to providing service at the lowest costs, the budget reflects a minimal increase of one authorized full time equivalent (FTE) position for fiscal years 2018-19 and 2019-20 as staffing is proposed at 636 FTE positions in both years. The new position is needed to provide additional support for OCSD's pretreatment program. However, staffing continues to remain lower than the fiscal year 2010-11 approved staffing level of 641 FTE positions.

Personnel costs will increase primarily due to approved increases in salaries and wages for all employee bargaining units based on the existing Memorandums of Understanding.

OCSD will continue to effectively manage these expenses with approximately 23 percent of the budget allocated to employee costs, much less than most other government agencies.

Cost of Treatment

The agency's two treatment plants, located in Fountain Valley and Huntington Beach, process about 185 million gallons of wastewater each day generated by approximately 2.6 million people residing within central and northwest Orange County and the businesses that operate within this service area. The proposed budget to operate, maintain and manage our sewage collection, treatment, and disposal system, including self-insurance requirements, for the next two years is \$164 million and \$163 million.

The cost per million gallons of wastewater treated (an industry-wide performance measurement) is expected to increase \$288, or 13.6 percent, in fiscal year 2018-19 to \$2,413. The increase in the cost per million gallons is due to the increase in the operating budget and a slight decrease in projected flows.

Sewer Service Fees

The 2018-19 and 2019-20 single family residential rates are scheduled to increase by approximately one percent each year to \$335 and \$339, respectively. OCSD's rates are well below the statewide average sewer rate of \$529 as reported in a 2016-2017 survey of 963 agencies in California.

Groundwater Replenishment System (GWRS)

The OCSD Strategic Plan includes water reclamation. With the Orange County Water District (OCWD), OCSD completed the GWRS, the nation's largest water reclamation project, in January 2008.

The original GWRS facility reclaimed 70 million gallons of water a day, eliminating the need to build a second outfall which could cost more than \$200 million. OCSD and OCWD equally shared the expenses of this project and approximately \$44 million in Federal and State grants that were received to offset part of the total costs.

Initial expansion of GWRS increased the production of reclaimed water to 100 million gallons a day.

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This expansion, which was funded entirely by the OCWD, was completed in early 2015. OCSD is directing all reclaimable flows from Plant No. 1 to OCWD in support of providing maximum amounts of specification water for reclamation.

A feasibility study for recycling all of OCSD's reclaimable effluent was completed in May 2016. This study was jointly funded by OCSD and OCWD with a grant from the U.S. Bureau of Reclamation. The feasibility study identified the projects necessary to implement the final expansion of GWRS. The expansion will add an additional 30 million gallons a day (MGD), bringing the total GWRS capacity to 130 MGD of drinking water.

Capital Improvement Program (CIP)

The proposed CIP budget for fiscal year 2018-19, net of savings and deferrals, is \$174.5 million.

Over the next 10 years, OCSD's Capital Improvement Program will:

- Rehabilitate the headworks, primary treatment, solids handling facilities, and utility systems at Plant No. 1.
- Replace a third of the primary treatment and the solids dewatering facilities, and rehabilitate the outfall pumping system at Plant No. 2.
- Construct a new Headquarters Complex.

- Modify existing headworks at Plant No. 2 and construct a new plant water pump station to enable the final expansion of the Groundwater Replenishment System (GWRS).
- Replace or rehabilitate OCSD's aging pump stations and trunk sewers in the collections system.

Projects Driving the CIP

Over the next 24 months, the largest capital cash outlays are:

- Newhope-Placentia Trunk Replacement - \$32.8 million (\$112 million total budget).
- Headworks Rehabilitation & Expansion at Plant No. 1 - \$19.9 million (\$370 million total budget).
- Sludge Dewatering & Odor Control at Plant No. 1 - \$21.3 million (\$200 million total budget).
- Sludge Dewatering & Odor Control at Plant No. 2 - \$20.2 million (\$90 million total budget).
- Ocean Outfall System Rehabilitation - \$25.5 million (\$166 million total budget).
- P1-128 Headquarters Complex & Site Security at Plant No. 1 - \$20.2 million (\$179 million total budget).



FINANCIAL SUMMARY/OVERVIEW & BUDGETARY ISSUES

Operating Budget Increase – \$17.9M

The operations budget for the collection, treatment, and disposal of wastewater is proposed at \$163.6 million, a \$17.9 million (12.3 percent) increase above 2017-18 projected expenditures. In fiscal year 2019-20, it is projected to decrease by \$0.9 million (0.6 percent).

Although some expenses will increase or decrease slightly, the overall increase to the operating budget in 2018-19 over the 2017-18 projected is primarily attributable to five specific areas:

Salaries and Benefits – \$5.6M Increase

Salaries and benefits will increase primarily due to approved increases in salaries and wages for all employee bargaining units, an increase of \$0.9 million (8.7 percent) in group insurance costs, and the addition of one full-time equivalent (FTE) position.

These changes reflect the impacts from existing collective bargaining agreements.

Contractual Services – \$0.9M Increase

Costs for other contractual services are expected to increase by \$0.6 million (21.5%) in 2018-19 to support the Civil Assets Maintenance Program.

In 2019-20, contractual services costs are expected to decrease by \$3.2 million (12.5%) as a result of completing sludge dewatering facilities that will significantly reduce biosolids removal and transportation costs.

Professional Services – \$1.5M Increase

The increase in professional services in fiscal year 2018-19 is to fund repairs to the Sunflower Trunk Line and the comprehensive Civil Assets Maintenance Program.

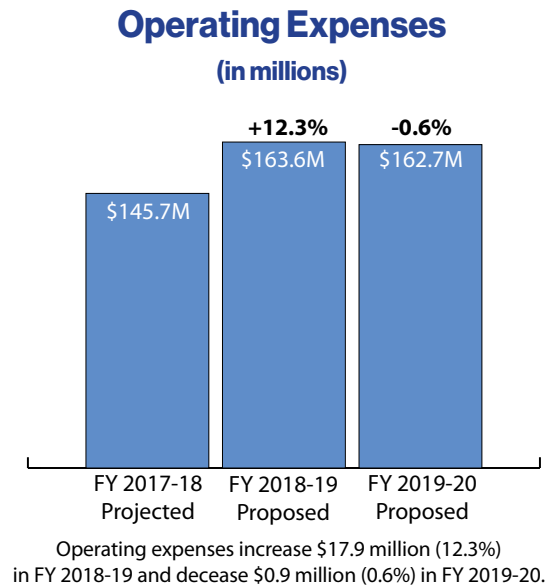
Repairs and Maintenance – \$6.0M Increase

This expense category includes parts and services for repairing aging treatment plant and collection facilities, and reflects base budgets for equipment maintenance as well as out-sourced annual service contracts and maintenance agreements.

The fiscal year 2018-19 budget increase of \$5,966,000 (37.9 percent) is mostly attributable to increases in basic repairs and maintenance costs and overhaul of Central Generation (CenGen) engines.

Other Materials, Supplies, Services – \$1.8M Increase

The increase is primarily due to the restoration of the General Manager's contingency and the contingency for prior year reappropriations, and a loss on disposal of obsolete inventory, partially offset by a reduction in the property and general liability insurance premiums.

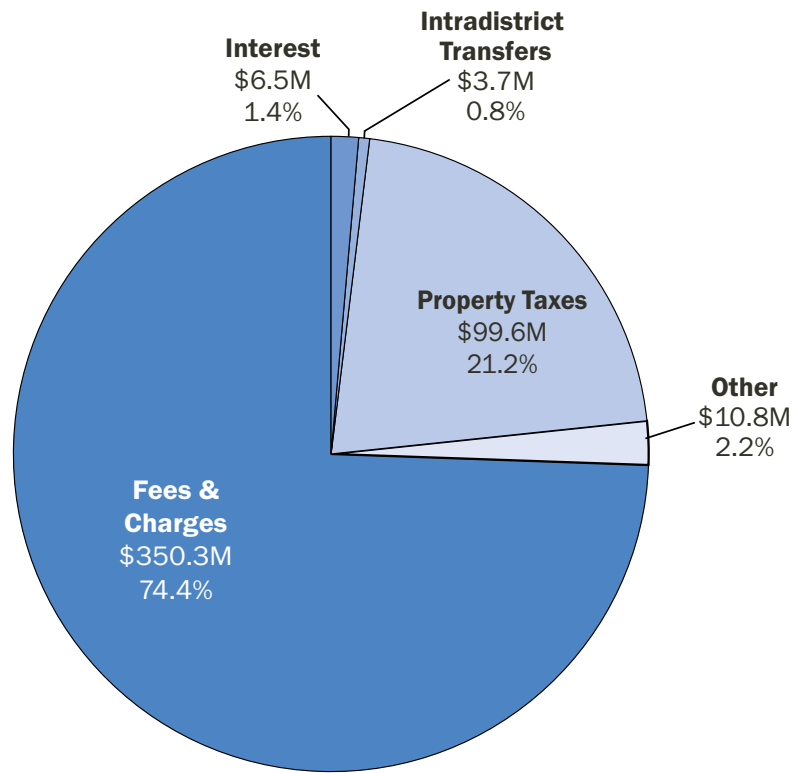


FISCAL YEARS 2018-19 AND 2019-20 BUDGET



FINANCIAL SUMMARY/FUNDING SOURCES BY CATEGORY

WHERE THE MONEY COMES FROM



Funding Sources by Category (in millions)

Category	2016-17 Actual	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Service Fees	\$300.0	\$311.0	\$318.0	\$320.5
Property Taxes	85.7	94.8	99.6	104.5
Permit User Fees	14.2	18.1	18.3	18.5
Capital Facilities Capacity Charges	15.6	14.0	14.0	14.5
Interest	4.2	6.4	6.5	7.2
Intradistrict Transfers	21.7	2.7	3.7	3.5
Other Revenue	5.8	6.2	10.8	9.2
Debt Proceeds	0.0	0.0	0.0	0.0
Total Funding Sources	\$447.2	\$453.2	\$470.9	\$477.9

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

OCSD has a variety of revenue sources available for operating and capital expenses. The major revenue sources are:

General Service Fees – \$318.0M

User fees are ongoing fees for service paid by customers connected to the sewer system.

A property owner, or user, does not pay user fees until connected to the sewer system and receiving services. Once connected, users are responsible for their share of the system's costs, both fixed and variable, in proportion to their demand on the system. These fees are for both Single Family Residences (SFR) and Multiple Family Residences (MFR).

Property Taxes – \$99.6M

The County of Orange is permitted by State law (Proposition 13) to levy taxes at one percent of full market value (at time of purchase) and can increase the assessed value no more than two percent per year. OCSD receives a share of the basic levy proportionate to what was received in the 1976 to 1978 period, less \$3.5 million, the amount that represents the State's permanent annual diversion from special districts to school districts that began in 1992-93. OCSD's share of this revenue is dedicated for the payment of debt service.

Permit User Fees – \$18.3M

Permit user fees are paid by large industrial and commercial properties owners connected to the sewer system. These fees are for the owner's share of the system's costs, both fixed and variable, in proportion to the user's demand on the system.

Since the inception of the Permit User Fee Program in 1970, users of OCSD's system that discharge high volumes or high strength wastewater have been required to obtain a discharge permit and pay extra fees for the costs of service.

Capital Facilities Capacity Charges (CFCC) – \$14.0M

The Capital Facilities Capacity Charge is a one-time charge imposed at the time a building or structure is newly connected to OCSD's system, directly or

indirectly, or an existing structure or category of use is expanded or increased. This charge pays for OCSD facilities that exist at the time the charge is imposed, or to pay for new facilities to be constructed in the future that will benefit the property being charged.

Interest Earnings – \$6.5M

Interest earnings are generated from the investment of accumulated reserves consisting of a cash flow/contingency, a capital improvement, a renewal/replacement, and a self-insurance reserve.

Intradistrict Transfers – \$3.7M

In accordance with Amendment No. 2 to the Agreement for Purchase and Sale of Capacity Rights in Treatment, Disposal and Sewer Facilities between Irvine Ranch Water District (IRWD) and OCSD dated November 15, 1995, ownership is adjusted annually to reflect the current equity percentage ownership based on sewage flows.

Other Revenue – \$10.8M

Other revenue includes self-insurance assessments for workers' compensation and general liability coverage as well as miscellaneous revenue such as rents and leases.

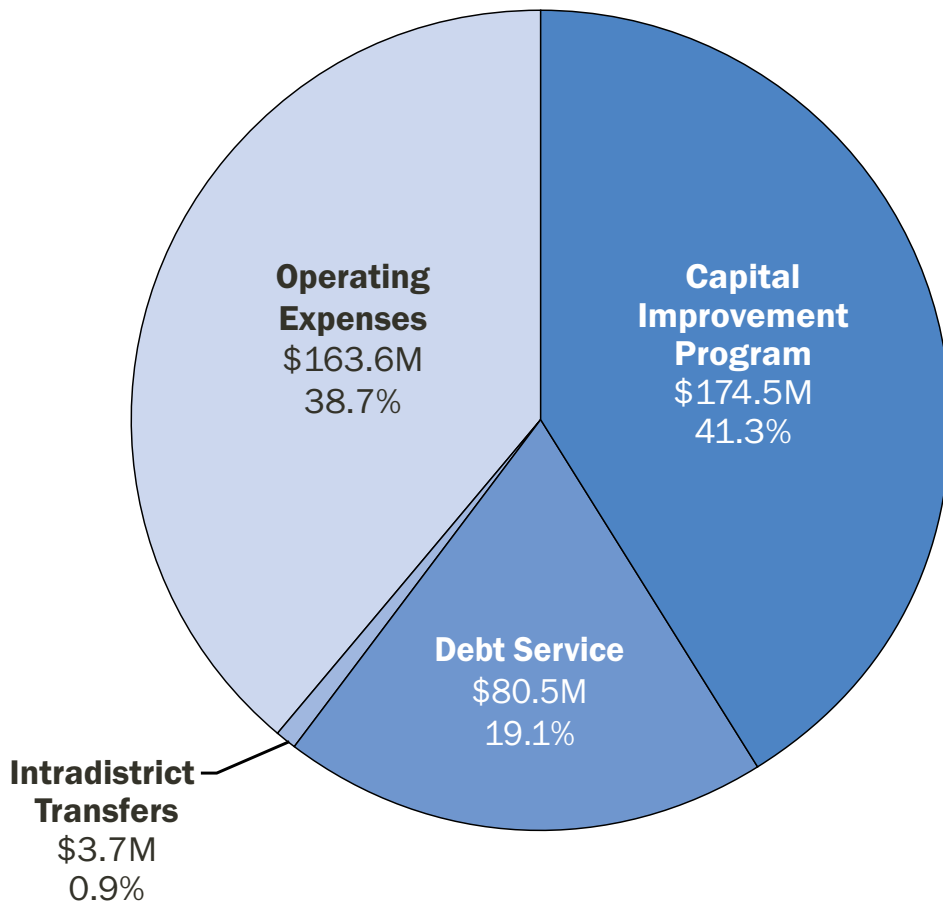
Debt Proceeds – \$0M

Certificates of Participation (COPs) are OCSD's primary mechanism for financing capital projects. COPs are repayment obligations based on a lease or installment sale agreement. COPs are not viewed as "debt" by the State of California, but rather a share in an installment arrangement where OCSD serves as the purchaser.

No new money debt issuances are being proposed over the next two fiscal years as the \$2.7 billion in future replacement, rehabilitation, and refurbishment projects anticipated over the next ten years will be adequately funded through current sewer service fee charges and existing reserves.

FINANCIAL SUMMARY/FUNDING USES BY CATEGORY

WHERE THE MONEY GOES



Funding Uses by Category (in millions)

Category	2016-17 Actual	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Capital Improvement Program, Net	\$139.7	\$124.3	\$174.5	\$137.0
Operating Expenses	143.4	145.7	163.6	162.7
Debt Service*	180.4	82.0	80.5	80.0
Intradistrict Transfers	21.7	2.7	3.7	3.5
Total Funding Uses	\$485.2	\$354.7	\$422.3	\$383.2

*The fiscal year 2016-17 debt service amount includes a payment of \$39.1 million against OCSD's unfunded pension liability and a payment of \$41.5 million to the East Orange County Water District as part of an agreement to transfer responsibility for local sewer maintenance.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

OCSD budgets its funds in four distinct areas:

Capital Improvement Program (CIP) - \$174.5M

To provide an appropriate level of service to OCSD's rate payers, large capital improvements are required. The CIP provides for the management and implementation of these improvements. The CIP budget includes specific projects as well as an allocation for anticipated replacement, rehabilitation, or refurbishment (RRR) projects where detailed job plans have not yet been prepared. The budgets for specific CIP projects for 2018-19 and 2019-20 total \$177.6 million and \$149.0 million, respectively. However, the net CIP cash outlays, which includes future rehabilitation and replacement less savings and deferrals, are budgeted at \$174.5 million and \$137.0 million for each year, respectively.

Operating Expenses - \$163.6M

The proposed budget allocates resources to operate, maintain and manage our sewage collection, treatment, and disposal system, and for any associated administrative or technical requirements.

Debt Service - \$80.5M

This is the cost of repaying debt. Long-term debt financing allows OCSD to complete large multi-year capital projects by providing funds not always immediately available.

Intradistrict Transfers - \$3.7M

In accordance with Amendment No. 2 to the Agreement for Purchase and Sale of Capacity Rights in Treatment, Disposal and Sewer Facilities between IRWD and OCSD dated November 15, 1995, ownership is adjusted annually to reflect the current equity percentage ownership based on sewage flows.



COLLECTION, TREATMENT & RECYCLING PROCESS OVERVIEW

OCSD's system includes approximately 396 miles of sewers that convey wastewater generated within OCSD's service area to its two treatment facilities, Reclamation Plant No. 1 located in the City of Fountain Valley, and Treatment Plant No. 2 located in the City of Huntington Beach.

Influent wastewater undergoes Preliminary Treatment upon entry to the treatment plants where it is filtered through bar screens, and grit and debris are removed. It then flows to Primary Treatment, which consists of large settling basins where solids are settled out, enhanced by the addition of chemicals, and sent to Solids Processing. Wastewater then flows to Secondary Treatment, which is a biological process using either the trickling filter or activated sludge process. Solids removed in Secondary Treatment are also sent to digestion.

Methane gas generated during the natural decomposition of the solids in the digesters fuels the Central Power Generation System producing enough electricity to meet two-thirds of the power needed to run both treatment plants.

Solids are then dewatered to a 20 percent solids consistency, called biosolids, and recycled via direct land application or composting.

Approximately 130 million gallons per day of secondary effluent from Reclamation Plant No. 1 is sent to the Orange County Water District (OCWD) for recycling in its two treatment processes.

The first is OCWD's Groundwater Replenishment System (GWRS). The GWRS is the largest water purification project of its kind in the world and its construction was funded jointly by OCWD and OCSD. At 100 million gallons per day, the GWRS generates enough pure water to meet the needs of 850,000 people.

The second is OCWD's Green Acres Project (GAP) which is a water recycling effort that provides reclaimed water for landscape irrigation at parks, schools and golf courses as well as for industrial uses, such as carpet dyeing. The total annual demand for GAP water is about four million gallons per day.



FISCAL YEARS 2018-19 AND 2019-20 BUDGET



INFRASTRUCTURE ASSET MANAGEMENT

Asset Management

In December 2002, the Orange County Sanitation District (OCSD) Board adopted their “Asset Management Strategic Plan and Framework Analysis” (Strategic Plan). The Strategic Plan defined Asset Management for OCSD as; “to create and acquire, maintain, rehabilitate, replace and augment these valuable wastewater assets in the most cost effective (lowest life cycle cost) sustainable manner at the level of service required by present and future generations of regulators and customers at an acceptable level of risk.”

OCSD is committed to providing services for its rate payers to reliably meet our regulatory mandates and levels of service approved by the Board of Directors, and will provide these services using sustainable engineering principles that result in the lowest responsible lifecycle cost. OCSD installs, operates, maintains, refurbishes and disposes of assets with lifecycles measured from years to decades, so an approach which balances long, medium and short-term needs is necessary. OCSD’s asset management program has evolved into a comprehensive decision-making framework that encompasses engineering planning, design and construction of quality facilities, optimized operation, proper maintenance, and planned refurbishment and disposal that will meet OCSD’s changing needs. This coordinated decision making process will allow OCSD to consistently meet mandated levels of service to the rate payers at the lowest lifecycle cost.

OCSD’s Asset Management Plan focuses on the long-term planning of maintenance and capital improvement projects to ensure the proper rate structure is in place to support sustainable operations and to prioritize condition assessment studies based on service life and service conditions. These are important starting points and have yielded tangible benefits in reduced risk levels and an improved capital planning approach. The implementation of the Maximo Computer Maintenance Management System (CMMS) is an example of an effort to improve OCSD’s Asset Register. CMMS Technicians and the Asset Engineers continue to work to update the database information including installation date, asset cost, condition, and criticality in the new system.

OCSD has been striving to more accurately identify medium to long-term capital cash flow requirements. Specifically, the Engineering Planning Division has been working on developing a 20-year Capital Improvement Program (CIP) by creating specific project plans for the rehabilitation, replacement, improvements and expansion for each treatment plant or collections area.

This medium to long-term planning is important for several reasons. By moving away from narrowly focused projects to solve individual problems, to more comprehensive projects refurbishing entire processes, OCSD benefits by having less operational disruption and more efficient project delivery, better cash flow estimation, and better operations and maintenance decision-making framework. This is a huge undertaking based on the number of asset and facilities, but over time the undefined future rehabilitation capital estimates within the 20-year window are expected to be drastically reduced and replaced by more specific estimated capital needs.

Complementing the medium- to long-term planning are the short-term efforts to coordinate maintenance actions that can reduce risks, actively defer the larger refurbishment projects, and reduce asset consumption rates to minimize the need for replacement of structures and conveyance systems when projects are executed. The Planning Division asset engineers are constantly reviewing their area scopes of work, utilizing their criticality and condition information and engineering judgment, to identify opportunities for operational adjustments or maintenance activities that cost effectively extend the life of key assets which may allow for deferral of the larger overall project. This may be a targeted equipment replacement or pipeline repair that is more urgent than the need of the overall facility. These engineers may also identify opportunities to reduce asset consumption through coating systems, atmosphere improvements or small structure repairs before major damage is done. These actions can drastically reduce the cost of future projects by preventing the need to demolish and replace entire structures.

OCSD is committed to continuous improvement of the process by which it manages the assets and facilities that are required to reliably deliver its level of service commitments. The additional resources and individual accountability for specific areas has improved, and will continue to improve our capital planning, project packaging, project execution and delivery, plant operability and maintenance planning.

The average age and value of the assets OCSD owns is increasing steadily over time, the latent asset replacement obligation is rising, and as a consequence, OCSD needs to plan for decreased capital projects for expansion and increased renewal expenditures in the future relative to past expenditure levels. Additional focus will need to be given to ensuring that appropriate operation and maintenance strategies are being applied that consider the different ages of assets being maintained.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET



INFRASTRUCTURE ASSET MANAGEMENT

Asset Valuation

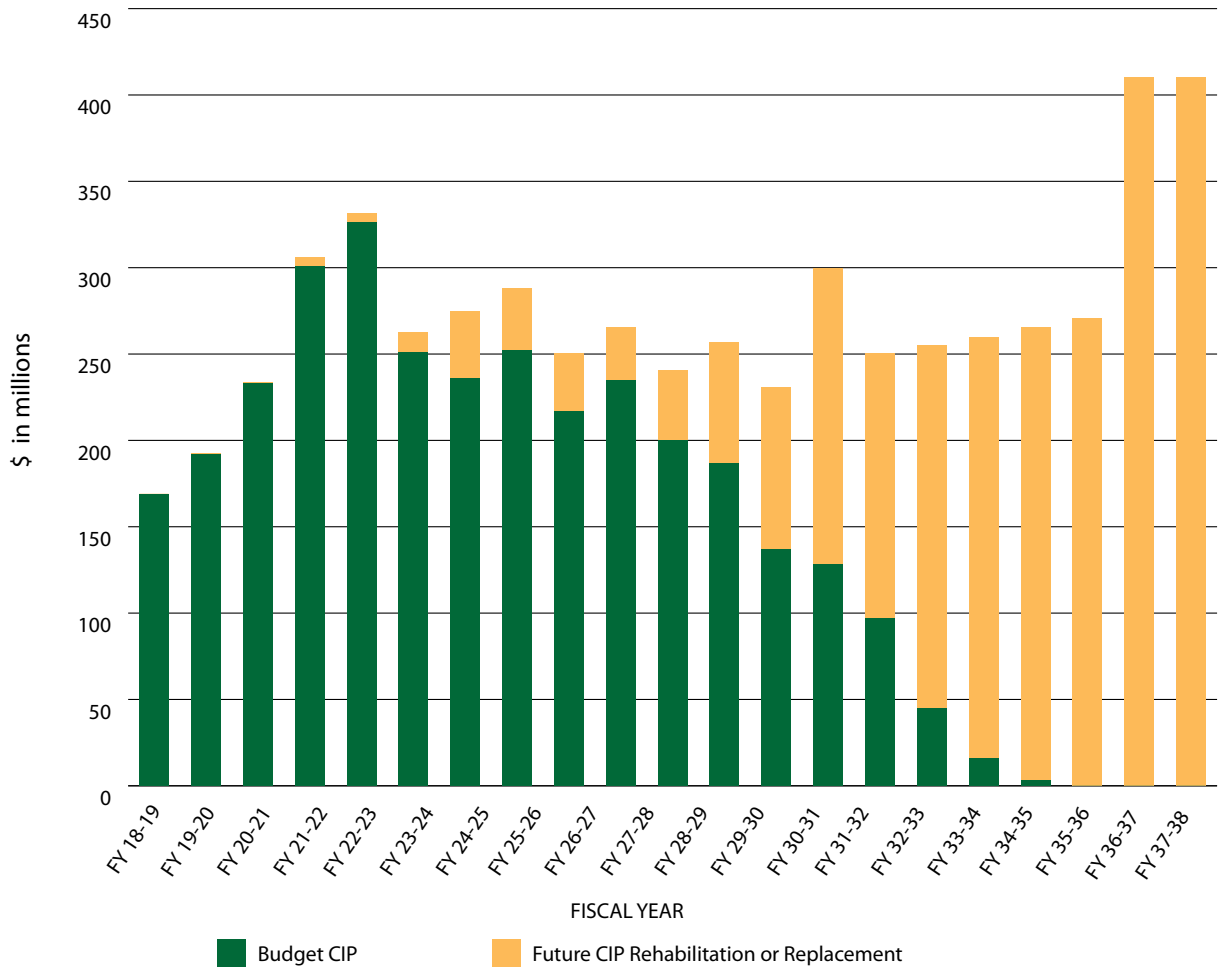
The replacement valuation for all of OCSD’s assets has been updated in 2018 as part of the 2017 Facilities Master Plan project. The table below presents the current replacement and depreciated values of OCSD’s assets. The replacement value represents the cost in 2018 dollars to completely rebuild all the assets to a new condition. The depreciated value is the book value of the assets based on their age, which is a prediction of their current condition.

Valuation	Plants	Collection	Total
Replacement Value (in billions)	\$7.28	\$3.56	\$10.84
Depreciated Value (in billions)	\$1.64	\$0.48	\$2.12

Planned CIP Outlays

The following chart shows the 20-year CIP outlay which includes current and predicted future Capital Improvement Program projects.

20 YEAR CIP OUTLAY



FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Through asset management, OCSD's capital improvement and maintenance programs work collaboratively to ensure that our mission is delivered reliably and that our facilities are managed in a way that minimizes overall life cycle costs.

Below is a status of the fiscal year 2017-18 infrastructure maintenance activities and planned activities for fiscal year 2018-19.

Collection System:

OCSD's collection system consists of 396 miles of sewers. The maintenance of all regional sewers is actively managed but only 230 miles of regional sewers are on a cleaning schedule. The largest sewers are typically self-cleaning due to higher flows and locations closer to the treatment plants. The regional collections system also includes 15 pump stations and three metering locations. Typical collection system maintenance activities consist of: televising, inspecting, and cleaning sewer lines; operating, maintaining and cleaning pump stations with associated facilities; and chemical conditioning of the sewage to reduce corrosion and control odors. Maintenance activities are based on established levels of service to ensure compliance with our Sewer System Management Plan, reducing spills, increasing reliability and safety, and ensuring that our facilities are managed, operated and maintained to minimize overall life cycle costs and need for repairs. The cleaning frequencies are based on data from pipe inspections, closed-circuit television (CCTV) work, historical records, and industry best practices. The planned activities help extend the useful life of the assets and minimize nuisance odors.

During fiscal year 2017-18 the following maintenance activities are projected to be completed:

- Cleaning of 93 miles of regional sewer lines on a cleaning schedule.
- CCTV video inspection of 170 regional system manholes.
- CCTV video inspection of 75 miles of regional sewer pipeline.
- 91 percent of scheduled pump station preventative maintenance work.

- Cleaning of 99 percent of trouble spot and scheduled inverted siphon work.
- Managed odor control chemical expenses to 103 percent of budget.

The following emergency preparedness efforts were also completed:

- Developed bypass pumping plans for all pump stations.
- Purchased 12" hose and trailer to use with large pumps.
- Completed analysis and update of back-up generator requirements for pump stations.

Total costs: \$10,032,760

The following activities and goals are planned for fiscal year 2018-19:

- Clean 65 miles of regional sewer lines on a cleaning schedule.
- CCTV video inspection of 500 regional system manholes.
- CCTV video inspection of 80 miles of regional sewer pipeline.
- Complete at least 90 percent of scheduled pump station preventative maintenance work.
- Clean 90 percent of trouble spot and scheduled inverted siphon work.
- Manage odor control chemical expenditures to between 95-100 percent of budget.
- Complete year one of a two-year effort to reduce potential arc flash by adjusting and testing protective relays and breakers
- Purchase of larger generators for pump stations for emergency preparedness, based on analysis completed in the previous year
- Purchase of emergency preparedness bypass pumping hardware with installation of in-place storage, set up documentation and staff training

Estimated total costs: \$11,243,960

INFRASTRUCTURE ASSET MANAGEMENT

Collection System Capital Improvement Projects:

OCSD's collections projects go through an intensive planning and design process to ensure all elements of the project are thoroughly assessed. These projects typically renew or replace aging pipelines and pump stations, upgrade facilities to meet current codes and standards, and, in some instances, increase flow capacity due to growth in localized portion of our service area.

We are currently planning and executing a comprehensive program to renew our collection system. One of the larger projects is the Newhope-Placentia Trunk Replacement (Project No. 2-72) which is taking place in the cities of Fullerton and Anaheim. Seven miles of sewer along State College Boulevard, from Yorba Linda Boulevard to Orangewood Avenue, will be upsized to allow abandonment of the Yorba Linda Pump Station which diverts reclaimable wastewater to the Santa Ana River Interceptor, which cannot be reclaimed at the Orange County Water District's (OCWD's) Groundwater Replenishment System (GWRS). The project will also include modifications to existing diversion structures to add flexibility to divert other reclaimable flow. This project also provides adequate capacity for future development, minimizing the risk of sewer spills in the future. Construction of the first phase of the project was completed in fall 2017. The second phase of the project is scheduled to begin in summer 2018. The project has a budget of \$112 million.

Another large-scale project is the Rehabilitation of the Western Regional Sewers (Project No. 3-64) which covers approximately 17 miles of sewers in the cities of Anaheim, Buena Park, Cypress, La Palma, Los Alamitos, Seal Beach and unincorporated areas of the County of Orange referred to as Rossmoor. This large project is required to rehabilitate or replace pipes that were installed 45 to 55 years ago. The sewers have multiple deficiencies which have allowed the intrusion of ground water. In some cases, hard calcium deposits have developed, making the pipe difficult to clean, and may, over time, impede the wastewater flow. Portions of the project will be relined and others will be replaced with larger diameter pipelines. Over 150 manholes will be replaced. This project is currently in the design phase with construction anticipated for 2020. This project budget is \$202 million.

The Westminster Boulevard Force Mains Replacement (Project No. 3-62) will replace two existing force mains that run three miles along Westminster Boulevard from Seal Beach Boulevard to Rancho Road in the City of Westminster. The project is in design, with construction anticipated for 2020. The budget for this project is \$54 million.

In Newport Beach, Bay Bridge Pump Station Replacement (Project No. 5-67) will replace the existing Bay Bridge pump station to meet current building, electrical, and safety codes, and to meet projected capacity needs. The existing force mains will also be replaced and upsized, and will extend from the new pump station location, across the Back Bay channel, to connect with the existing pipes near the Dover Ave and Pacific Coast Highway intersection. The project is currently in the design phase. The construction of both the force mains and pump station is anticipated to begin in 2020. The budget for this project is \$64 million.

Reclamation Plant No. 1:

Flow from Reclamation Plant No. 1 is delivered to the Orange County Water District (OCWD) for recycling via the Ground Water Replenishment System (GWRS). During 2015 the expanded plant came on line, with capacity to deliver an additional 30 million gallons per day for a total of 130 million gallons per day.

The maintenance organization continues to implement industry best practices for safety, effectiveness and reliability. During fiscal year 2017-18, several major initiatives were completed to enhance plant safety and reliability. These included a comprehensive lubrication assessment and preparation of enhanced Job Plans for low voltage Motor Control Centers (MCCs) and switch gear to comply with NFPA70 standards. An analysis of our current pumping system at the Steve Anderson Lift Station (SALS) was also conducted, resulting in an improvement over current technology by converting to close-coupled pump motors. Throughout the Plant, more than 4,600 preventative maintenance activities were performed. In addition to these routine activities, the following maintenance and repair activities are projected to be completed in fiscal year 2017-18:

- Replacement of all check valve and jet cell ignitors for three CenGen engines.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

- Installation of automatic balancing equipment on one engine to improve efficiency and reliability.
- Overhaul of one cake conveyor and one belt press for biosolids dewatering.
- Major service on two blowers that service the Activated Sludge secondary treatment facility.
- Major maintenance service of ten primary clarifiers for increased reliability.
- Replacement of the vane bushings on three of the Activated Sludge blowers.
- Cleaning and valve replacement of three digesters.
- Overhaul of one digester gas compressor.

Total costs: \$8,586,560

During fiscal year 2018-19, there are more than 5,000 preventative maintenance activities that are scheduled to be completed at Plant No.1. This includes typical time or cycle based maintenance tasks such as adjustments and mechanical alignments, cleaning and tightening of electrical equipment, calibration of sensors and meters, changing of lubricants and filters, exercising equipment, rebuilds and regulatory testing. While completing these activities we will simultaneously conduct an optimization study of all preventative maintenance tasks to ensure assets are effectively maintained at proper intervals and lower cost. In addition, staff will be utilizing predictive technologies such as vibration analysis to measure imbalance in rotating equipment, thermography to measure excessive heat, oil analysis to predict failure of lubricants, and ultrasonic to detect leaks as well as deterioration and short-circuiting in electrical equipment. We will also develop and initiate implementation of the lubrication program based on the assessment completed in the previous year. Other major planned activities for fiscal year 2018-19 at Reclamation Plant No. 1 include:

- Major overhaul of one CenGen Engine.
- Meet stricter NFPA110 standards for servicing standby and mobile generators.
- Complete year one of a two-year effort to reduce potential arc flash by adjusting and testing protective relays and breakers.

- Assess underground cable condition to ensure reliability of the electrical distribution network.
- Major service on one blower that services the Activated Sludge secondary treatment facility.
- Major maintenance service of ten primary clarifiers for increased reliability.
- Cleaning and valve replacement of two digesters.

Total estimated costs: \$10,186,050

Reclamation Plant No. 1 Capital Improvement Projects:

These projects are intended to rehabilitate or reconstruct major components of our treatment process to ensure compliance with regulatory permits, enhance water recycling and safety.

One of the largest projects currently being designed is the Headwork Rehabilitation at Plant No. 1 (Project No. P1-105). The facility is almost 30 years old, so a comprehensive refurbishment is required in order to extend the life of the facility. The project will rehabilitate systems including the metering and diversion structure, the bar screen building, the bin loading building, the main sewage pump station, the grit basins, the primary influent channels, the headworks odor control scrubbers, and electrical power distribution and control systems. This project will also replace the emergency pumping capacity that has been provided by the original headworks pumping system dating back to the 1950s. The total budgeted cost for this project is \$370 million.

While OCSD generally has adequate hydraulic treatment capacity, additional solids handling capacity is needed. The Sludge Dewatering and Odor Control Project (No. P1-101) is necessary to support the need for more capacity to thicken and dewater sludge due to the conversion to full secondary treatment as well as increased flow to support the expansion of the GWRS. The 40-year old system has reached the end of its useful life and as such will be replaced with a new and improved facility that will increase cake dryness which will reduce biosolids management cost. This will in turn improve sludge thickening to optimize the use of existing digesters thus eliminating the need to construct new digesters. The project will also help us meet our level of service goal by reducing odors. The project budget is \$195 million.

INFRASTRUCTURE ASSET MANAGEMENT



FISCAL YEARS 2018-19 AND 2019-20 BUDGET

A project closely tied to the solids dewatering facility is the Digester Rehabilitation (Project No. P1-100) which is rehabilitating 12 digesters. The project will refurbish aged storage tanks, as well as handle the increased volume of solids more efficiently and with greater reliability. The sludge pumping, heating, structural, mechanical, and electrical and control systems will all be rehabilitated which will increase the quality of the sludge production. By rehabilitating our existing digesters, we reduce the risk of failure and extend the life of the assets, minimizing future expenditures. The total project budget is \$66 million.

Treatment Plant No. 2:

All flows entering Treatment Plant No. 2 are treated to full secondary standards and then discharged four miles offshore through our ocean discharge outfall. Plant No. 2 has also implemented the same maintenance best practices implemented at Plant No. 1 to ensure consistency across OCS D in the areas of safety and asset reliability. Plant No. 2 will also benefit from the lubrication assessment conducted during fiscal year 2017-18 as well as the enhanced job plans for MCCs and switch gear to comply with NFPA70 standards. In addition to more than 4,700 preventative maintenance activities completed during fiscal year 2017-18, the following major activities are projected to be completed:

- Cleaning and valve replacement of three digesters.
- Replacement of all check valve and jet cell ignitors for one CenGen engine.
- Rehabilitation of one CenGen electrical generator.
- Installation of automatic balancing equipment on one engine to improve efficiency and reliability.

Total costs: \$5,898,080

During fiscal year 2018-19, there are more than 5,000 preventative maintenance activities that are scheduled to be completed at Treatment Plant No. 2. This includes typical time or cycle based maintenance tasks such as adjustments and mechanical alignments, cleaning and tightening of electrical equipment, calibration of sensors and meters, changing of lubricants and filters, exercising equipment, rebuilds and regulatory testing. While completing these activities we will simultaneously conduct an optimization study of preventative

maintenance tasks to ensure assets are effectively maintained at proper intervals and lower cost. In addition, staff will be utilizing predictive technologies such as vibration analysis to measure imbalance in rotating equipment, thermography to measure excessive heat, and oil analysis to predict failure of lubricants. We will also develop and initiate implementation of the lubrication program based on the assessment completed in the previous year.

Other major planned activities at Treatment Plant No. 2 for fiscal year 2018-19 include:

- Overhaul of one CenGen Engine.
- Cleaning and valve replacement of four digesters.
- Major repair of two primary clarifiers and six secondary clarifiers for increased reliability.
- Meet stricter NFPA110 standards for servicing standby and mobile generators.
- Complete year one of a two-year effort to reduce potential arc flash by adjusting and testing protective relays and breakers.
- Conduct medium voltage cable assessment.
- Replace one boiler heat exchanger.
- Complete repair of secondary clarifier inlet gates.
- Replace all check valve and jet cell ignitors for four CenGen engines.

Total estimated costs: \$9,766,350

Treatment Plant No. 2 Capital Improvement Projects:

The Primary Treatment Rehabilitation Project (Project No. P2-98) will rehabilitate the primary clarifiers, influent pipes, construct new primary effluent pipes, and rehabilitate and upgrade the odor control systems. These facilities date back to the late 1950s and need seismic and condition based upgrades. By replacing old structures and installing new systems, we will improve the resiliency of our infrastructure and thus improve our ability to provide service. This is anticipated to be a very long duration project because the need to maintain treatment operations during the project. The total project budget is \$245 million.

INFRASTRUCTURE ASSET MANAGEMENT

Treating 100 percent of our influent to full secondary treatment standards means there are more solids to manage. The Sludge Dewatering and Odor Control project (Project No. P2-92) is replacing the current belt press dewatering system with a centrifuge dewatering facility that will remove a greater amount of water from the sludge resulting in reduced disposal costs for OCSD. This \$90 million project will be in construction through 2020.

The Headworks Modifications at Plant No. 2 for GWRS Final Expansion (Project No. P2-122) will support the GWRS Final Expansion by separating non-reclaimable flows from those that can be transferred to OCWD for reclamation. The project will include the installation of new gates, replacement of three existing influent pumps at the existing headworks, and modification of waste sidestream pumping and piping. Costs associated with this project will be reimbursed by OCWD.

As we make improvements throughout the plant, it is imperative we pay attention to our ocean outfall systems. Many components of the system such as the pipeline assets have already been addressed, so now we turn our attention to the pumping systems. Project No. J-117, the Ocean Outfall System Rehabilitation, will rehabilitate the Ocean Outfall Booster Station and the 84-inch and 120-inch interplant effluent lines between Plant No. 1 and Plant No. 2. The pump station work includes rehabilitation of the mechanical, electrical, and civil systems which will extend the life of the facility and increase the efficiency of the system. In addition, a new Low Flow Pump Station will be added due to our increased water recycling rates, which will reduce our outfall flows below the minimum capacity of the existing effluent pumps. This project will also relocate the existing Plant Water Pump Station to prevent water that is not reclaimable by the GWRS from flowing into the reclaimable portion of the treatment plant. The project will also replace existing electrical switchgear at the Central Generation Building. The budget for this project is \$166 million. Costs associated with the Plant Water Pump Station will be reimbursed by the OCWD.

Planning Studies:

As part of the long-term CIP planning efforts, several studies are currently underway evaluating various areas of the Plants and the collection system to determine their condition, and identify deficiencies

or improvements needed. These studies include the Seismic Evaluation of Structures at Plant Nos. 1 and 2, Collections Capacity Evaluation Study, Stormwater Master Plan, Edinger Pump Station Rehabilitation Study, and Rectangular Primary Clarifier Reliability Study at Plant No. 1. The results of these studies will help define and refine future CIP projects to improve our facilities and systems.

Civil Assets Maintenance Program

The Civil Assets Maintenance Program (CAMP) covers proactive and corrective maintenance tasks for all OCSD civil assets at all its facilities located at Plants No. 1 and No.2, as well as all OCSD pump stations and the collections system. CAMP works to ensure that OCSD civil assets meet design life expectancy and will complement the existing maintenance programs for mechanical, electrical and instrumentation maintenance. In addition, the program ensures the assessment of nearly all structures in order to achieve OCSD's primary mission of protecting the public health and environment. This includes a valve and gate exercising program comprised of more than 264 preventive maintenance tasks for more than 1,650 valves and gates in both Plants and the collections system. Besides developing in-house capabilities to better monitor and maintain these assets, the program entails utilizing consultants and contractors for program development and implementation. Repairs of the assets are planned and scheduled based on condition and criticality, and performed by staff or contracted services. CAMP will also implement an equipment rotation program to ensure that equipment wear is predictable. For fiscal year 2018-19, 45 planned entries and inspections of civil structures are planned, which will include minor repairs of identified deficiencies.

Estimated total costs: \$3,228,800

FISCAL YEARS 2018-19 AND 2019-20 BUDGET



CAPITAL IMPROVEMENT PROGRAM

CIP Budget Request Summary

Each year, the Board of Directors, through their committee process, reviews and approves the Capital Improvement Program (CIP) prepared by staff for both sewage collection system projects (collections) and the joint works treatment and disposal system projects.

CIP projects take several years to complete the planning, design, and construction cycle. The proposed budget for each project covers the life of the project. This budget is reevaluated each year for the purpose of managing annual cash flows. Thus, many of the projects in the CIP Budget for FY 2018-19 and 2019-20 are continuing projects that were approved in prior years.

In December 2017, the 2017 Facilities Master Plan was adopted by the Board of Directors. The Master Plan identified a phased 20-year program of capital improvement projects that will allow OCSD to maintain reliability and accommodate future growth, as well as meet future regulatory requirements, level of service goals, and strategic initiatives.

With this phased 20-year program as a starting point, the Asset Management Program within the Planning Division continues assessing the condition of OCSD's existing assets and systems to ensure that these assets and systems can provide the necessary level of service. The Planning Division continues reviewing and updating the ongoing and future CIP to appropriately manage the risks associated with asset or system failure. Projects can be delayed, consolidated or rescoped to help ensure that the CIP is delivered in the most efficient way possible. The Asset Management Program will continue these efforts and will continue to define the future CIP project requirements not currently included on the CIP list but are anticipated within the long-term financial plan to ensure effective and efficient operations in the future.

This year, five new projects are proposed for addition to the 2018-20 budget. These are:

- Project No. 3-67: Seal Beach Pump Station Replacement
- Project No. 3-68: Los Alamitos Sub-Trunk Extension
- Project No. P1-133: Primary Influent Splitter Box Rehabilitation at Plant No. 1

- Project No. P2-133: B/C-Side Primary Clarifiers Rehabilitation at Plant No. 2
- M-FE: Small Construction Projects Program

OCSD staff has also validated all active and future CIP projects to ensure that the project scopes of work and cost estimates were up-to-date. Through the budget validation process, each project's schedule, staff resources, total project cost, cash flow and risks are assessed to confirm the budgetary requirements. The validated CIP includes 68 active and future capital projects, five programs, such as the Planning Studies Program (M-Studies) and Small Construction Program (M-FE), and budget for capital equipment purchases with a total CIP budget authority of \$4.01 billion. The total CIP budget authority has decreased by \$112 million as compared to FY 2017-18 approved budget of \$4.12 billion. The changes are summarized below:

FY2017-18 Approved Total CIP Budget Authority	\$4.12B
Net Changes:	
New Projects	\$171M
Closed/Cancelled Projects	(\$180M)
Budget Changes for Active Projects	(\$94M)
Budget Changes for Future Projects	(\$5M)
	<hr/>
	(\$108M)
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FY2018-19 Proposed Total CIP Budget Authority	<u>\$4.01B</u>

Following is a table of the FY 2018-19 proposed CIP budget:

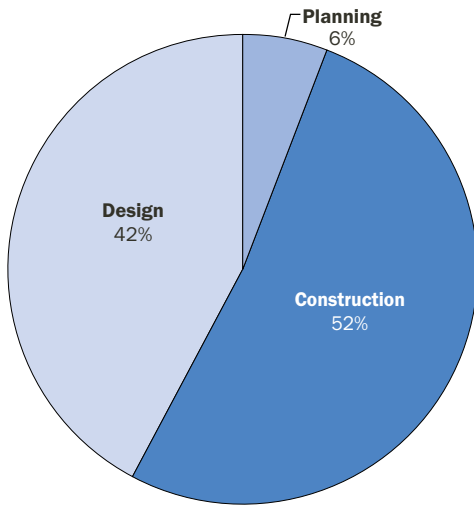
<u>Description</u>	<u>FY 2018-19 CIP Budget</u>
Capital Improvement Program (CIP)	\$177.6M
Future Rehab & Replacement	\$14.3M
	<hr/>
	\$191.9M
Less: Savings and Deferrals	(\$17.3M)
	<hr/>
Net CIP Outlay	<u>\$174.5M</u>

The proposed 2018-19 and 2019-20 net CIP outlays can be categorized by the location of the projects in terms of wastewater treatment process, or by the reasons why the projects are needed, i.e. project drivers. The FY 2018-19 and 2019-20 charts showing the distribution of the funds by CIP driver are shown on the following page.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

The proposed net CIP outlays can also be categorized by project phase or status. The following chart shows the net CIP outlays of projects in the Planning, Design and Construction phases for FY 2018-19.

**Projected FY 18-19 Net CIP Outlay
By Project Status**

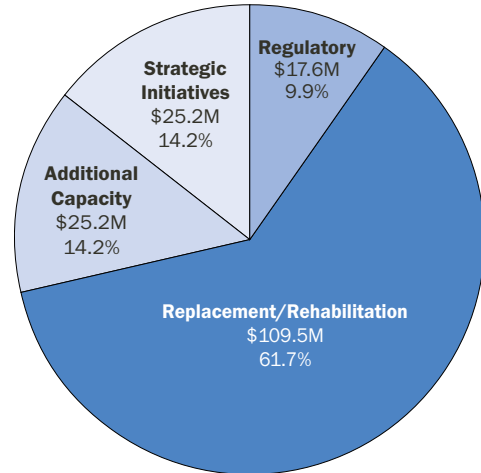


Projects that are in the Planning phase make up about 6% of the FY 2018-19 net CIP outlay. Projects in the Planning phase are planning or research studies that are mostly managed under the Planning Studies Program, or M-Studies.

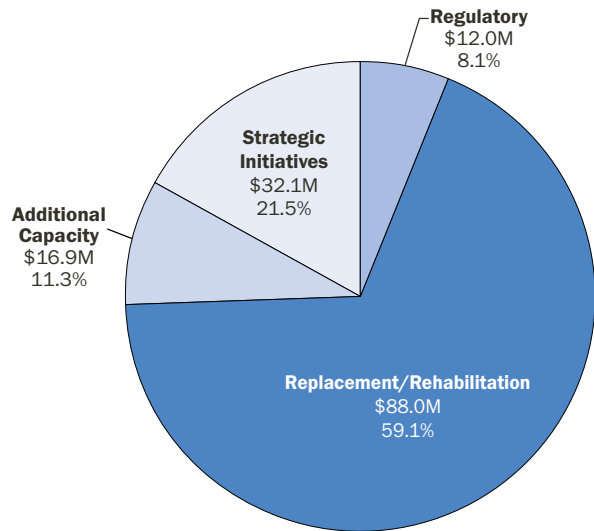
Forty-two percent of the FY 2018-19 net CIP outlay will be for projects that are in the Design phase. The three largest projects in the Design phase are Headquarters Complex and Site Security at Plant No. 1 (Project No. P1-128), Headworks Rehabilitation and Expansion at Plant No. 1 (Project No. P1-105), and Bay Bridge Pump Station Replacement (Project No. 5-67) with projected expenditures of \$10.5 million and \$12.4 million, \$13 million respectively in FY 2018-19.

Fifty-two percent of the FY 2018-19 net CIP outlay will be spent in construction. The four most significant construction projects are the Consolidated Demolition and Utility Improvements at Plant No. 2 (Project No. P2-110), Sludge Dewatering and Odor Control at Plant No. 2 (Project No. P2-92), Sludge Dewatering and Odor Control at Plant No. 1 (Project No. P1-101), and Newhope-Placentia Trunk Replacement (Project No. 2-72) with projected FY 2018-19 expenditures of \$11.3 million, \$11.9 million, \$12.2 million, and \$13.5 million, respectively.

**FISCAL YEAR 2018-19
Capital Improvement Authority by CIP Driver
Total = \$177.6 Million**



**FISCAL YEAR 2019-20
Capital Improvement Authority by CIP Driver
Total = \$149.0 Million**



DEBT FINANCING PROGRAM

Debt Financing

Due to the potential magnitude of the capital improvement program, it may be necessary that OCSD utilize debt financing to meet its total obligations. Debt financing allows OCSD to meet projected construction schedules while achieving the lowest possible user fees, as well as long-term stability in future sewer service fee rates.

Certificates of Participation (COP)

The primary debt financing mechanism used is Certificates of Participation (COP). COPs are repayment obligations based on a lease or installment sale agreement. The COP structure was selected over other structures because COPs are not viewed as debt by the State of California, as the purchaser does not actually receive a “bond,” but rather a share in an installment sale arrangement where OCSD serves as the purchaser. COPs can be issued with fixed or variable interest rates.

As of July 1, 2018, the total outstanding COP indebtedness will be \$1.0 billion.

Build America Bonds Financings

OCSD issued the \$80.0 million Wastewater Revenue Obligations, Series 2010A in May 2010 and the \$157.0 million Wastewater Revenue Obligations, Series 2010C in November 2010 as “Build America Bonds” (BABs) fixed rate debt.

The American Recovery and Reinvestment Act of 2009 created a new financing product, BABs, for the municipal issuer. BABs are issued as higher interest taxable bonds; however, the U.S. Treasury provides a 35 percent subsidy on interest payments. The net cost, after accounting for the 35 percent subsidy payment, frequently results in lower net costs to the issuer, specifically in the maturity years beyond ten years.

On March 1, 2013, the federal government implemented certain automatic spending cuts known as the sequester. As a result of the sequester, federal subsidy payments on BABs have been reduced annually from a high of 8.7 percent for the federal fiscal year ended September 30, 2013 to a low of 6.6 percent for the federal fiscal year ended September 30, 2018.

Dedicated Funding Source

In 1992 and 2004 the Board of Directors formalized the dedication of certain funding sources. To ensure the continuation of favorable credit ratings, revenues were dedicated to debt service in the following order:

1. Ad valorem property taxes
2. Sanitary sewer service charges
3. Other revenues

This apportionment of the ad valorem tax was consistent with and pursuant to the Revenue Program adopted in April 1979 to comply with regulations of the Environmental Protection Agency and the State Water Resources Control Board and in accordance with COP documents and Board policy.

OCSD Maintains AAA Bond Rating

OCSD’s bond rating is “AAA” from both Standard & Poors and Fitch Ratings. An “AAA” Rating is the highest for a government agency. In order to maintain this rating, OCSD adheres to its debt policy and coverage ratio requirements. This Board-adopted policy serves as the agency’s guide in the management of existing debt and in the issuance of future debt.

Debt Ratios

OCSD has contractual covenants within the existing COP agreements which require minimum coverage ratios of 1.25. The minimum coverage ratio is the ratio of net annual revenues available for debt service requirements to total annual debt service requirements for all senior lien COP debt. The coverage ratio for senior lien COP debt is being proposed to remain above 3.60 for fiscal years 2018-19 and 2019-20.

Future Financings

No new money debt issuances are being proposed over the next two fiscal years as the \$2.7 billion in future replacement, rehabilitation, and refurbishment projects anticipated over the next ten years will be adequately funded through current sewer service fee charges and existing reserves.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET



OPERATING EXPENSES

Summary of Operating and Maintenance Expenses (in millions)

Category	2016-17 Actual	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Salaries and Benefits	\$91.6	\$90.4	\$96.0	\$98.2
Contractual Services	23.7	24.5	25.2	22.1
Repairs and Maintenance	14.8	15.7	21.7	19.3
Operating Materials & Supplies	14.9	14.9	15.8	18.9
Utilities	6.1	6.9	7.4	9.0
Professional Services	3.5	3.9	5.4	4.6
Other Materials, Supplies, Services	2.4	3.5	5.3	4.2
Self-Insurance Requirements	2.6	2.1	2.4	2.5
Administrative Expenses	1.8	2.0	2.0	1.9
Training and Meetings	0.9	1.0	1.1	1.0
Research and Monitoring	0.9	0.8	1.1	1.1
Printing and Publications	0.3	0.3	0.3	0.3
Cost Allocation	(20.1)	(20.3)	(20.1)	(20.4)
Total Operating Expenses	\$143.4	\$145.7	\$163.6	\$162.7

Salaries, Wages, and Benefits – \$96.0M

Salaries and Wages – The proposed budget for Full Time Equivalent (FTE) positions for 2018-19 reflects an increase of one FTE (0.2 percent) from the 2017-18 approved staffing level of 635.0 FTEs to 636.0 FTEs. Provision has been made in these salary projections to comply with the terms of the most recently adopted Memorandum’s of Understanding.

Retirement – OCSD employees are members of the Orange County Employees’ Retirement System (OCERS). Information from OCERS indicates that the employer’s required contribution rates will be decreased in fiscal year 2018-19 from 12.33 percent to 12.28 percent.

Group Insurance – These expenses include OCSD’s share (approximately \$17,100 per employee) of employee medical plan benefits for the indemnity plan, prepaid HMO plans, dental insurance plan, and life and disability insurance premiums. The proposed budget includes a ten percent increase for medical plans starting January 2019.

Contractual Services – \$25.2M

The treatment plants currently produce about 800 wet tons per day of biosolids which are recycled in California and Arizona. About half of the biosolids are currently allocated to create compost and the other half is used on farms to grow feed and seed crops. The 2018-19 biosolids budget is \$16.2 million, approximately 64 percent of the Contractual Services budget. Other residuals solids and waste includes disposal costs for grit and screening waste, digester cleaning waste, and hazardous materials.

This category also includes appropriations for grounds keeping, janitorial, security, toxic waste removal, outside laboratory, trash pickup, plant site sweeping, closed circuit television pipeline inspections, line cleaning, and temporary services

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Repairs and Maintenance – \$21.7M

This item, which is for parts and services for repair of plant and collection facilities and annual service contracts, is expected to increase \$6.0 million, or 38 percent above the 2017-18 projected costs of \$15.7 million.

Planned repairs include: CenGen engine overhaul (\$2.7M); digester cleaning (\$2.2M); and clarifier repairs and rehabilitation (\$1.5M).

Operating Materials and Supplies – \$15.8M

Chemical Coagulants – Anionic polymer is added to the influent wastewater along with ferric chloride to improve solids removal efficiencies in the primary clarifiers. Ferric chloride is also added to the digesters for solids odor control. Cationic polymer is added to digested sludge prior to dewatering to aid in coagulation, improving the sludge and water separation process. Cationic polymer is also added to the waste activated sludge dissolved air flotation thickeners (DAFTs) to improve solids coagulation.

The costs for this group of chemicals are expected to increase by \$246,000 or 4.7 percent above the 2017-18 projected costs of \$5.2 million.

Odor Control Chemicals – OCSD uses hydrogen peroxide, sodium hydroxide (caustic soda), sodium hypochlorite (bleach) and muriatic acid as the primary odor control chemicals in the treatment plants. Ferrous chloride, magnesium hydroxide, calcium nitrate, and caustic soda are the primary odor control chemicals used in the collection system.

The 2018-19 budget for these chemicals is \$7.1million, 3.7 percent lower than the 2017-18 projected costs of \$6.9 million.

Utilities – \$7.4M

During fiscal year 2018-19, the overall cost for utilities, a significant component of the operating budget, is anticipated to increase by \$472,000, or 6.8 percent.

Natural Gas – Natural gas is purchased from two providers for different purposes. Purchases from a gas marketer are used to supplement the digester gas that is

used to run the CenGen facilities. The fiscal year 2018-19 natural gas budget is \$576,000, 11.8 percent higher than the projected 2017-18 costs.

Electricity – Electricity is the largest utility cost incurred by OCSD. Purchased electricity is used in running the plant processes as a supplement to power produced in the central generation facilities.

The 2018-19 proposed budget is \$5.7 million, 5.4 percent higher than the 2017-18 projected.

Water – Water is used throughout the treatment plants. Potable (drinking) water is supplied by the Cities of Fountain Valley and Huntington Beach; reclaimed water is supplied by the GAP; and plant water is disinfected secondary effluent.

- GAP water is secondary treated effluent from OCSD that is further treated by the Orange County Water District. GAP water is significantly less expensive than potable water and is used in the process wherever possible. The major uses of GAP water include cooling water, solids handling, and landscaping. By agreement, OCSD receives up to 1,120 acre feet per year of GAP water at no charge. Since OCSD's demand for GAP water is not expected to exceed the allotment of "free water", there is no proposed budget for GAP water in 2018-19.
- Potable Water – The potable water budget includes water supplied by the City of Fountain Valley for Plant No. 1 and the City of Huntington Beach for Plant No. 2. Approximately 5 percent of the potable water at Plant No. 1 is used for domestic uses and less than 1 percent is used for irrigation. The majority of the irrigation at both plants uses reclaimed water. Less than 1 percent of the potable water used at Plant No. 2 is for domestic uses due to the relatively small number of employees at Plant No. 2. The proposed total potable water cost for 2018-19 is \$619,000, a 2.4 percent increase from the projected 2017-18 costs.

Professional Services – \$5.4M

Professional Services includes General Counsel, special labor counsel, audit and miscellaneous accounting services, legislative advocacy, engineering, and other technical consulting services.

OPERATING EXPENSES

Other Material, Supplies, Services – \$5.3M

This category of costs includes the in-lieu insurance premium used to maintain the level of accumulated reserves for the property and general liability self-insurance programs. This in-lieu cost for 2018-19 is proposed at \$1.3 million.

Expenses not chargeable to other categories, such as freight and miscellaneous items, and annual regulatory fees assessed by the South Coast Air Quality Management District, are recorded with this category.

Insurance – \$2.4M

OCSD's outside excess general liability insurance coverage is \$40 million per occurrence with self-insurance retention of \$500,000.

OCSD's property insurance coverage is \$1 billion for perils of fire and \$300 million for perils of flood, subject to a self-insurance retention of \$250,000. OCSD is partially self-insured for earthquake, but does carry \$25 million in coverage on 15 key structures with a \$5 million deductible. OCSD also has a \$50 million sublimit for builder's risk under the property insurance program to ensure upcoming construction projects are adequately covered.

An appropriation of \$1.3 million for in-lieu premium contribution charged to operations is recommended for the Property and General Liability Program. This will serve to maintain the reserves balance.

Administrative Expenses – \$2.0M

These accounts include supplies, postage, technical journals and publications, forms, small office equipment, and small computer items that cost less than \$5,000 per item and exclude items that are capitalized.

Training and Meetings – \$1.1M

Board member and staff travel has been significantly reduced in recent years. This category also includes meetings of professional societies; ongoing technical training and materials for staff; training for computerized plant monitoring and control systems, MAXIMO (a computerized maintenance management system), Enterprise Resource Planning (ERP), and

other "high tech" equipment, processes and systems; and training to allow for an adaptive and flexible work force. While OCSD continues to place an emphasis on effective safety training, as well as technical, leadership and management training, the training budget has been reduced from previous highs of 2.0 percent to approximately 1.6 percent of budgeted regular salaries due to savings achieved in part through the use of online courses.

Research and Monitoring – \$1.1M

Research and monitoring expenditures consist of contract services to carry out the extensive ocean monitoring program required by the EPA under provisions of OCSD's NPDES permit; air quality monitoring costs; OCSD's contribution to the Southern California Coastal Water Research Project (SCCWRP) being conducted under a joint powers agreement with other Southern California municipal dischargers; and also provide for increased operational and ocean research and evaluation to develop optimum operating parameters in treatment plants.

Printing and Publication – \$0.3M

The budget provides for in-house and outside reproduction costs and reflects an expanded management information system and administrative requirements, as well as a continuing demand by the public and regulatory agencies for information. The continuing effort of the Public Affairs Office to improve public education programs about OCSD's activities is also reflected in the budget for this line item. This group of accounts also includes costs for photo processing, advertisements, and notices.

Cost Allocation – (\$20.1M)

This represents direct labor and benefit charge outs and materials, supplies and services cost allocation to the capital projects where the related work was performed.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET



DEPARTMENTS SUMMARY

Expenses by Department (in millions)

Department	Budget 2017-18	Proposed 2018-19	Percent Change	Proposed 2019-20	Percent Change
Administration Units:					
General Manager's Office	\$4.6	\$4.5	(2.2%)	\$4.5	0.0%
Human Resources	9.5	8.3	(12.6%)	9.0	8.4%
Administrative Services	18.5	21.1	14.1%	19.5	(7.6%)
Sub-Total	\$32.6	\$33.9	4.0%	\$33.0	(2.7%)
Operating Units:					
Environmental Services	17.3	18.0	4.0%	18.4	2.2%
Engineering	3.1	3.8	22.6%	3.9	2.6%
Operations & Maintenance	98.9	105.5	6.7%	104.9	(0.6%)
Sub-Total	\$119.3	\$127.3	6.7%	\$127.2	(0.1%)
Total	\$151.9	\$161.2	6.1%	\$160.2	(0.6%)

Staffing by Department (FTEs)

Department	Authorized 2017-18	Proposed 2018-19	Percent Change	Proposed 2019-20	Percent Change
Administration Units					
General Manager's Office*	15.00	14.00	(6.7%)	14.00	0.0%
Human Resources	27.00	27.00	0.0%	27.00	0.0%
Administrative Services	99.00	100.00	1.0%	100.00	0.0%
Sub-Total	141.00	141.00	0.0%	141.00	0.0%
Operating Units					
Environmental Services	91.00	91.00	0.0%	91.00	0.0%
Engineering	116.00	116.00	0.0%	116.00	0.0%
Operations & Maintenance	287.00	288.00	0.3%	288.00	0.0%
Sub-Total	494.00	495.00	0.2%	495.00	0.0%
Total FTEs*	635.00	636.00	0.2%	636.00	0.0%

*FTE totals exclude Management Discretion positions that are authorized but used only on a temporary basis to facilitate the replacement of key positions. A total of three Management Discretion positions are included in the proposed budget for FY 2018-19; however, total filled positions will not exceed 636 FTEs at any point in time.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Administration Units

Office of the General Manager

Budget \$4.5M — Staffing 14 FTEs

The General Manager's Office provides general oversight of all OCSD operations and incorporates functions in the areas of Public Affairs and Board Services. The budget reflects the transfer out of one position to another department.

Human Resources

Budget \$8.3M — Staffing 27 FTEs

The Human Resources Department works with management and employees to ensure an effective and productive employment relationship. The department also provides risk management services to the organization to create a safe, healthy and secure environment for staff, contractors, and visitors.

Administrative Services

Budget \$21.5M — Staffing 100 FTEs

The Administrative Services Department maintains financial oversight and administration of all OCSD funds and accounts and is responsible for contract administration and procurement, and oversees all OCSD computer, networking and customer support issues. The budget reflects the addition of one position to provide computer system support for OCSD's pretreatment program.

Operating Units

Environmental Services

Budget \$18.0M — Staffing 91 FTEs

The Environmental Services Department manages all environmental monitoring, regulatory, compliance and reporting elements to ensure that OCSD meets the requirements of federal, state and local regulations for treated sewage discharge into the ocean, water recycling, air emissions, industrial waste, sewer system operations, land use controls and biosolids and stormwater management.

Engineering

Budget \$3.8M — Staffing 116 FTEs

The Engineering Department is responsible for the planning and execution of the OCSD's capital improvement program and asset management program.

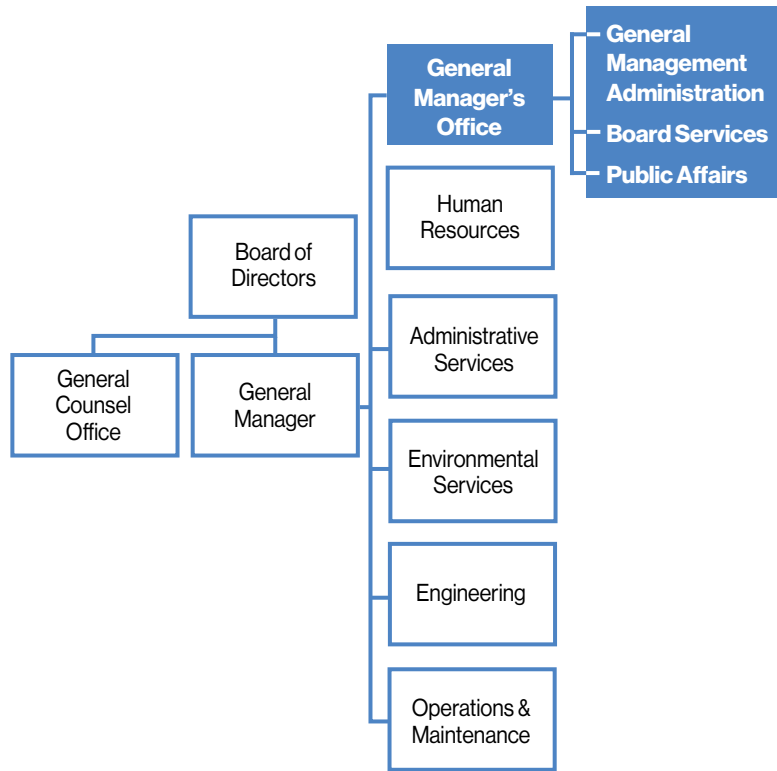
Operations and Maintenance

Budget \$105.5M — Staffing 288 FTEs

The Operations and Maintenance Department is responsible for the operation and maintenance of OCSD's two wastewater treatment plants as well as the sanitary sewer system pipeline and pumping facilities. The department also provides fleet management services for OCSD. The budget reflects the transfer in of one position from another department.

FTEs = Full-Time Equivalent Positions

GENERAL MANAGER'S OFFICE



Service Description

General Management Administration is responsible for working with the Board of Directors to establish standards, policies and procedures, and the overall goals and Strategic Plan of the agency. The General Manager reports directly to the Board of Directors and provides general oversight to all OCSD operations, interagency relations, legislative activities, communications, and the Strategic Plan. The Assistant General Manager directly oversees the Public Affairs and Board Services Divisions.

Board Services provides a high level of customer service through the Clerk of the Board's office. The Clerk of the Board's office supports the Board of Directors and the public by preparing and publishing agendas in accordance with legal requirements for meetings of the Board of Directors; recording the actions taken by the Board; publishing notices as required by law; acting as filing officer for Statement of Economic Interests filings; receiving and processing summons and complaints filed against OCSD; and maintaining rosters of the Board of Directors and appointed committee assignments.

Public Affairs provides services and implements programs to meet the communications needs of OCSD's internal and external audiences. The division is responsible for OCSD's media relations, internal and external communications, community relations, public education and outreach program, social media, special events, agency branding, collateral materials, graphic design, and crisis communications. The division's goal is to develop and manage a total communications program in accordance to OCSD's Core Values and OCSD's Strategic Plan.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Operating Expense					
Category	2016-17 Actual	2017-18 Budget	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Personnel	\$2,534,929	\$2,416,600	\$2,429,400	\$2,175,400	\$2,164,400
Supplies	297,839	538,380	457,020	500,340	460,900
Professional / Contractual Services	1,048,707	719,000	710,000	700,000	700,000
Research & Monitoring	0	0	0	0	0
Repairs & Maintenance	23	0	0	0	0
Utilities	95,619	130,000	107,460	110,000	110,000
Other	109,768	819,070	182,010	1,225,780	1,191,680
Cost Allocation	(54,658)	(57,240)	(57,720)	(116,520)	(116,520)
Total	\$4,032,227	\$4,565,810	\$3,828,170	\$4,595,000	\$4,510,460

Budget Overview

The fiscal year 2018-19 budget for the General Manager’s Office reflects an increase of 0.6 percent over the current budget. The increase is primarily due to increases in costs for legal services and adjustment of the General Manager’s contingency. These increases were essentially offset by reductions in personnel costs, training and meeting expenses, software program consulting services, temporary services, other operating supplies, and adjustments to the district-wide cost allocation plan.

Performance Objectives / Measures

- Ensure that the Board approved Strategic Plan is implemented.
- Provide leadership development opportunities reaching at least 70 percent of staff.
- Maintain the Special District Leadership Foundation (SLDF) District Transparency Certificate of Excellence.
- Respond to 90 percent of public records requests within seven business days.
- Provide information to Board of Directors through the General Manager’s monthly report and the new Board member orientation.
- Provide services and implement programs that meet communication needs of OCSD’s external audience by reaching a minimum of 3,000 people.

Authorized FTE Positions

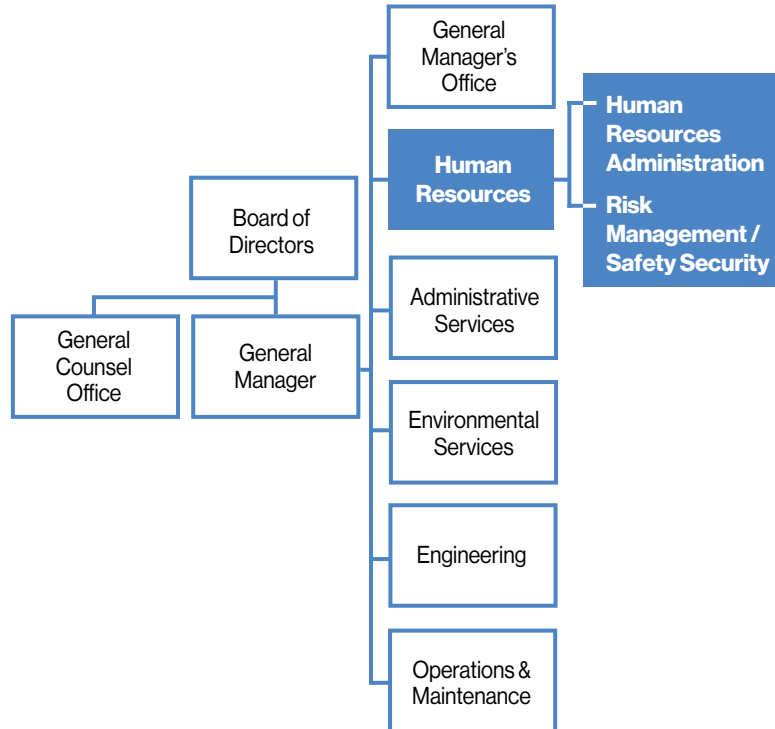
Managers	2.00
Supervisors /Professionals	7.00
Administrative /Clerical	5.00
Total	14.00

**FTE totals exclude four Management Discretion positions which are authorized to be used only on a temporary basis to facilitate the replacement of key positions.*

Staffing Trends



HUMAN RESOURCES DEPARTMENT



Service Description

Human Resources is a full service department responsible for all aspects of Human Resources administration and risk management to ensure a safe, effective and productive workplace and employment relationship. The Human Resources Department is committed to a workplace grounded in fair and equitable employment decisions and practices. This department serves as the in-house advisor to the General Manager, executive staff, OCSD departments, and all staff. Delivering services with a high-level of customer satisfaction is a key objective.

Human Resources Administration oversees all human resources functions, including Benefits Administration, Classification and Compensation, Employee/Labor Relations, Employee Development/Performance Management, and Recruitment and Selection. Benefits Administration manages, maintains, and administers benefits for employees, including medical, dental, vision, and life insurance plans, Employee Assistance Program, retirement, voluntary benefits, and reasonable accommodations. Classification and Compensation is a vital function that establishes new classifications and salaries, while also reviewing existing classifications to determine appropriate placement within OCSD departments, including salary surveys and studies. Employee and Labor Relations offers professional assistance in various areas of the employee and labor relations field. Human Resources manages, interprets, and administers OCSD policies and collective bargaining agreements while ensuring compliance with local, state, and federal regulations. Employee Development/Performance Management manages and coordinates District-wide legally mandated and development training programs; and manages employee performance through consulting management regarding performance appraisals and performance improvement plans. Through the Recruitment and Selection program, OCSD seeks to attract, hire, and retain the best qualified employees in a manner that is fair, equitable and merit-based.

Risk Management/Safety/Security protects the finances and human resources of OCSD. It identifies and manages potential risk to the organization and provides solutions for mitigating or reducing the risk; and manages OCSD's Workers' Compensation Program and provides a secure, safe and healthy work environment for OCSD staff, contractors, and visitors. The division also provides training to identify and control risk, and cost-effectively address safety, health and security issues.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Operating Expense					
Category	2016-17 Actual	2017-18 Budget	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Personnel	\$4,015,664	\$4,633,900	\$4,305,480	\$4,779,200	\$4,920,700
Supplies	557,454	753,460	650,560	690,660	657,060
Professional / Contractual Services	1,919,584	2,737,900	2,483,530	2,717,500	2,957,500
Research & Monitoring	0	0	0	0	0
Repairs & Maintenance	2,486	3,050	1,500	3,050	3,050
Utilities	0	0	0	0	0
Other	1,191,964	2,336,230	2,295,920	1,408,160	1,828,860
Cost Allocation	(935,634)	(931,720)	(935,780)	(1,334,180)	(1,334,180)
Total	\$6,751,518	\$9,532,820	\$8,801,210	\$8,264,390	\$9,032,990

Budget Overview

The fiscal year 2018-19 budget for the Human Resources Department reflects a 13.3 percent decrease from the current budget. The decrease is primarily due to reductions in training expense, general liability insurance in-lieu premium expense, other non-operating supplies, and adjustments to the district-wide cost allocation plan. The overall decrease is partially offset by an increase in personnel costs.

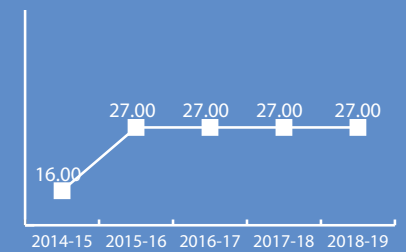
Performance Objectives / Measures

- Continue with development and implementation of effective workforce planning/development and succession planning strategies.
- Continue with a recruitment plan that reduces vacancies and time-to-fill.
- Review all training requirements and support departments in meeting the training level of service requirements of 45 hours per employee.
- Ensure 100% of Safety Compliance Training is completed.
- Implement Leading Safety Indicators to reduce injuries to employees.
- Manage operating expenditures to within 96 to 100 percent of the approved budget.

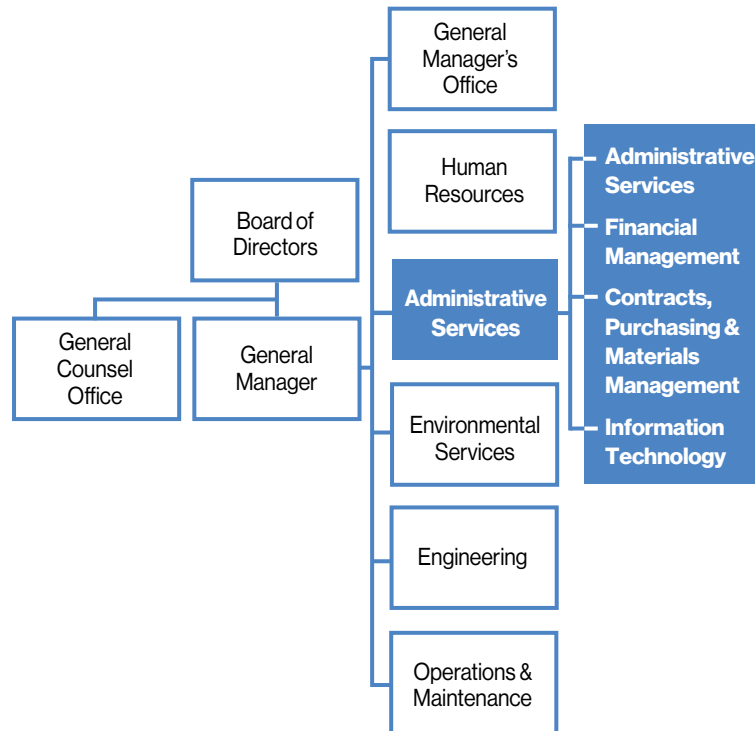
Authorized FTE Positions

Managers	2.00
Supervisors /Professionals	22.00
Administrative /Clerical	3.00
Total	27.00

Staffing Trends



ADMINISTRATIVE SERVICES DEPARTMENT



Service Description

The Administrative Services Department oversees all of OCSD’s finance, contracts/purchasing, and information technology activities, including both day-to-day operations and strategic planning. The department serves as a liaison to Executive Management, the Board of Directors, and other departments of OCSD. The department includes four divisions:

Administrative Services provides leadership and oversight to all Administrative Services divisions.

Financial Management oversees and administers all OCSD’s funds and accounts. Programs include treasury and debt management, accounts receivable and payable, user fees, payroll, fixed assets accounting, and coordinating the capital and operating budget process.

Contracts, Purchasing, and Materials Management is responsible for contract administration and procurement for all departments. Additionally, this division manages OCSD’s warehouses, receives and maintains inventory, and distributes supplies, materials, and equipment.

Information Technology is responsible for customer support related information technology assets and services, networking and infrastructure, telecommunications service operation and maintenance, network and programming, solutions and application support

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Operating Expense					
Category	2016-17 Actual	2017-18 Budget	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Personnel	\$13,939,347	\$13,884,300	\$13,840,500	\$14,610,000	\$14,942,300
Supplies	1,316,966	1,561,650	1,606,530	1,326,980	1,327,160
Professional / Contractual Services	937,021	1,340,000	1,590,900	1,706,890	1,163,120
Research & Monitoring	0	0	0	0	0
Repairs & Maintenance	1,574,137	2,140,000	2,078,810	2,300,000	2,500,000
Utilities	324,239	400,000	400,000	500,000	500,000
Other	148,031	123,610	156,270	1,663,070	163,070
Cost Allocation	(940,243)	(942,320)	(933,540)	(1,056,440)	(1,056,440)
Total	\$17,299,498	\$18,507,240	\$18,739,470	\$21,050,500	\$19,539,210

Budget Overview

The fiscal year 2018-19 budget for the Administrative Services Department reflects a 13.7 percent increase from the current budget. The increase is primarily due to increases in personnel costs, small computer items, service maintenance agreements, telephone service, other contractual services, and a loss on disposal of obsolete inventory. The increase is partially offset by decreases in costs for postage, printing and publication, county service fees, and adjustments to the district-wide cost allocation plan.

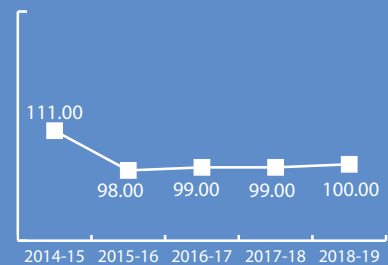
Performance Objectives / Measures

- Manage operating expenditures to within 96 to 100 percent of the approved budget.
- Comply with the California State Government Code 100 percent of the time with all treasury investments.,
- Submit the annual sewer service fee property parcel database to the County in time for placement on annual secured property tax bills.
- Process all approved sewer service fee refund requests within 90 days, 90 percent of the time.
- All debt service payments will be paid electronically, on the actual due dates, and error free 100 percent of the time.
- Continue the cycle count program and maintain a 97 percent accuracy rate or better.
- Ensure the measurement of the Information Technology Strategic Plan target achievement based on the importance and completion of goals supporting the Levels of Service (LOS) in the OCS D Strategic Plan.
- Maintain an average uptime of 90 percent for critical applications.

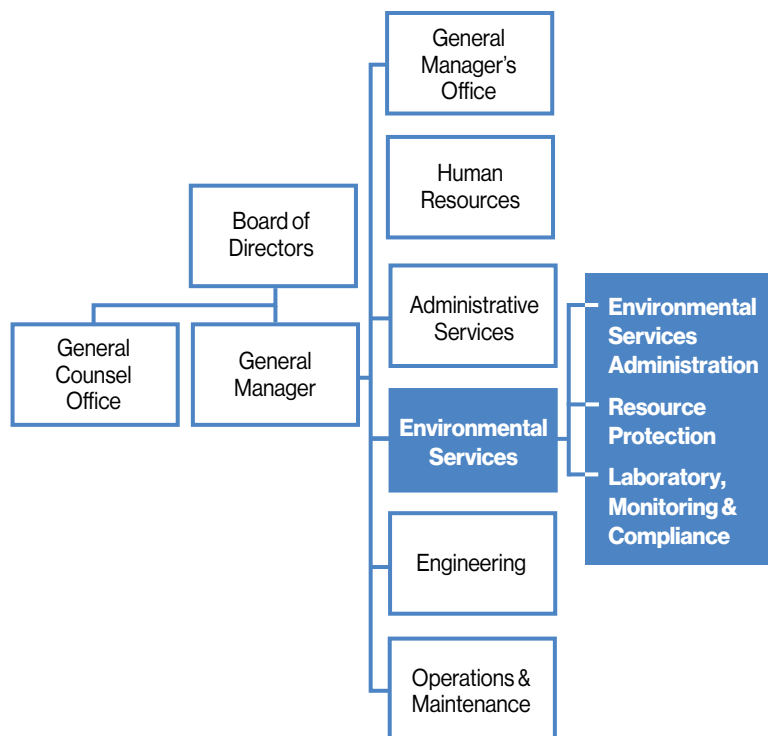
Authorized FTE Positions

Managers	4.00
Supervisors /Professionals	58.00
Administrative /Clerical	36.00
Other	2.00
Total.....	100.00

Staffing Trends



ENVIRONMENTAL SERVICES DEPARTMENT



Service Description

The Environmental Services Department manages all of OCSD’s environmental monitoring, regulatory, compliance and reporting elements to ensure that OCSD meets the requirements of federal, state and local regulations for treated sewage discharge into the ocean, water recycling, air emissions, industrial waste, sewer system operations, land use controls and biosolids and stormwater management. The Environmental Services Department consists of three divisions:

Environmental Services Administration provides leadership, support, and management oversight for the Department in order to accomplish OCSD’s Strategic Plan and departmental annual goals.

Resource Protection fulfills regulatory requirements with proper biosolids management, air quality controls, federal pretreatment regulations, non-industrial source control, and water reclamation and reuse. This is done in the most cost effective, practical, and beneficial manner that meets regulatory requirements, protects OCSD’s assets, employees, and ocean discharge.

Laboratory, Monitoring and Compliance performs sampling, monitoring, analysis, evaluation and recommendations for collection system, treatment processes, air samples, coastal water quality, marine sediments and the fish populations within the influence of OCSD’s wastewater discharge. The division also assures compliance with environmental permits and regulations, and the team works proactively on developing regulations of interest to OCSD

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Operating Expense					
Category	2016-17 Actual	2017-18 Budget	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Personnel	\$13,754,774	\$13,420,000	\$13,229,300	\$13,764,000	\$14,082,100
Supplies	862,303	795,180	817,220	921,220	903,630
Professional / Contractual Services	338,653	657,800	505,750	736,660	701,660
Research & Monitoring	892,313	889,400	785,000	1,061,200	1,099,600
Repairs & Maintenance	260,112	270,000	275,730	297,330	314,970
Utilities	328,548	500,000	387,100	369,400	380,500
Other	799,431	779,060	742,460	824,820	851,820
Cost Allocation	(26,076)	(34,950)	(35,200)	23,250	23,030
Total	\$17,210,058	\$17,276,490	\$16,707,360	\$17,997,880	\$18,357,310

Budget Overview

The fiscal year 2018-19 budget for the Environmental Services Department reflects an increase of 4.2 percent from the current budget. The increase is primarily attributable to increases in personnel costs, operating materials and supplies, environmental scientific consulting services, research and monitoring services, and adjustments to the district-wide cost allocation plan. The overall increase was partially offset by decreases in legal services and electricity costs.

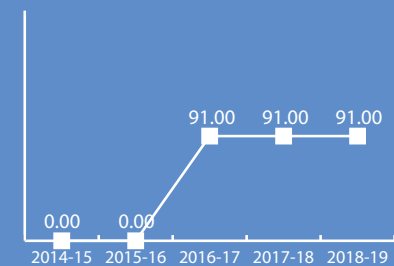
Performance Objectives / Measures

- Manage operating expenditures to within 96 to 100 percent of the approved budget.
- Ensure that reporting divisions achieve 90 percent of individual performance objectives.
- Ensure that all environmental compliance reporting requirements are met on or before required submission dates.
- Conduct audits of all major environmental permits at least once every three years.
- Complete 100 percent of Safety Scorecard requirements each quarter.

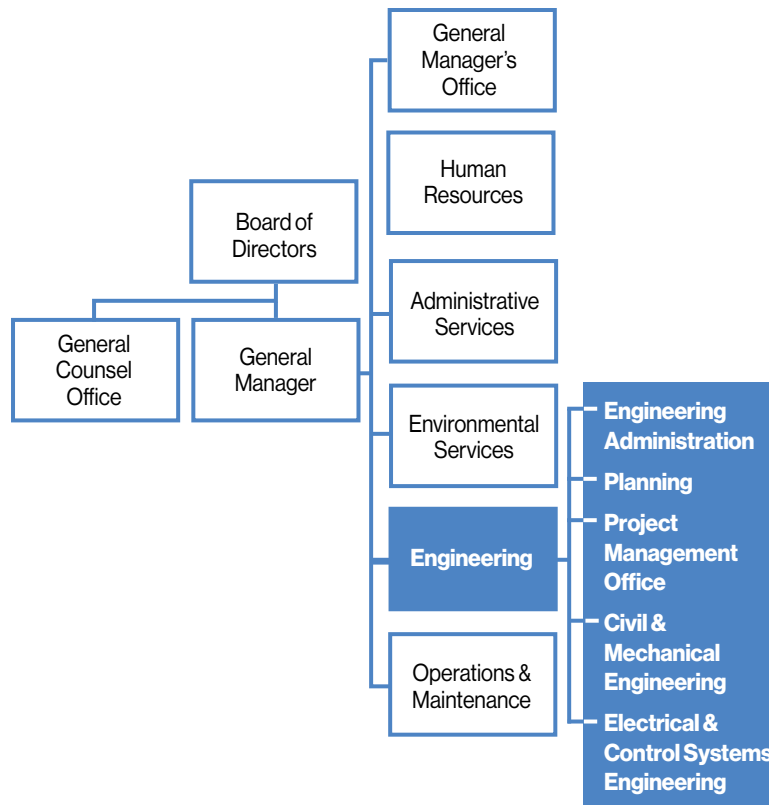
Authorized FTE Positions

Managers	3.00
Supervisors / Professionals	63.00
Administrative /Clerical	9.00
Technical	16.00
Total	91.00

Staffing Trends



ENGINEERING DEPARTMENT



Service Description

The Engineering Department is responsible for the planning and execution of OCSD’s Capital Improvement Program and the Asset Management Program. The Engineering Department is comprised of five divisions:

Engineering Administration provides management to all Engineering Divisions.

Planning is responsible for estimating future capacity requirements, planning existing asset lifecycles, performing applied research, developing the OCSD Capital Improvement Program and complying with the California Environmental Quality Act. In addition, this division is responsible for OCSD’s Asset Management program to ensure that required levels of service are maintained by performing necessary rehabilitation and replacement of facilities at optimal lifecycle costs. The Planning division also performs services for annexations, connection permitting, and inter-agency agreements.

Project Management Office is responsible for the delivery of capital projects from the preliminary design stage through the closeout of construction.

Civil and Mechanical Engineering provides design and construction engineering, quality control inspection, and other technical support for design and construction projects.

Electrical and Control Systems Engineering provides electrical and control system designs, ensures that projects are properly and safely constructed, and provides process control SCADA system hardware, software and data network support for collections and treatment plant processes that monitor, record, control, and operate our facilities.

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Operating Expense					
Category	2016-17 Actual	2017-18 Budget	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Personnel	\$19,199,488	\$19,353,430	\$18,295,400	\$19,798,600	\$20,215,700
Supplies	387,420	457,360	417,460	451,800	437,520
Professional / Contractual Services	521,322	501,000	561,550	689,700	695,000
Research & Monitoring	0	0	0	0	0
Repairs & Maintenance	11,932	5,700	13,040	117,500	117,500
Utilities	6,087	10,000	17,120	178,100	183,500
Other	5,178	4,410	3,970	7,700	8,000
Cost Allocation	(18,040,866)	(17,220,420)	(18,219,810)	(17,483,180)	(17,789,760)
Total	\$2,090,561	\$3,111,480	\$1,088,730	\$3,760,220	\$3,867,460

Budget Overview

The fiscal year 2018-19 budget for the Engineering Department reflects a 20.8 percent increase from the current budget primarily due to increases in personnel costs, legal and other professional services, repairs and maintenance, and electricity costs. The overall increase was partially offset by adjustments to the district-wide cost allocation plan.

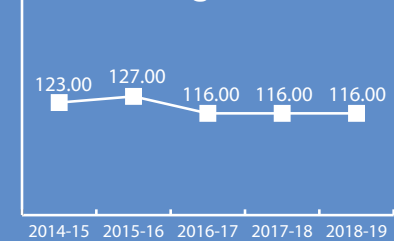
Performance Objectives / Measures

- Expend 90 to 100 percent of project annual Capital Improvement Program cash flows.
- Manage operating expenditures to within 96 to 100 percent of the approved budget.
- Ensure that reporting divisions achieve 90 percent of individual performance objectives.
- Prepare and maintain a 20-year District-wide capital plan coordinating research, condition assessment, regulatory requirements, changing levels of science, and projected capacity requirements.

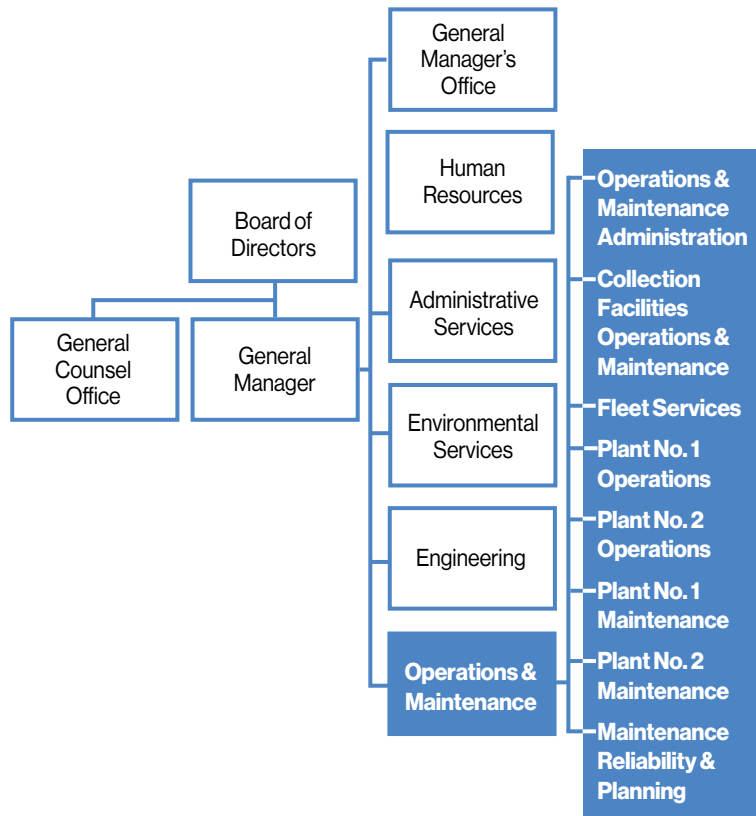
Authorized FTE Positions

Managers	5.00
Supervisors / Professionals	81.00
Administrative / Clerical	30.00
Total	116.00

Staffing Trends



OPERATIONS AND MAINTENANCE DEPARTMENT



Service Description

The Operations and Maintenance (O&M) Department is responsible for treating wastewater, reusing or disposing of the treated wastewater and all residuals, providing maintenance support to all treatment facilities, operating and maintaining the sanitary sewer system pipeline and pumping facilities, and for providing fleet management services. The Department consists of eight divisions:

Operations and Maintenance Administration provides leadership and oversight to all O&M divisions.

Collection Facilities Operations and Maintenance operates and maintains the regional facilities which include gravity sewers and pumping facilities.

Fleet Services provides fleet and heavy equipment services and motor pool management to all OCSD staff.

Plant No. 1 and Plant No. 2 Operations are responsible for the daily management of the wastewater treatment processes, sludge and biosolids treatment and loading processes, power generation, and odor and air quality control processes. Activities also include ensuring compliance with all regulatory permits, support of the Capital Improvement Program, and coordination of construction and maintenance work. Plant No. 1 Operations also ensures the delivery of specification water to the Groundwater Replenishment System.

Plant No. 1 and Plant No. 2 Maintenance are responsible for civil, electrical, facilities, instrumentation and mechanical maintenance of the two treatment plants and pump stations.

Maintenance Reliability and Planning is responsible for the planning function for all maintenance activities as well as reliability engineering for both Plants and the Collections System. The Division also oversees administration of the Civil Assets Maintenance Program (CAMP).

FISCAL YEARS 2018-19 AND 2019-20 BUDGET

Operating Expense					
Category	2016-17 Actual	2017-18 Budget	2017-18 Projected	2018-19 Proposed	2019-20 Proposed
Personnel	\$38,160,572	\$39,653,100	\$38,279,800	\$40,865,600	\$41,863,900
Supplies	14,494,205	15,301,040	14,358,210	15,293,240	18,303,410
Professional / Contractual Services	22,474,690	23,659,380	22,342,640	24,049,250	20,440,640
Research & Monitoring	0	0	0	0	0
Repairs & Maintenance	12,949,070	13,526,360	13,380,360	18,997,480	16,385,740
Utilities	5,364,364	6,858,590	6,056,180	6,282,300	7,854,600
Other	114,925	119,280	114,830	120,660	153,390
Cost Allocation	(140,097)	(207,910)	(84,600)	(103,360)	(104,740)
Total	\$93,417,729	\$98,909,840	\$94,447,420	\$105,505,170	\$104,896,940

Budget Overview

The fiscal year 2018-19 budget for the Operations and Maintenance Department reflects a 6.7 percent increase from the current budget. The increase is primarily due to increases in personnel costs, contractual services, and repairs and maintenance costs, partially offset by a decrease in utility costs.

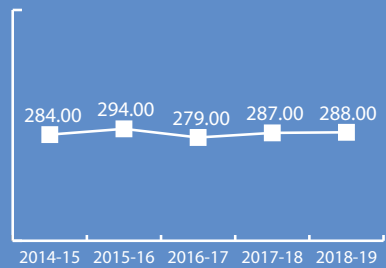
Performance Objectives / Measures

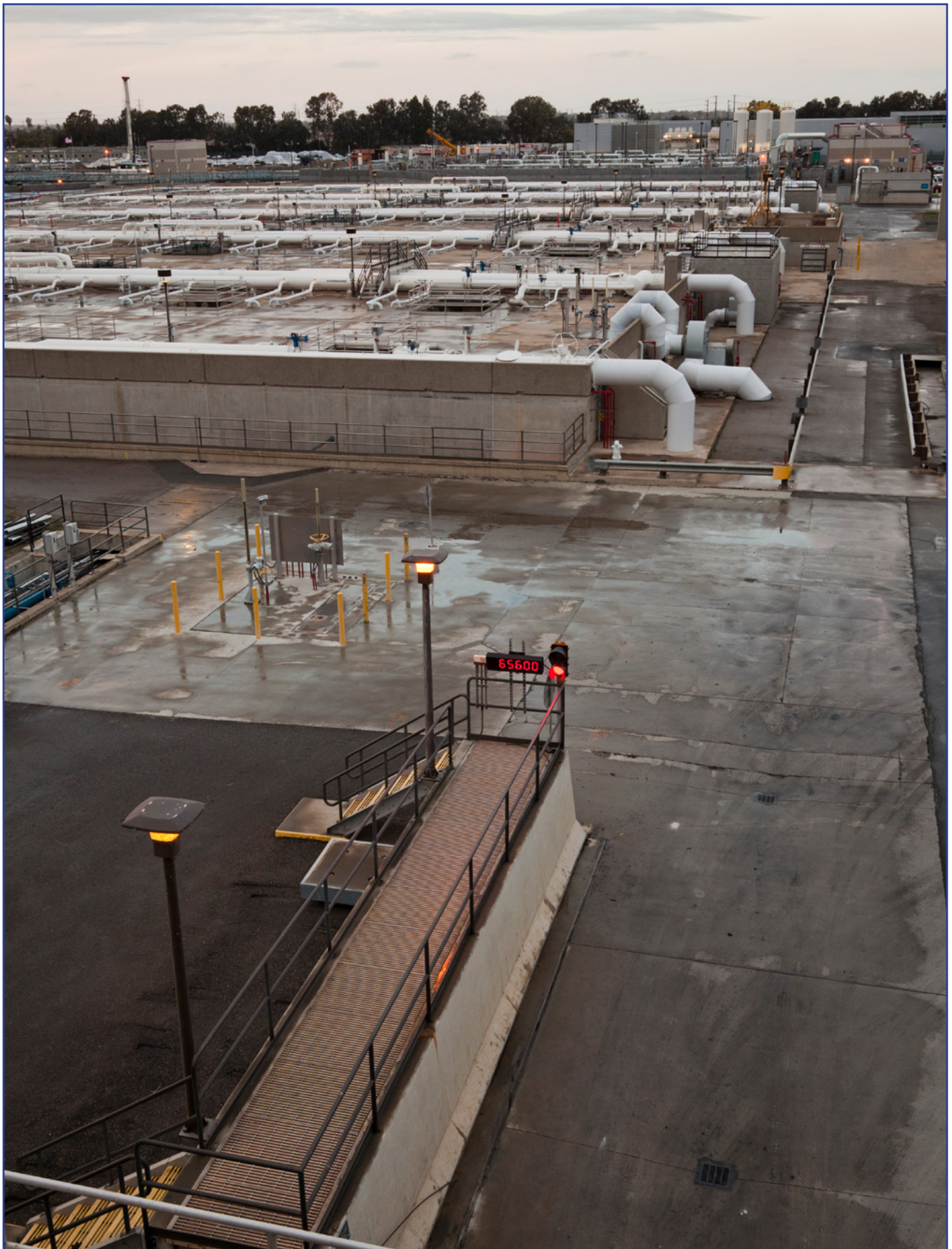
- Achieve 100 percent compliance with water, solids, air, and energy permits.
- Achieve a compliance level of 90 to 100 percent of the O&M performance measurement targets.
- Manage operating expenditures to within 96 to 100 percent of the approved budget.

Authorized FTE Positions

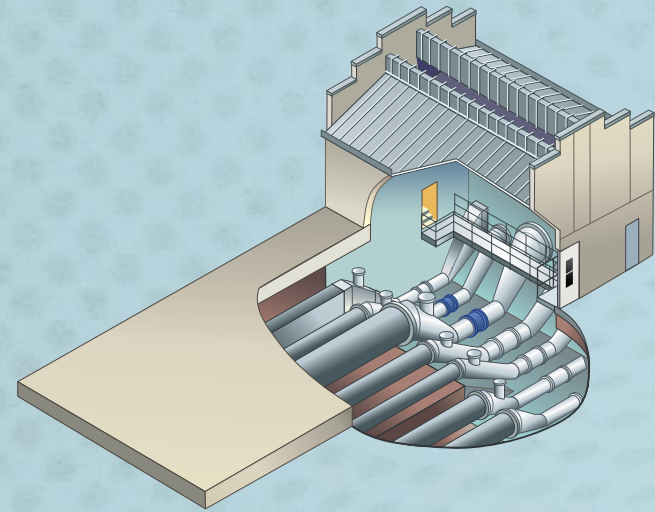
Managers	5.00
Supervisors /Professionals.....	66.00
Administrative /Clerical.....	6.00
Technical.....	1.00
Operations & Maintenance	210.00
Total.....	288.00

Staffing Trends





Orange County Sanitation District Wastewater Treatment Process

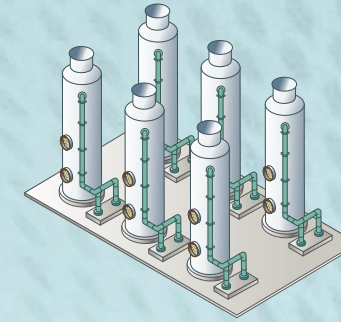
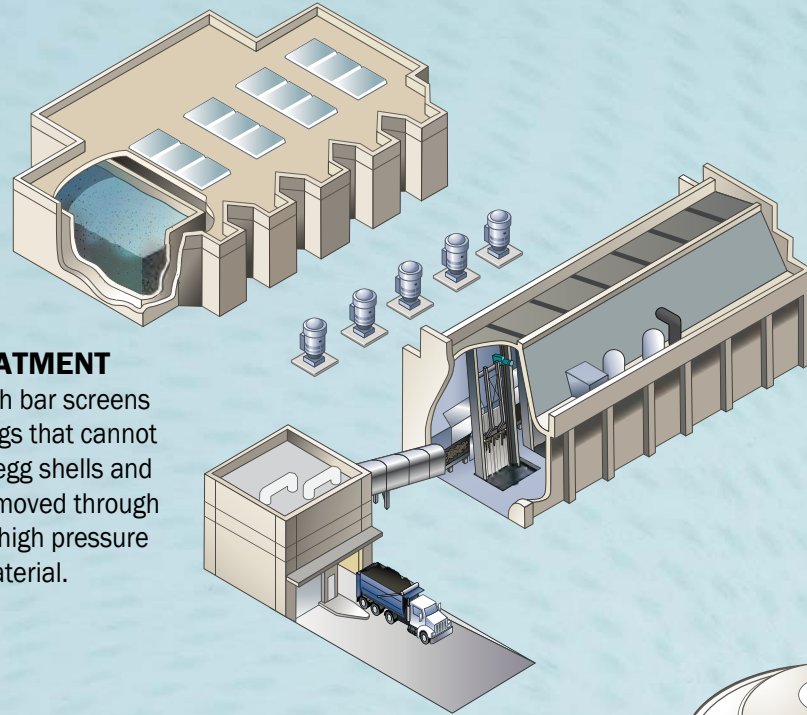


1. METERING AND DIVERSION

Wastewater enters our plant at 2.5 - 5 mph through pipes up to 10 feet in diameter. High tech equipment monitors the temperature, pH, conductivity, and flow of the incoming wastewater.

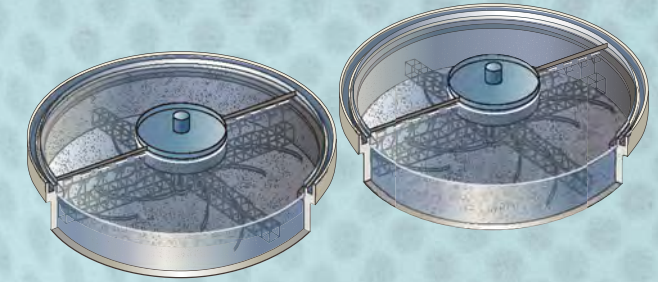
2. PRELIMINARY TREATMENT

Raw sewage passes through bar screens that trap large items like rags that cannot be recycled. Materials like egg shells and coffee grounds are then removed through the grit chamber that uses high pressure air to separate the gritty material.



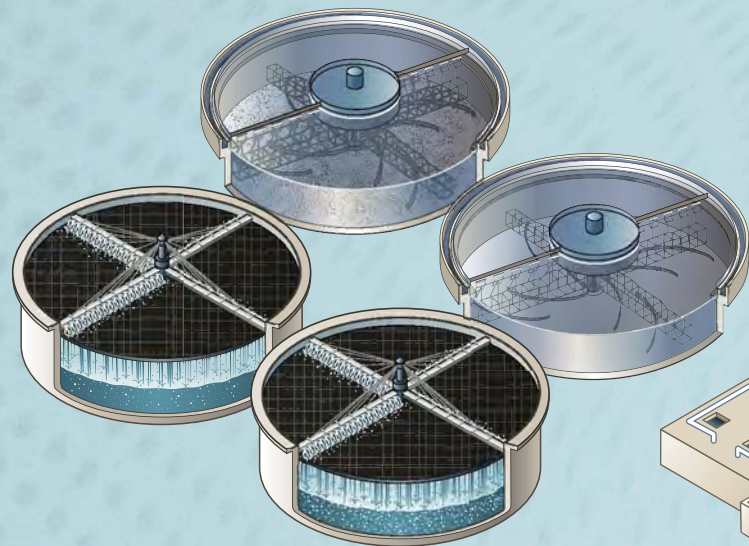
3. AIR SCRUBBER

Hydrogen Sulfide (foul air) is captured throughout the process and funneled into large silos. It passes through a plastic medium and mixes with caustic soda and bleach. Causing the odorous compounds to be neutralized.



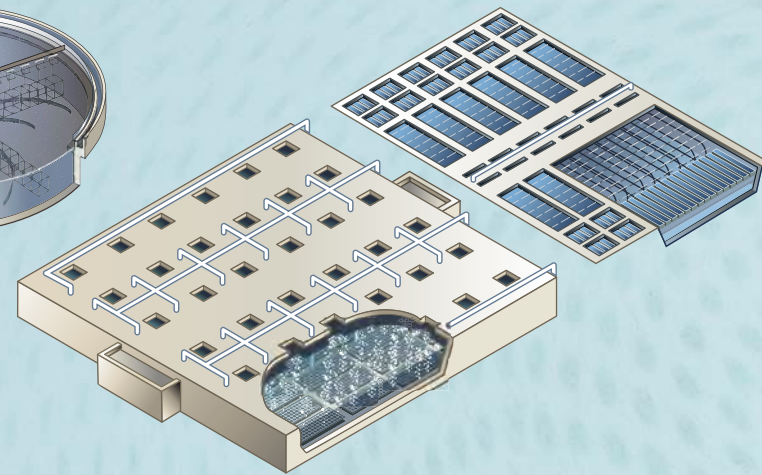
4. PRIMARY TREATMENT

Primary clarifiers or settling basins, slow the water down to let the solids that are within the water settle out, separate and float to the surface. Scraper arms that move along the top and bottom remove up to 80% of the solids. Solids are then sent to digesters for processing.



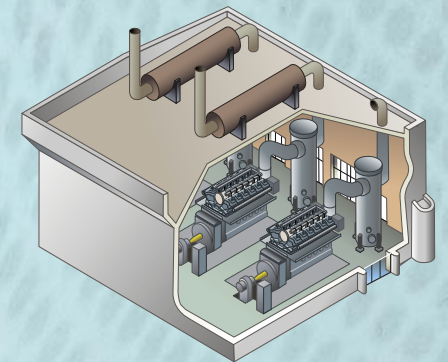
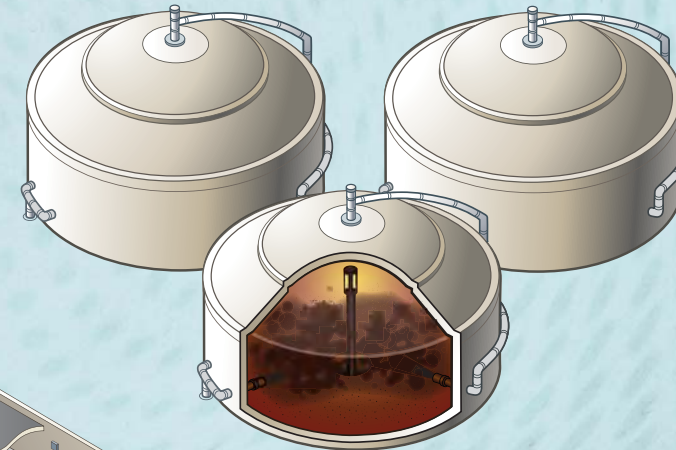
5. SECONDARY TREATMENT

Trickling filters and aeration basins are used to further clean the water. In trickling filters the water is sprayed over a honeycomb type material upon which aerobic bacteria grow. As the water trickles down, the microorganisms consume the solids that were not removed through primary treatment. Aeration tanks use a combination of oxygen and microorganisms, (activated sludge) that consume the remaining organic solids. Treated water is then sent to the Orange County Water District for recycling, or discharged into the ocean.



6. BIOSOLIDS

Solids captured from primary and secondary processes are batch loaded into anaerobic digesters where they are heated to about 98 degrees and treated for 18-21 days. They enter de-watering where water is squeezed out using belt presses. The nutrient rich biosolids are trucked off to farms where they are recycled for direct land application, and composting. The digestion process produces methane gas.



7. CENTRAL GENERATION

Methane gas that is captured from digesters is compressed and used to fuel engine-generators that produce electricity, supplying about 60% of our energy needs.



Our Mission:

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

The Orange County Sanitation District (OCSD) is a public agency that provides wastewater collection, treatment, and disposal services for approximately 2.5 million people in our service area of central and northern Orange County. OCSD is a special district that is governed by a Board of Directors consisting of 25 board members. OCSD has two operating facilities that treat wastewater from residential, commercial, and industrial sources.

Follow the Flow:

Pretreatment: All the cities’ sewers connect to OCSD’s collections system that transports the wastewater to our treatment plants. Before the sewage enters our facilities, our Source Control Program permits and inspects business and industry that discharge waste into the sewers. Maintaining and protecting our trunklines from corrosion and odor issues is also an important part of what we do.

1. Metering and Diversion: Wastewater enters our treatment plants through trunklines up to 10-feet in diameter at a speed of 2.5-5 mph. Automated equipment measures the pH, conductivity, flow, and temperature. Data is monitored by Operators around the clock.

2. Preliminary Treatment: Consists of two parts – bar screens and grit chambers. First, sewage passes through metal bars that catch large items (rags, trash, wood, etc.). Next, grit chambers use air bubbles to suspend lighter material while heavier grit (egg shells, coffee grounds, gravel, sand, etc.) sinks to the bottom and is removed. Screenings and grit are sent to a landfill.

3. Air Scrubber: Most processes that produce odors are covered and the foul air is drawn off for cleaning (deodorizing) by air scrubbers. OCSD uses both Chemical and Biofilter systems. Hydrogen Sulfides (sewer gas smell) are neutralized by using caustic soda, bleach, or live microorganisms.

4. Advanced Primary Treatment: Chemicals (ferric chloride and anionic polymer) are added to the preliminary treated sewage to improve settling. Heavier suspended solids clump together and sink to the bottom. Lighter waste (grease and oil) float to the surface. This process takes about 2 hours and up to 75% of the suspended solids are continuously removed by scraper arms revolve along the top and bottom of the basin. These solids are sent to digesters for further processing.

5. Secondary Treatment: Advanced primary treated sewage is sent to either trickling filters or activated sludge processes where aerobic microorganisms eat the remaining dissolved waste from the water. The secondary treated wastewater is then settled in clarifiers allowing the remaining sludge (either live or dead microorganisms) to be removed. Activated sludge process uses aeration basins to mix oxygen and microorganisms to enhance the waste removal rate. Some of the sludge is pumped back into the aeration basin as return activated sludge to regenerate the basin. The remaining sludge is thickened and sent to digesters.

Final Effluent: Almost all the secondary treated wastewater from Plant 1 is sent to the Orange County Water Districts for advanced treatment through the Groundwater Replenishment System (GWRS). This water is used to replenish Orange County’s groundwater aquifers and protect against seawater intrusion. The secondary treated wastewater from Plant 2 is safely released through our ocean pipeline five miles out to sea at a depth of 200 feet below the ocean surface.

Biosolids

Our Policy: OCSD strives to recycle our biosolids using sustainable options while protecting public health and the environment.

Some of our biosolids are recycled and used like fertilizer on farm fields to create and maintain healthy soils and improve crop yields.

Some of OCSD’s biosolids are further processed through composting to create a consumer-grade soil amendment that is distributed to agricultural, commercial and residential users.

Certified Program

OCSD was the first public wastewater agency in the nation certified by the National Biosolids Partnership (NBP) (www.biosolids.org) for our biosolids program in 2003. Certification is maintained through independent, third-party audits that verify OCSD conforms to the management system standard that was designed by the NBP, U.S. Environmental Protection Agency (EPA) and other clean water partners.



Learn More

Visit our web site at www.ocsewers.com/biosolids for more information and to sign up for periodic biosolids program newsletters using the “Keep me Informed” button.



The Groundwater Replenishment System (GWRS) is the world’s largest advanced water purification system for potable reuse. It takes treated wastewater that otherwise would be sent to the Pacific Ocean and purifies it using a three-step advanced process.

The design and construction of the GWRS was jointly funded by the Orange County Water District (OCWD) and the Orange County Sanitation District (OCSD). Together OCWD and OCSD constructed one of the most celebrated civil engineering and water reuse projects in the world.

The GWRS provides a reliable supply of high-purity near-distilled quality water even during drought and offers a more cost-effective and energy-efficient strategy than importing water from distant sources.

GWRS provides the county with new water it can count on and serves as a model project for other regions throughout the United States and the world that are or will be facing natural and man-made water supply challenges.



Know what should go down the drain that is sewer safe

It’s simple, the toilet is only meant to flush the **three P’s—pee, poop and paper.**

Unfortunately, over the years, people have turned the toilet into a trash can. From medications and sanitary products to deceased pet fish and cigarette butts. If it fits, people flush it. Flushing these types of items down the toilet causes home pipes to clog, wastes water (up to 5 gallons of water every time you flush) and most importantly can have a huge impact on our sewers, not to mention our ocean.



Besides the three P’s **the only other thing going down the drain should be soap and water.** The toilet is not the only drain that people are using to get rid of unwanted waste; people are also known to use the kitchen sink as a trash can. Letting trash flow and go down the kitchen sink (or any other drain in the house) may cause pipes to clog and can eventually lead to sewage spills that harm the environment.

Visit www.What2Flush.com to learn how to properly dispose of common items that people flush or dump down the drain. Let’s keep our wastewater flowing and our oceans clean. Educate yourself and others.

Know **What 2 Flush** and what to put down the drain. Protect our sewers and environment!



Reclamation Plant No. 1 and Administration Offices
10844 Ellis Avenue, Fountain Valley, California 92708

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

Phone: 714.962.2411
Email: forinformation@ocsd.com
Website: OCsewers.com



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