

Fiscal  
Year  
22/23



# RECLAIMABLE FLOW

Capital Improvement Program  
Annual Report



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*Construction of a new Power Building and Headworks Standby Power Building for the Headworks Rehabilitation Project at Plant No. 1 in Fountain Valley.*



*Installation of the Headquarters Building pedestrian bridge spanning across Ellis Avenue in the City of Fountain Valley.*



# From the Director of Engineering

Since 2014, through close collaboration and teamwork, Orange County Sanitation District (OC San) and Orange County Water District (OCWD) have worked closely together with consultants to study and evaluate the feasibility of achieving 100 percent recycling of reclaimable flows to complete the final expansion of OCWD's Groundwater Replenishment System. To accomplish this, OC San and OCWD had to design and construct projects to separate reclaimable and non-reclaimable flows as they entered the plants, store and pump non-reclaimable flows from Plant No. 2 to Plant No. 1, and rehabilitate an existing 66-inch line routed between the two plants along the Santa Ana River. We are all very excited to have accomplished this important and challenging task and it could not have been done without the support of our Board of Directors and OCWD's Board.



Our Asset Management Plan continues to drive our 20-year Capital Improvement Program (CIP) and determine the proper timing of our projects to maximize the life of our assets. The Asset Management Group works continuously with our Operations and Maintenance Department to properly define the timing of large CIP projects and the execution of many small projects essential to the day-to-day operations of the collections and plants to maintain reliable and resilient facilities.

Over the past few years and in the coming years, we have and will be transitioning some large projects from design to construction resulting in a continued increase in our CIP annual spending. Projects in design include the rehabilitation of facilities that still have remaining life and replacement of facilities that are at the end of their useful life.

The Headquarters Building has made some tremendous progress this year. The building is scheduled to be complete in January 2024 and staff are excited to move in after it is ready for occupancy. The new building will move over 300 staff from eight buildings/trailers across Plant No. 1 into one location. The pedestrian bridge will connect the Headquarters Building to Plant No. 1, allowing staff in the Headquarters Building and the plant to maintain a connected and collaborative environment.

During the past year and a half, we have successfully filled several important management, supervision, and staff positions after many retirements to maintain a strong and collaborative Engineering Department that can successfully deliver the CIP.

On behalf of the Engineering Department, I would like to extend our gratitude to the Board of Directors for their continued support of our Capital Improvement Program.

A handwritten signature in black ink, appearing to read "Michael Dorman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael Dorman, PE  
Director of Engineering

The Orange County Sanitation District (OC San) is responsible for collection, treatment, and recycling of wastewater for the northern and central portion of Orange County, California. The wastewater from OC San’s service area travels through 388 miles of regional sewers to one of two treatment facilities, Plant No. 1 in Fountain Valley and Plant No. 2 in Huntington Beach. Together, both plants process approximately 180 million gallons per day of wastewater for approximately 2.6 million people.

The Groundwater Replenishment System (GWRS) is a joint project with the Orange County Water District and is recognized as the world’s largest water purification system for indirect potable reuse. With the completion of the GWRS Final Expansion project in early 2023, OC San recycles up to 130 million gallons per day, or 100 percent of reclaimable flow, providing enough water for one million people!



*A dedication ceremony to celebrate the completion of the GWRS Final Expansion was held on April 14, 2023.*

*Rebar for a new Power Building for the  
Headworks Rehabilitation at Plant No. 1.*



# We give

The Groundwater Replenishment System (GWRS) Final Expansion project produces enough water for one million people. A joint effort between OC San and the Orange County Water District (OCWD), the final expansion allows the recycling of 100 percent of reclaimable flows, maximizing water reuse to its fullest. OCWD's project expanded their GWRS treatment capacity, constructed flow equalization storage tanks and a pump station at Plant No. 2 and rehabilitated an abandoned 66-inch line to convey reclaimable flow from Plant No. 2 to Plant No. 1.

One of the projects to highlight is the Headworks Modifications at Plant No. 2 for GWRS Final Expansion (Project No. P2-122). The Plant No. 2 headworks facility was not originally planned or intended to separate out reclaimable and non-reclaimable secondary effluent flows. For secondary effluent to be an approved water source for GWRS, modifications to the headworks facility and treatment processes needed to be made to separate reclaimable and non-reclaimable flows. With a successful engineering design and construction implementation, Plant No. 2 now operates two distinct treatment paths: reclaimable flows sent to OCWD for GWRS to produce an additional 30 million gallons per day (MGD) of potable water, and non-reclaimable flows discharged into the Pacific Ocean through a five-mile-long ocean outfall.



*At 10 a.m. on December 12, 2022, OC San operators flipped the diversion structure switch at Plant No. 2 in Huntington Beach to officially split flows and begin sending reclaimable secondary effluent to OCWD in Fountain Valley for recycling through GWRS.*



# it 100%

## A look back on GWRS milestones

**2008** GWRS is operational producing 70 MGD, providing enough water for 600,000 people.

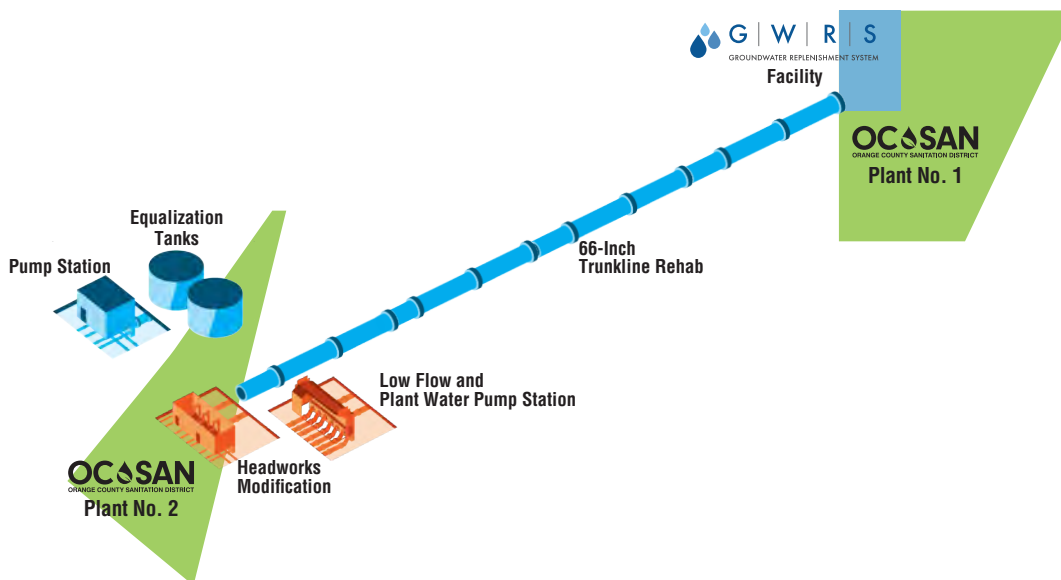
**2015** GWRS is expanded with enough water producing 100 MGD, providing enough water for 850,000 people.

**2018** In commemoration of the GWRS 10th anniversary, the Guinness World Records title for the most wastewater recycled to drinking water in 24 hours is achieved.

**2023** GWRS Final Expansion is completed producing up to 130 MGD, providing enough water for 1 million people.

### GWRS Final Expansion

GWRS Final Expansion was achieved with the following projects, allowing reclaimable flows from Plant No. 2 in Huntington Beach to be sent to the GWRS Facility located adjacent to Plant No. 1 in Fountain Valley.



# Awards

Through a partnership with the Orange County Water District, many accolades were received for the GWRS Final Expansion.

- ◆ Outstanding Water Treatment Project and Project of the Year — American Society of Civil Engineering, Orange County
- ◆ Innovation Award — Association of California Water Agencies
- ◆ Excellence in Environmental Engineering and Science Grand Prize for Design — American Academy of Environmental Engineers and Scientists
- ◆ Excellence Capital Project Award — California Association of Sanitation Agencies
- ◆ Project Achievement — Construction Management Association of America
- ◆ Innovative Project of the Year — California Special Districts Association
- ◆ Utility of the Future — National Association of Clean Water Agencies
- ◆ Project Excellence Award — Water Environment Federation





**OC** San has come a long way since the agency was first created in the 1950s. OC San's Capital Improvement Program (CIP) helps to maintain infrastructure to uphold the commitment of meeting the required level of service and to protect the public health and environment. The CIP provides a roadmap of planned projects, through our annual asset management planning, to maximize the life of our assets and identify the timing of projects for rehabilitation and replacement.

As needs change, the CIP focus evolves to adapt to those changes. Over a decade ago, the CIP put much of its attention on the expansion of treatment facilities and building new structures to support the decision to increase our level of service to full secondary treatment. With both facilities producing high-quality secondary effluent, the CIP focus has shifted to ensuring current treatment process remains reliable as aging infrastructure needs routine maintenance and replacement. The current CIP will be replacing aging pump stations, rehabilitating and replacing pipes, upgrading and replacing treatment processes, and researching the latest technologies.

The Engineering Department is responsible for the implementation of the CIP. The fiscal year 2022-23 CIP included over 145 active projects with a net outlay of \$225.7 million. CIP spending is anticipated to increase to over \$270 million next fiscal year and steadily grow as current construction continues and more projects transition from design to construction.

CIP projects take several years to complete the planning, design, and construction phases. Construction projects, especially those in the Collections Systems, may impact the residents we serve in order for us to continue to provide reliable and resilient facilities. OC San is committed to acting in a timely, accurate, and transparent manner through excellent customer service. The Community Outreach Program ensures residents and stakeholders are informed, understand the project need and benefits, and are prepared for potential impacts. The community outreach team understands the importance of consistent, clear, and proactive communications and works closely with neighborhoods, communities, and cities to keep them well informed and engaged with the infrastructure improvement projects.

Although not inclusive of all current CIP projects, the following maps and pages highlight active large-scale projects in design, construction, or have recently completed.

For more information regarding OC San's CIP and community outreach, please visit [www.ocsan.gov/construction](http://www.ocsan.gov/construction).

*OC San Plant No. 1 with active projects in construction.*



## Asset Management

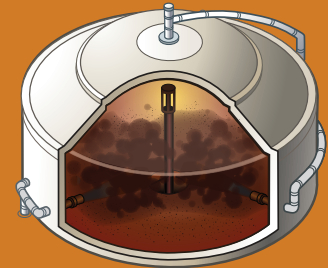
**OC** San's Asset Management Plan provides a high-level summary of the condition of major assets. It identifies key issues and plans or recommends actions to replace and maintain our systems before they fail. It helps to improve resiliency and reliability while lowering life cycle costs of OC San capital facilities having a current estimated replacement value of nearly \$13 billion. The Asset Management Plan is updated on an annual basis. This continual refinement provides more frequently updated dispositions on what we own, what condition they are in, and defines short- and long-term plans for all major assets to help prioritize the criticality of maintenance and capital projects.

## Planning Studies

Planning studies research new technologies and treatment processes, evaluate major initiatives, and when needed, identify future project requirements. Findings support the decision-making process in project elements, scope development, and prioritization of future projects.

**Energy and Digester Gas Master Plan (Project No. PS21-04)** will help to determine a long-term roadmap for OC San's biogas usage, electrical power and infrastructure needs, standby power supply and policy for environmental permit compliance, and energy resiliency, and evaluation of solar and battery storage.

Digester gas produced by anaerobic digestion of wastewater solids during the treatment process is burned in large internal combustion engines at Central Generation Facilities (CenGen) at both plants. Approximately 50 percent of the electricity requirements at Plant No. 1 and approximately 95 percent of the electricity requirements at Plant No. 2 are supplied by CenGen.



**Urban Runoff Optimization Study (Project No. PS21-06)** is a partnership with the Orange County Water District and Orange County Public Works. OC San accepts dry weather urban runoff flows from local agencies to address a public health or environmental problems associated with the runoff discharge that cannot be otherwise economically or practically controlled. OC San's Dry Weather Urban Runoff Diversion Program allows the diversion of up to 10 million gallons per day of dry weather urban runoff into OC San's treatment plants. This study will identify feasible opportunities to utilize the allocated urban runoff diversion capacity in OC San's collections and treatment systems for reclamation and recharging our local groundwater resources.

**Onsite Oxygen Generation Feasibility Study at Plant No. 2 (Project No. PS22-02)** evaluates the feasibility of implementing an onsite oxygen generation system either as a primary source to supplement oxygen supply.

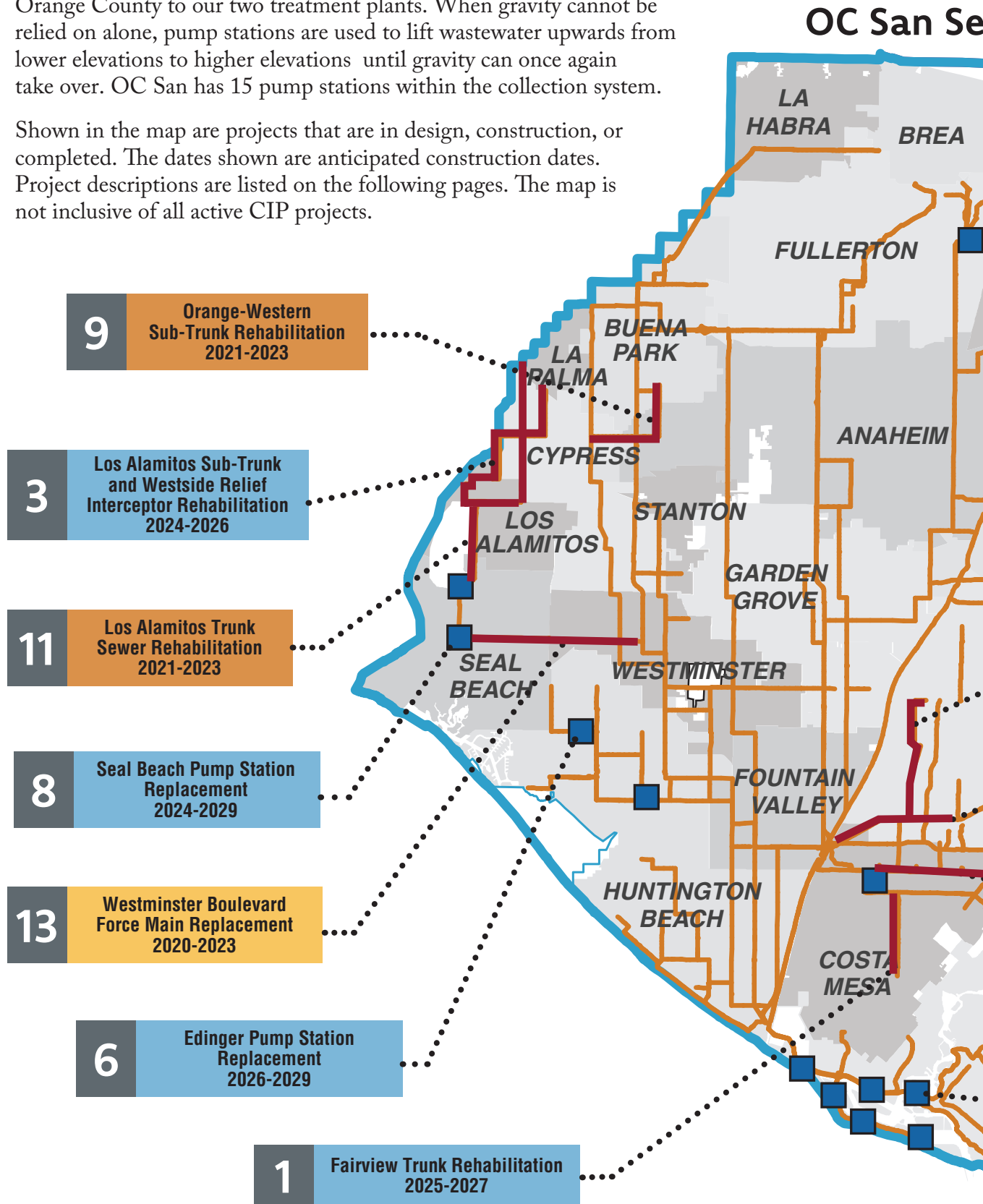
*Evening view of OC San's  
Plant No. 1 digester complex.*



**OC** San's collection system covers the 479 square miles of service area in northern and central Orange County, consisting of 388 miles of regional sewers.

Gravity is used to move wastewater from higher elevations throughout Orange County to our two treatment plants. When gravity cannot be relied on alone, pump stations are used to lift wastewater upwards from lower elevations to higher elevations until gravity can once again take over. OC San has 15 pump stations within the collection system.

Shown in the map are projects that are in design, construction, or completed. The dates shown are anticipated construction dates. Project descriptions are listed on the following pages. The map is not inclusive of all active CIP projects.

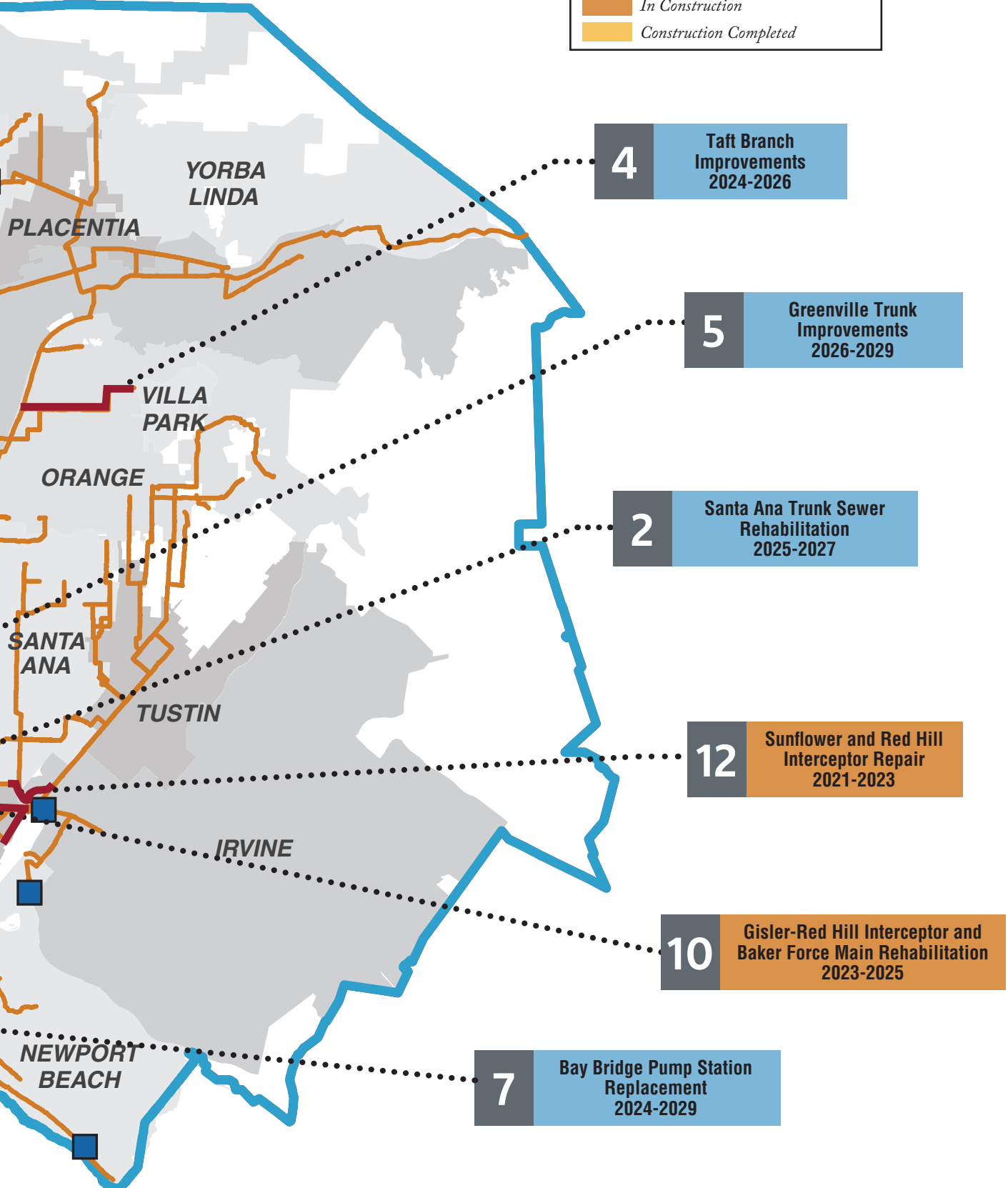




# Service Area

**Legend**

- Pump Stations
- Regional Pipelines
- Project Location
- In Design
- In Construction
- Construction Completed



# Collection System Project Descriptions

## In Design

1

### Costa Mesa

#### **Fairview Trunk Rehabilitation (Project No. 6-20)**

- Anticipated Construction 2025-2027
- Estimated Construction Budget \$10.7 million
- Rehabilitates 2 miles of pipeline and associated manholes on Fairview Road, originally installed in 1952.

2

### Costa Mesa and Santa Ana

#### **Santa Ana Trunk Sewer Rehabilitation (Project No. 1-23)**

- Anticipated Construction 2025-2027
- Estimated Construction Budget \$31.6 million
- Rehabilitates 3 miles of pipeline and associated manholes on the Santa Ana trunk installed in 1968.

3

### Cypress, La Palma, and Los Alamitos

#### **Los Alamitos Sub-Trunk and Westside Relief Interceptor Rehabilitation (Project No. 3-64C)**

- Anticipated Construction 2024-2026
- Estimated Construction Budget \$35 million
- Taking place in over 9 miles of pipelines across several cities, this project will consist of pipeline upsizing using pipe bursting to increase capacity, pipeline joint grouting to stop ground water infiltration, and manhole rehabilitation.

4

### Orange

#### **Taft Branch Improvements (Project No. 2-49)**

- Anticipated Construction 2024-2026
- Estimated Construction Budget \$17.5 million
- Increases capacity in existing pipeline installed in 1960 by replacing a portion of the pipeline in a new alignment.

5

### Santa Ana

#### **Greenville Trunk Improvements (Project No. 1-24)**

- Anticipated Construction 2026-2029
- Estimated Construction Budget \$33.8 million
- Increases capacity in 3 miles of existing pipeline installed in 1952 with new pipeline.

## 6

### Huntington Beach

#### Edinger Pump Station Replacement (Project No. 11-33)

- Anticipated Construction 2026-2029
- Estimated Construction Budget \$7.9 million
- The current pump station was constructed in 1959 and is located on Edinger Avenue is completely underground and only accessible through an access vault located within a sidewalk. The new pump station will be moved to a new nearby location on Edinger Avenue and Graham Street which will also provide safer access.

## 7

### Newport Beach

#### Bay Bridge Pump Station Replacement (Project No. 5-67)

- Anticipated Construction 2024-2029
- Estimated Construction Budget \$75.8 million
- Originally constructed in 1966, the pump station is located on Coast Highway between the Bay Bridge and Bayside Drive and is at the end of useful life. It transports anywhere from between 4 to 18 million gallons of wastewater every day collected from the Newport Beach community. A new pump station will be constructed next to the current pump station. This project will also micro-tunnel two new force mains under the lower Newport Bay Channel.

## 8

### Seal Beach

#### Seal Beach Pump Station Replacement (Project No. 3-67)

- Anticipated Construction 2024-2027
- Estimated Construction Budget \$79 million
- The current pump station constructed in 1970 is located at the corner of Seal Beach Boulevard and Westminster Avenue, adjacent the Naval Weapons Station. A new pump station will have a 50-ft deep wet well allowing for a future project to extend a gravity line directly to the deep wet well, resulting in the ability to abandon an upstream pump station.



*Architectural rendering of the new Seal Beach Pump Station is inspired by the Spanish mission style to blend with the City of Seal Beach City Hall.*

## In Construction

9

Anaheim, Buena Park, and Cypress

**Orange-Western Sub-Trunk Rehabilitation (Project No. 3-64A) \***

- Construction contract combined with Los Alamitos Trunk Sewer Rehabilitation (Project No. 3-64B)
- Construction 2021-2023
- Rehabilitates over 2 miles of sewer pipeline and manhole rehabilitation is nearing completion.

10

Costa Mesa and Irvine

**Gisler-Red Hill Interceptor and Baker Force Main Rehabilitation (Project No. 7-65)**

- Construction 2023-2025
- Construction Budget \$44.7 million
- Construction is about to get started on rehabilitating 3 miles of gravity sewers adjacent the Interstate 405 highway, including several crossings under the highway. The project will also rehabilitate 1 mile of dual force mains, and several valves and piping at the Main Street Pump Station.

11

Los Alamitos and Seal Beach

**Los Alamitos Trunk Sewer Rehabilitation (Project No. 3-64B)**

- Construction 2021-2023
- Construction Budget \$17.9 million
- Rehabilitates two parallel pipelines by removing calcium buildup, grouting pipe joints to stop groundwater infiltration, and manhole rehabilitation.



*Manhole work on the Los Alamitos Trunk Sewer Rehabilitation Project.*

## 12

### Costa Mesa and Irvine

#### Sunflower and Red Hill Interceptor Repair (Project No. 7-66)

- Construction 2021-2023
- Construction Budget \$4.9 million
- This project required temporary flow diversions, bypass pumping, and live sewer entries to epoxy coat the bottom of the pipeline. All work activity was performed during the nighttime hours when flows are at its lowest to mitigate risk of a sewer spill.



*Crews working inside the pipeline on the Sunflower and Red Hill Interceptor Repair Project.*

## Construction Completed

## 13

### Seal Beach and Westminster

#### Westminster Boulevard Force Main Replacement (Project No. 3-62)

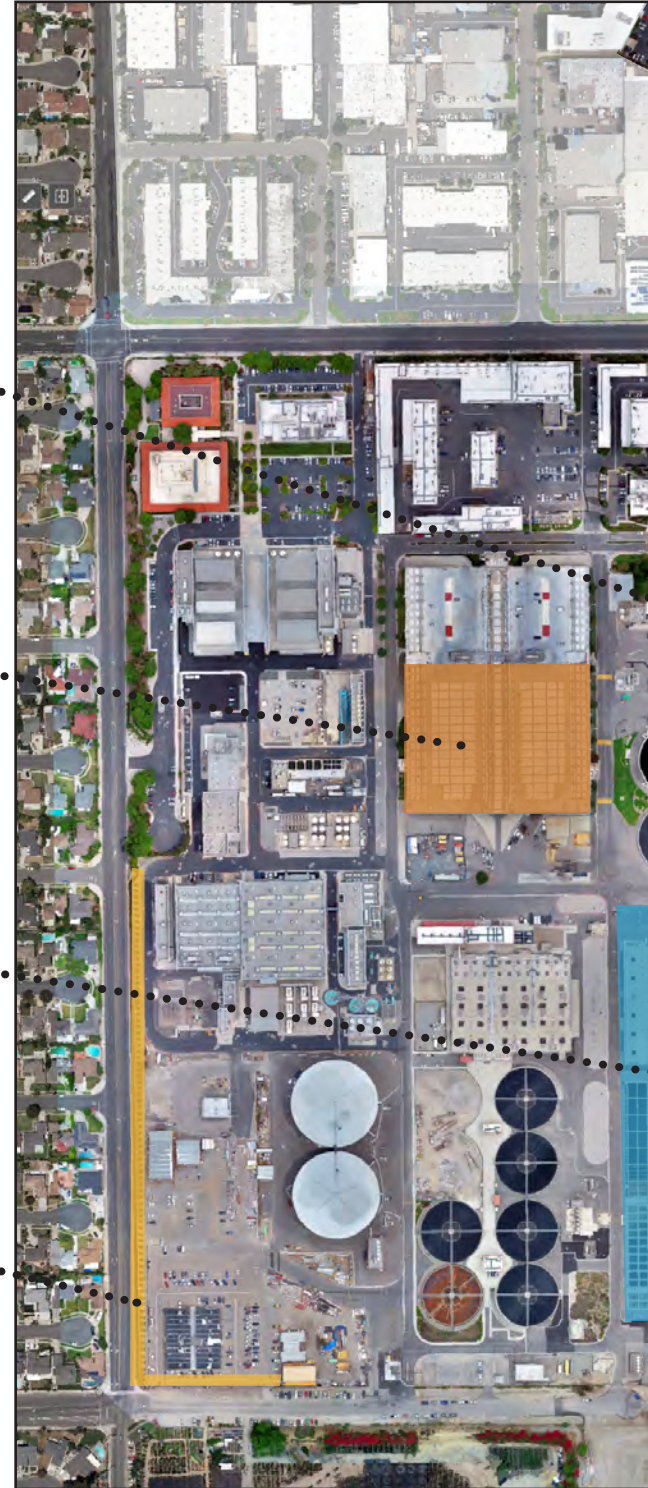
- Construction 2020-2023
- Construction Budget \$30.7 million
- Construction was completed the force mains that run along nearly 3 miles of street. Open cut excavation and slip-lining methods were used. The force main system consists of two parallel pipes, and one pipe remained operational and transporting wastewater flows while work occurred on the second pipe.

Reclamation Plant No. 1 is located in Fountain Valley, California adjacent the Santa Ana River and Interstate 405.

View the map of large-scale CIP projects that are in design, construction, or completed. The dates shown are anticipated construction dates. Project descriptions are listed on the following pages. The map is not inclusive of all active CIP projects.

## Map of P

- 1** Primary Sedimentation Basin 3-5 Replacement  
2027-2032
- 6** Primary Sedimentation Basins Reliability Improvements  
2022-2024
- 2** Activated Sludge 1 and Secondary Clarifier Rehabilitation  
2027-2031
- 7** Southern Perimeter Security and Utility Improvements  
2021-2023



# Plant No. 1

**Legend**

- In Design*
- In Construction*
- Construction Completed*



**5** Headquarters Complex at Plant No. 1 2021-2023

**3** Headworks Rehabilitation at Plant No. 1 2021-2028

**4** Supercritical Water Oxidation Demonstration 2021-2028

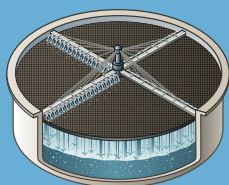
# Plant No. 1 Project Descriptions

## In Design

1

### Primary Sedimentation Basins No. 3-5 Replacement at Plant No. 1 (Project No. P1-126)

- Construction 2027-2032
- Estimated Construction Budget \$119 million
- New clarifiers will be constructed to replace the original clarifiers constructed in the 1950s. Improved hydraulics and gravity flow will allow the removal of the downstream primary effluent pump station.



Primary clarifiers, also known as primary sedimentation basins, are responsible for the first step in the wastewater treatment process. Heavier solids that sink and lighter materials that float are removed from the wastewater.

2

### Activated Sludge-1 and Secondary Clarifier Rehabilitation (Project No. P1-140)

- Construction 2027-2031
- Estimated Construction Budget \$177.5 million
- This project will rehabilitate the activated sludge facility which was originally constructed in 1973 with subsequent projects increasing capacity and rehabilitation in 1999 and 2005.

## In Construction

3

### Headworks Rehabilitation at Plant No. 1 (Project No. P1-105)

- Construction 2021-2028
- Construction Budget \$223.6 million
- As the first point of entry for wastewater, the headworks facility receives untreated wastewater from six major trunk sewers. During a two-year span of a seven-year long project, obsolete structures have been demolished and the construction of new electrical buildings, odor control facility, and grit handling buildings are ongoing. Work has also occurred on the influent pumps, metering and diversion structure, and primary influent splitter boxes. There is challenging rehabilitation work requiring extensive coordination with plant operations and shutdowns, confined space entries, and handling live sewer flows.



*Headworks Rehabilitation at  
Plant No. 1 Project.*



# Leading Technology

## 4 Supercritical Water Oxidation Demonstration at Plant No. 1 (Project No. RE21-01)

At OC San, we will continue to give it 100 percent to explore more opportunities and spearhead innovative engineering efforts to explore possibilities for the future.

Partnering with 374Water, we are piloting something new, and looking to revolutionize our treatment process. A six-ton-per-day demonstration project called AirSCWO Nix6 will use high temperature and pressure to oxidize complex compound materials into more basic and benign compounds. Under “supercritical” conditions, compounds like PFAS “forever chemicals” and microplastics can be destroyed.

While this supercritical water oxidation technology is currently being used in a demonstration project, the potential results could lead to new and transformative ways of handling the solids in the wastewater treatment process. This technology could be the future in how we handle our solids and reducing the amount of biosolids trucked across the state by as much as a 95 percent reduction.



*Complete AirSCWO system inside container.*

# gy for the Future



*Heat exchanger skid and slurry pump skid fully installed into AirSCWO system.*



*Construction of new 109,000 square foot, 3-story Headquarters building and pedestrian bridge.*

**5**

#### **Headquarters Complex at Plant No. 1 (Project No. P1-128A)**

- Construction 2021–2023
- Construction Budget \$104.4 million
- This project will bring together staff of various functions currently dispersed in several aging buildings and trailers into one main headquarters building. It will be located across the street from Plant No. 1 and connected by a pedestrian skybridge over a busy arterial street, the first open air pedestrian bridge in the City of Fountain Valley. The new OC San headquarters will serve as the home of over 300 staff by early 2024, allowing for additional space at Plant No. 1 for wastewater treatment facilities.

**6**

#### **Primary Sedimentation Basins No. 6–31 Reliability Improvements at Plant No. 1 (Project No. P1-133)**

- Construction 2022–2024
- Construction Budget \$6.3 million
- This project increases the operating reliability by replacing the primary influent splitter box launders and primary sludge pumps.



*Street view of the new wall and landscaping for the Southern Perimeter Security and Utility Improvements Project.*

## Construction Completed

7

### **Southern Perimeter Security and Utility Improvements at Plant No. 1 (Project No. P1-134)**

- Construction 2021–2023
- Construction Budget \$4.7 million
- Major construction activities have been completed. A chain link fence was replaced with an eight-foot-tall brick wall and new landscaping, interior security lighting, cameras, and intrusion detection systems. The project also constructed a permanent security guard house.

**T**reatment Plant No. 2 is located in Huntington Beach, California. Just up the street from Pacific Coast Highway and Huntington State Beach, the facility is immediately surrounded by the Santa Ana River, Talbert Marsh, and residential communities.

View the map of large-scale CIP projects at Plant No. 2 that are in design, construction, or completed. The dates shown are anticipated construction dates. Project descriptions are listed on the following pages. The map is not inclusive of all active CIP projects.

## Map of PL

**5** Operations and Maintenance Facility Improvements  
2026-2029

**2** TPAD Digester Facility  
2026-2033

**1** South Perimeter Wall and Soil Improvements  
2024-2026



# Plant No. 2



**Legend**

- In Design*
- In Construction*
- Construction Completed*

**6** Collections Yard Relocation and Warehouse Demolition 2023-2024

**8** Headworks Modifications 2020-2023

**7** A-Side Primary Clarifiers Replacement 2021-2027

**4** Digester Rehabilitation 2025-2027

**3** Activated Sludge Aeration Basin Rehabilitation 2026-2030

# Plant No. 2 Project Descriptions

## In Design

1

### **South Perimeter Wall and Soil Improvements at Plant No. 2 (Project No. P2-128A)**

- Construction 2024-2026
- Estimated Construction Budget \$23.9 million
- The south end of Plant No. 2 is bordered by the Talbert Marsh located between Brookhurst Street and the Santa Ana River. The existing chain link fence will be replaced with a concrete wall oscillating in height between 8- to 10-ft in a wave like pattern to mimic the neighboring ocean view. The wall will provide many benefits: site security of a critical infrastructure facility, protection from future sea level rise protection, tsunami forces and associated flooding, and visual screening of current and future process facilities. As a design feature, the wall will include stamped concrete artwork of marsh birds to blend into the Talbert Marsh surroundings.

2

### **TPAD Digester Facility at Plant No. 2 (Project No. P2-128)**

- Construction 2026-2033
- Estimated Construction Budget \$408 million
- The project will construct a new digester feed facility, five new thermophilic digesters, and batch tanks. Temperature-Phased Anaerobic Digestion (TPAD) will produce Class A biosolids through advanced technology solutions. Class A biosolids are a high-quality fertilizer that meets U.S. Environmental Protection Agency guidelines. This upgrade will provide more sustainable biosolid reuse opportunities with food crop applications. Current biosolids are used in landscaping amendments, compost, and non-food crop application.

3

### **Activated Sludge Aeration Basin Rehabilitation at Plant No. 2 (Project No. P2-136)**

- Construction 2026-2030
- Estimated Construction Budget \$40.6 million
- This project will include structural rehabilitation of the aeration basin portion of the secondary treatment process, including the replacement of mixers and isolation gates.

4

### **Digesters Rehabilitation at Plant No. 2 (Project No. P2-137)**

- Construction 2025-2027
- Estimated Construction Budget \$28 million
- Solids treatment at Plant No. 2 is handled by 18 digesters, built between the 1960s and 1980s. This is a rehabilitation project to extend the life of the digesters for reliable and operational performance for the next 15 years.

5

### **Operations and Maintenance Facility Improvements at Plant No. 2 (Project No. P2-138)**

- Construction 2026-2029
- Estimated Construction Budget \$48 million
- A new Operations building will be constructed at the northern area of Plant No. 2. The existing Maintenance building will be rehabilitated to address seismic, geotechnical, and code compliance deficiencies. In addition, a new main entrance will be relocated to improve safer egress when exiting the plant.



## In Construction

6

### Collections Yard Relocation and Warehouse Demolition at Plant No. 2 (Project No. P2-127)

- Construction 2023-2024
- Construction Budget \$6.5million
- The collections yard and warehouse are support facilities that share space with the process facilities at Plant No. 2. To free up space for the future digester facility project currently in design, the collections yard will be relocated before construction of the digester complex project commences. The current warehouse building will also be demolished.



*A-Side Primary Clarifiers Replacement at Plant 2 in Huntington Beach.*

7

### A-Side Primary Clarifiers Replacement at Plant 2 (Project No. P2-98A)

- Construction 2021-2027
- Construction Budget \$112.3 million
- The oldest set of primary clarifiers constructed in the 1960s will be replaced with the construction of four new primary clarifiers with odor control treatment. Construction will also include two primary sludge pump stations, odor treatment complex, electrical distribution center, and process controls. 7-ft diameter reinforced concrete pipe has arrived which will be used to transfer flows to and from the new primary clarifiers when construction is completed.

## Construction Completed

8

### Headworks Modifications at Plant No. 2 for GWRS Final Expansion (Project No. P2-122)

- Construction 2020-2023
- Construction Budget \$15.2 million
- In support of the Groundwater Replenishment System Final Expansion, this project allows the headworks facility to handle reclaimable and non-reclaimable flows separately. The successful completion of this project allows OC San to provide 100 percent reclaimable flow for water reuse.

Projects that impact both treatment plants are categorized as a joint facility project. The two maps show some of the projects in design or construction that impact both treatment plants. The dates shown are anticipated construction dates. Project descriptions are listed on the following pages.


### Plant No. 1 in Fountain Valley



**3** Engine and Generator Overhauls 2022-2026

**1** Digester Gas Facilities Replacement 2026-2032

**Legend**

 *In Design*

 *In Construction*

# Plant No. 2 in Huntington Beach



**1**

**Digester Gas Facilities Replacement  
2026-2032**

**3**

**Engine and Generator Overhauls  
2022-2026**

**2**

**Outfall Low Flow Pump Station  
2019-2025**

# Joint Facility Project Descriptions

## In Design

1

### Digester Gas Facilities Replacement (Project No. J-124)

- Construction 2026-2032
- Estimated Construction Budget \$122 million
- There are digester gas facilities at both Plant Nos. 1 and 2 that capture, clean, and compress digester gas from the treatment process. The digester gas is then converted into power at the Central Generation (CenGen) facilities that produce electricity to power the treatment plants. The digester gas facilities will be rehabilitated to meet regulatory guidelines and projected gas production.

## In Construction

2

### Outfall Low Flow Pump Station (Project No. J-117B)

- Construction 2019-2025
- Construction Budget \$93.5 million
- The ocean outfall booster station at Plant No. 2 was designed to pump secondary effluent into the Pacific Ocean through the five-mile-long ocean outfall. Now that OC San can provide 100 percent reclaimable flow to the Orange County Water District for water reclamation, this project constructs a new low flow pump station with appropriately sized smaller pumps to handle the reduced dry-weather flows in a more efficient manner. The large outfall pumps are being rehabilitated to provide a reliable system during wet weather flows. This project is also constructing a new plant water pump station for reclaimable flows.



*New Low Flow Pump Station at Plant No. 2 that pumps to our ocean outfall.*

### 3

#### Engine and Generator Overhauls at Plant No. 1 and 2 (Project No. J-135B)

- Construction 2022-2026
- Construction Budget \$31.9 million
- Both plants have CenGen facilities with large internal combustion engines to generate electricity using digester gas and providing heating for processes and facilities. The reliable operation of the CenGen facilities is key to assuring continuous operations of the process plants.

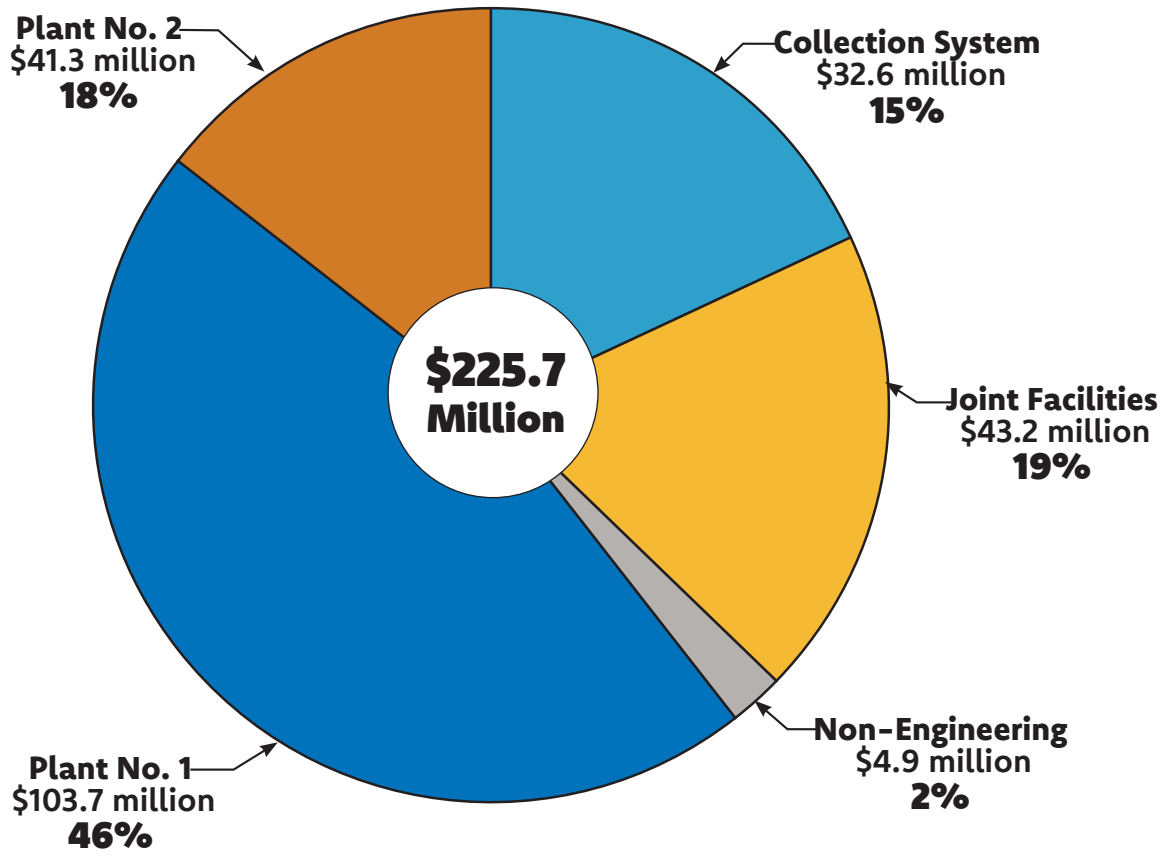
These engines and generators have been in service since the early 1990s and have reached runtime hours and condition that require a complete overhaul to ensure reliable operation. This project will overhaul two engine-generator sets at Plant No. 1 and three sets at Plant No. 2.



*Engine and Generator Overhaul Project at Plant No. 1.*

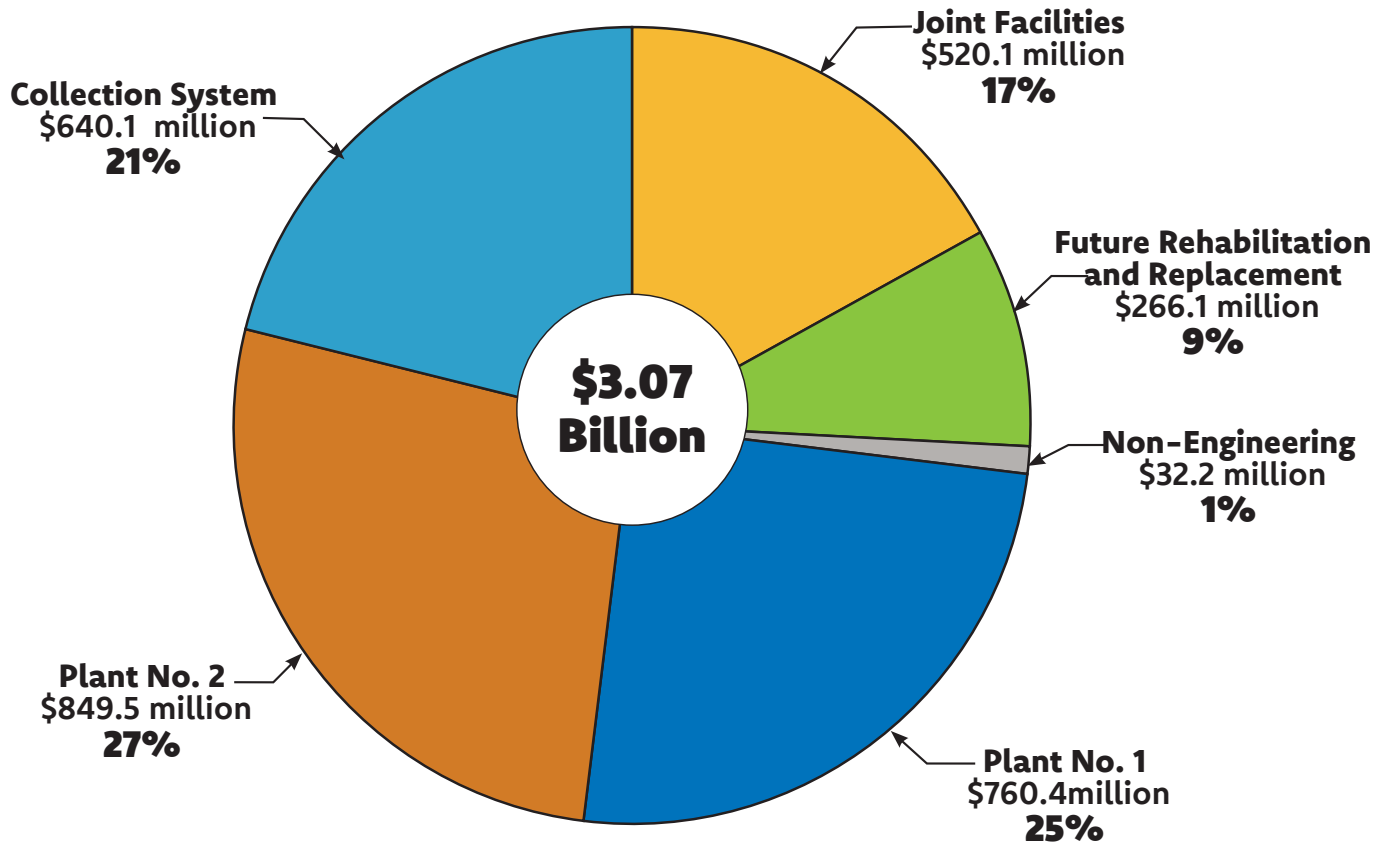
The CIP for fiscal year 2022/23 included over 145 active projects with a CIP net outlay of \$225.7 million. Nearly half of that spending occurred on Plant No. 1 projects, including the Headquarters Complex project and Headworks Rehabilitation project.

### Fiscal Year 2022/23 CIP Expenditures



The CIP includes large capital projects with a total 10-year estimated net CIP outlay, or cashflow expenditure, of \$3.07 billion.

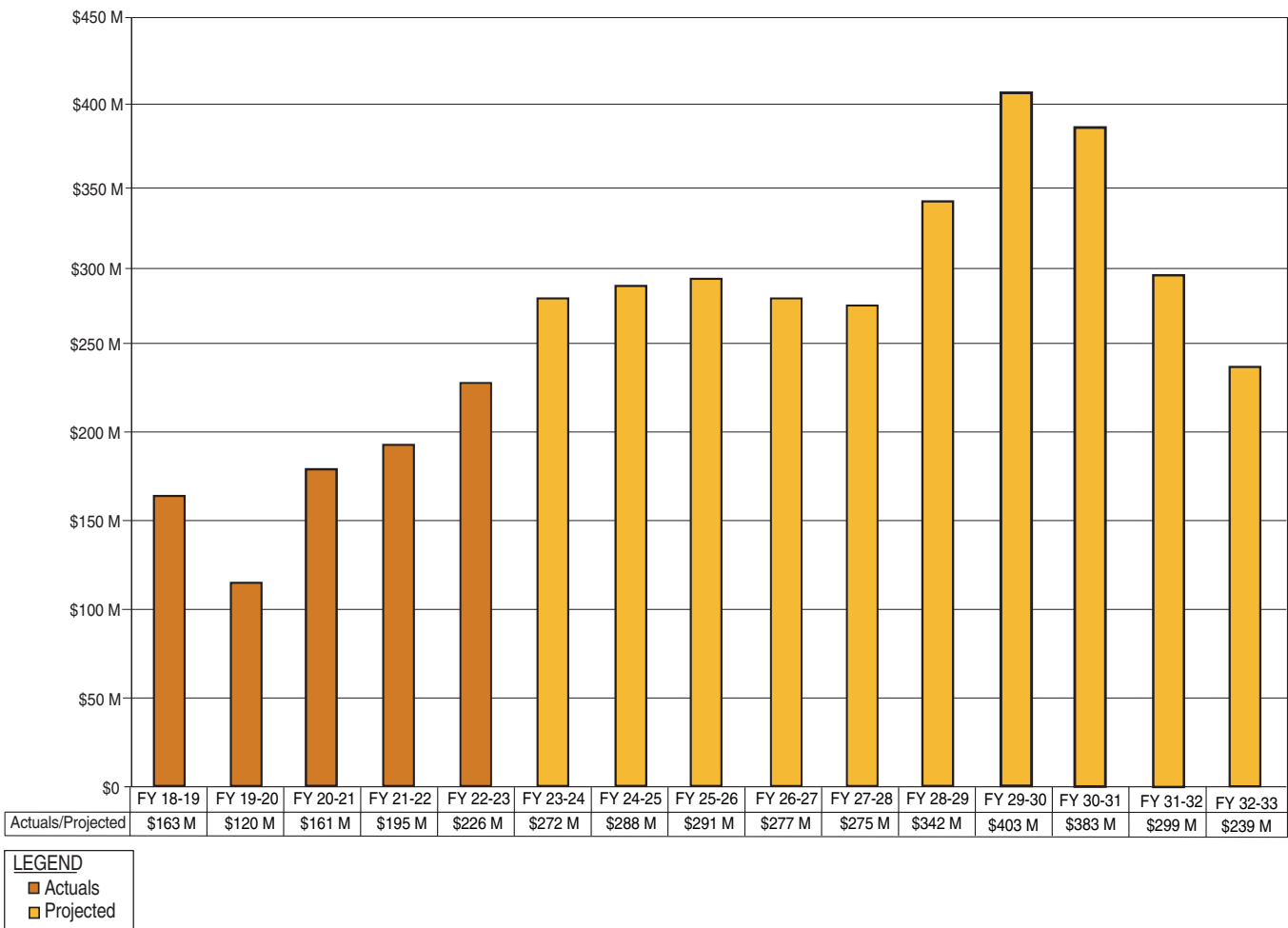
## 10-Year Net CIP Outlay Fiscal Years 2022/23 through 2032/33



# Program Cash Flow

The CIP is validated as part of the budget process each year. The CIP projected net outlay, or spending forecast, is refined as project budgets are reevaluated, looking at active and future CIP projects and ensuring the project scope, schedule, and cost estimates are up to date. The Annual Net CIP Outlay chart shows the historical expenditures over the past five years and the projected CIP spending for the next ten years. The rise in spending is contributed to the increase of projects that will be transitioning in construction.

## Annual Net CIP Outlay







*Slurry placement under a 96-inch pipeline on the Outfall Low Flow Pump Station Project.*

The following tables show the planning studies, design, and construction contracts awarded during the fiscal year 2022/23 annual reporting period. Not included in the tables are the non-engineering small capital operations, maintenance, and information technology projects.

PLANNING STUDIES CONTRACTS AWARDED					
Date of Award	Project No.	Project Name	Consultant	Contract Amount	Location(s)
September 2022	PS21-01	Exterior Lighting Study at Plant Nos. 1 and 2	IDS Group, Inc.	\$151,660	Plant Nos. 1 and 2
September 2022	PS21-08	Pure Oxygen Activated Sludge Operations Study at Plant No. 2	Hazen and Sawyer	\$241,791	Plant No. 2
November 2022	PS22-03	CEQA/MMRP Measures Review	HDR Engineering, Inc.	\$24,963	Plant Nos. 1 and 2, OC San service area
February 2023	PS22-02	Onsite Oxygen Generation Feasibility Study at Plant No. 2	Black & Veatch	\$197,937	Plant No. 2
February 2023	PS21-05	CAD Design Manual Update for 3D Design	The Austin Company	\$416,000	Plant Nos. 1 and 2
March 2023	PS21-06	Urban Runoff Optimization Study	Michael Baker International, Inc.	\$733,553	OC San service area
				<b>\$1,765,904</b>	

DESIGN CONTRACTS AWARDED					
Date of Award	Project No.	Project Name	Consultant	Contract Amount	Location(s)
July 2022	6-20	Fairview Trunk Rehabilitation	Dudek	\$1,200,000	Costa Mesa
July 2022	P1-137	Supports Buildings Seismic Improvements at Plant No. 1	Simpson, Gumpertz, and Heger	\$1,900,000	Plant No. 1
October 2022	11-33	Edinger Pump Station Replacements	Arcadis	\$3,125,590	Huntington Beach
October 2022	1-24	Greenville Trunk Improvements	Brown and Caldwell	\$4,730,000	Santa Ana
December 2022	FE21-07	Liquid Oxygen Tank A Replacement at Plant No. 2	J. R. Filance Construction Company, Inc.	\$2,608,007	Plant No. 2
December 2022	P1-140	Activated Sludge-1 and Secondary Clarifier Rehabilitation	HDR Engineering, Inc.	\$18,462,443	Plant No. 1
January 2023	P2-138	Operations and Maintenance Facility Improvements at Plant No. 2	Stantec Architecture Inc.	\$7,914,529	Plant No. 2
March 2023	P2-135	Chemical Systems Rehabilitation at Plant No. 2	Lee & Ro, Inc.	\$862,328	Plant No. 2
				<b>\$40,802,897</b>	

CONSTRUCTION CONTRACTS AWARDED					
Date of Award	Project No.	Project name	Contractor	Contract Amount	Location(s)
July 2022	FE19-12	Rebuild Shop Fume Extractor Installation at Plant No. 1	RAN Enterprises, Inc	\$239,304	Plant No. 1
July 2022	J-135B	Engine and Generator Overhauls at Plant No. 1 and 2	Cooper Machinery Services	\$31,915,929	Plant Nos. 1 and 2
September 2022	FE20-01	Wastehauler Station Safety and Security Improvements	Leed Electric	\$2,101,171	Plant No. 1
November 2022	FE20-04	GenGen Cooling Water Pipe Replacement at Plant No. 2	Innovative Construction Solutions	\$3,487,600	Plant No. 2
December 2022	FE20-03	Return Activated Sludge Discharge Piping Replacement at Activated Sludge Plant No. 1	GSE Construction Company, Inc.	\$3,985,400	Plant No. 1
December 2022	FE20-09	GenGen Smoke Detection Improvements at Plant No. 1 and No. 2	ADT Commercial, LLC	\$313,000	Plant Nos. 1 and 2
December 2022	P1-132	Uninterruptable Power Supply Improvements at Plant 1	Leed Electric	\$5,775,340	Plant No. 1
December 2022	RE21-01	Supercritical Water Oxidation Demonstration at Plant No. 1	Garney Pacific, Inc.	\$1,172,000	Plant No. 1
January 2023	FE21-07	Liquid Oxygen Tank A Replacement at Plant No. 2	J.R. Filanc Construction Company, Inc.	\$2,608,007	Plant No. 2
February 2023	5-68	Newport Beach Pump Station Pressurization Improvements	Innovative Construction Solutions	\$937,500	Newport Beach
April 2023	FE20-08	Olive Sub-Trunk Siphon Rehabilitation at Santa Ana River	MMC, Inc.	\$1,944,000	Anaheim, Orange
May 2023	7-65	Gisler-Red Hill Interceptor and Baker Force Main Rehabilitation	Steve P. Rados, Inc.	\$44,706,000	Costa Mesa, Irvine
May 2023	FE21-06	Chemical Dosing Station Installation at Westside Pump Station	RP Controls, Inc.	\$62,565	County of Orange
				<b>\$98,311,254</b>	

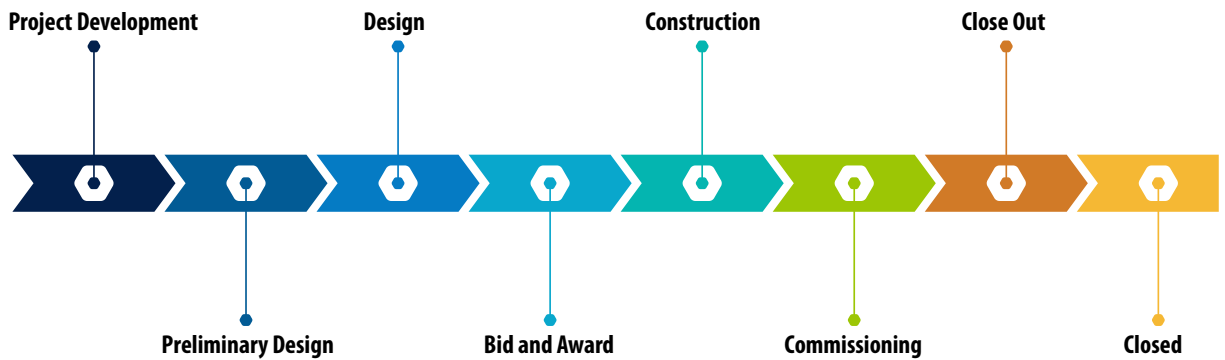
**A** total of 17 construction contracts were completed during the fiscal year 2022/23, closing out a total contract amount of \$93.7 million.

CONSTRUCTION CONTRACTS COMPLETED					
Date of Completion	Project No.	Project Name	Contractor	Total Contract Amount	Location(s)
July 2022	2-72B	Newhope-Placentia Trunk Sewer Replacement	OHL USA	\$63,846,884	Anaheim, Fullerton
August 2022	J-135A	Central Generation Engine Overhauls at Plant No. 1	Cooper Machinery Services	\$4,024,772	Plant No. 1
September 2022	FRC-0002	Bay Bridge Pump Station Valve Replacement	Innovative Construction Solutions	\$886,865	Newport Beach
September 2022	P1-135	Digester Ferric Chloride Piping Replacement at Plant No. 1	PPM Contracting	\$520,608	Plant No. 1
September 2022	P2-123	Return Activated Sludge Piping Replacement at Plant 2	Shimmick Construction	\$6,346,587	Plant No. 2
September 2022	J-127	Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	Innovative Construction Solutions	\$814,168	Plant Nos. 1 and 2
October 2022	FR1-0008	Trickling Filter 480 Volt Cable Replacement at Plant No. 1	Baker Electric	\$278,726	Plant No. 1
January 2023	FR2-0022	Digester O Structural Repairs at Plant No. 2	Jamison Engineering	\$89,500	Plant No. 2
January 2023	FR1-0014	Laboratory Building HVAC Controls Replacement at Plant No. 1	Retrofit Service Company, Inc.	\$191,093	Plant No. 1
January 2023	FE21-02	Lighting Improvements Boiler and Sludge Dewatering Areas at Plant No. 1	Leed Electric	\$81,897	Plant No. 1
February 2023	FE20-07	Santa Ana Trunk Rehabilitation at Plant No. 1	Sancon Technologies Inc.	\$400,579	Plant No. 1
March 2023	FE18-15	Plant Boiler System Relief at Plant No. 2	MMC, Inc.	\$254,528	Plant No. 2
March 2023	FE18-16	Truck Loading Basement Drain Modifications at Plant No. 1	MMC, Inc.	\$176,314	Plant No. 1
March 2023	FR1-0012	Building B Floor Replacement, Jib Crane, and Forklift Pad	Vicon Enterprise	\$197,108	Plant No. 1
March 2023	FRC-0012	Springdale-Relief Concrete Encasement Extension at Wintersburg-Channel	J.F. Shea Construction, Inc.	\$167,694	Huntington Beach
May 2023	P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Shimmick Construction	\$15,231,246	Plant No. 2
June 2023	FE19-13	VFD Replacements at Seal Beach Pump Station	Energy Management Corporation	\$142,641	Seal Beach
				<b>\$93,651,210</b>	

*Above ground bypass piping set up for the Sunflower and Red Hill Interceptor Repair Project in the City of Costa Mesa.*



The project life cycle consists of various phases that make up the path a project takes from start to finish.



This section includes all the active studies and projects during the FY 2022-23 reporting period from various phases of the project. The project budget includes costs for construction services and also includes design costs and administrative costs throughout the life cycle of the project. The project status is as of June 30, 2023.

**147** active CIP projects

Largest Project Budget **\$555,000,000**

Smallest Project Budget **\$230,000**

**28** projects in preliminary design or design

**27** projects in construction

*Nightwork on a manhole on the Los Alamitos Trunk Sewer Rehabilitation Project.*



Findings from planning and research studies help to develop future CIP projects. Below are studies worked on during the fiscal year 2022/23 reporting period.

PLANNING AND RESEARCH STUDIES				
Project No.	Project Name	Status	Project Budget	Location(s)
PS18-06	Go/No-Go Lights and Signage	Active	\$495,000	Plant Nos. 1 and 2, OC San Service Area
PS18-09	Ocean Outfall Condition Assessment and Scoping Study	Completed	\$5,302,717	Huntington Beach
PS19-03	Laboratory Rehabilitation Feasibility Study	Active	\$450,000	Plant No. 1
PS20-01	Collections Yard Relocation Feasibility Study	Completed	\$279,867	Plant No. 2
PS20-02	Collection System Flow Level Monitoring Study	Active	\$743,218	OC San Service Area
PS20-03	Truck Loading Bay Odor Control Improvements Study at Plant No. 2	Completed	\$319,189	Plant No. 2
PS20-04	Power Generation Overhaul Feasibility Study	Completed	\$281,624	Plant Nos. 1 and 2
PS20-05	GenGen Pressure Vessel Integrity Assessment at Plant Nos. 1 and 2	Completed	\$269,934	Plant Nos. 1 and 2
PS20-07	College Pump Station Wet Well Condition Assessment Study	Completed	\$181,253	Costa Mesa
PS20-09	Thickening & Dewatering Plant Water Study at Plant No. 1	Active	\$400,000	Plant No. 1
PS21-01	Exterior Lighting Study at Plant Nos. 1 and 2	Active	\$345,533	Plant Nos. 1 and 2
PS21-02	Public Announcement and Fire System at Plant Nos. 1 and 2	Active	\$500,000	Plant Nos. 1 and 2
PS21-04	Energy and Digester Gas Master Plan	Active	\$1,785,000	Plant Nos. 1 and 2
PS21-05	CAD Design Manual Update for 3D Design	Active	\$758,000	Plant Nos. 1 and 2
PS21-06	Urban Runoff Optimization Study	Active	\$1,100,000	Plant Nos. 1 and 2
PS21-07	Process Simulation Model Development for GenGen Facilities	Active	\$121,000	Plant Nos. 1 and 2
PS21-08	Pure Oxygen Activated Sludge Operations Study at Plant No. 2	Active	\$360,000	Plant No. 2
PS21-10	Integrated Nitrogen Management	Active	\$211,000	Plant Nos. 1 and 2
PS22-02	Onsite Oxygen Generation Feasibility Study at Plant No. 2	Active	\$295,000	Plant No. 2
PS22-03	CEQA/MMRP Measures Review	Active	\$40,000	Plant Nos. 1 and 2, OC San Service Area
RE19-01	Primary Scum Equipment Evaluation at Plant No. 1	Completed	\$40,825	Plant No. 1
RE20-02	Chemical Resilience Study at Plant No. 1 and 2	Completed	\$321,027	Plant Nos. 1 and 2
RE20-06	Co-Thickened Sludge Pump Trial at Plant No. 1	Active	\$160,000	Plant No. 1
RE21-01	Supercritical Water Oxidation Demonstration at Plant No. 1	Active	\$7,941,029	Plant No. 1



The following pages show all the active and completed projects managed by the Engineering Department throughout both plants and the collection system during the fiscal year 2022/23. These projects can take several years as they progress through the various phases of the project life cycle as shown in the status, as of June 30, 2023. Non-engineering projects are not included in the tables.

RECLAMATION PLANT NO. 1 IN FOUNTAIN VALLEY			
Project No.	Project Name	Status	Project Budget
P1-105	Headworks Rehabilitation at Plant No. 1	Construction	\$340,000,000
P1-126	Primary Sedimentation Basins No. 3-5 Replacement at Plant No. 1	Preliminary Design	\$183,000,000
P1-128A	Headquarters Complex at Plant No. 1	Construction	\$166,318,715
P1-132	Uninterruptable Power Supply Improvements at Plant No. 1	Construction	\$9,600,000
P1-133	Primary Sedimentation Basins No. 6-31 Reliability Improvements at Plant No. 1	Construction	\$12,700,000
P1-134	South Perimeter Security and Utility Improvements at Plant No.1	Construction	\$8,150,000
P1-135	Digester Ferric Chloride Piping Replacement at Plant No. 1	Close-Out	\$1,260,000
P1-137	Supports Buildings Seismic Improvements at Plant No. 1	Preliminary Design	\$23,730,000
P1-140	Activated Sludge-1 and Secondary Clarifier Rehabilitation	Preliminary Design	\$280,000,000

TREATMENT PLANT NO. 2 IN HUNTINGTON BEACH			
Project No.	Project Name	Status	Project Budget
P2-122	Headworks Modifications at Plant No. 2 for GWRS Final Expansion	Close-Out	\$30,400,000
P2-123	Return Activated Sludge Piping Replacement at Plant No. 2	Close-Out	\$10,000,000
P2-127	Collections Yard Relocation and Warehouse Demolition at Plant No. 2	Bid and Award	\$6,700,000
P2-128	TPAD Digester Facility at Plant No.2	Design	\$555,000,000
P2-128A	South Perimeter Wall and Soil Improvements at Plant No. 2	Design	\$33,000,000
P2-135	Chemical Systems Rehabilitation at Plant No. 2	Preliminary Design	\$8,000,000
P2-136	Activated Sludge Aeration Basin Rehabilitation at Plant No. 2	Project Development	\$65,600,000
P2-137	Digesters Rehabilitation at Plant No. 2	Preliminary Design	\$45,000,000
P2-138	Operations and Maintenance Facility Improvements at Plant No. 2	Preliminary Design	\$84,000,000
P2-139	Emergency Overflow Pipes and Wingwalls Rehabilitation at Plant No. 2	Project Development	\$4,370,000
P2-98A	A-Side Primary Clarifiers Replacement at Plant No. 2	Construction	\$165,890,806
P2-98B	B/C-Side Primary Clarifiers Interm Repair at Plant No. 2	Close-Out	\$12,352,521

JOINT FACILITIES PROJECTS			
Project No.	Project Name	Phase	Project Budget
J-98	Electrical Power Distribution System Improvements	Design	\$27,700,000
J-117B	Outfall Low Flow Pump Station	Construction	\$138,386,171
J-120	Process Control Systems Upgrades	Construction	\$31,700,000
J-120A	Control Room Reconfiguration at Plant No. 1 and Plant No. 2	Project Development	\$3,800,000
J-124	Digester Gas Facilities Replacement	Design	\$190,000,000
J-127	Natural Gas Pipelines Replacement at Plant Nos. 1 and 2	Close-Out	\$2,173,718
J-128	Project Management Information System	Construction	\$2,280,000
J-135A	Central Generation Engine Overhauls at Plant No. 1	Closed	\$4,260,520
J-135B	Engine and Generator Overhauls at Plant No. 1 and 2	Construction	\$36,638,485
J-137	Ocean Outfalls Rehabilitation	Project Development	\$82,000,000

COLLECTION SYSTEM PROJECTS				
Project No.	Project Name	Phase	Project Budget	Location(s)
1-23	Santa Ana Trunk Sewer Rehabilitation	Preliminary Design	\$54,620,000	Costa Mesa, Santa Ana
1-24	Greenville Trunk Improvements	Preliminary Design	\$48,600,000	Santa Ana
2-49	Taft Branch Improvements	Design	\$27,300,000	Orange
2-72B	Newhope-Placentia Trunk Replacement, Segment B	Close-Out	\$82,880,092	Fullerton
3-60	Knott - Miller Holder Artesia Branch Rehabilitation	Project Development	\$16,500,000	Buena Park, La Palma
3-62	Westminster Blvd Force Main Replacement	Construction	\$43,900,000	Seal Beach, Westminster
3-64A & 3-64BB	Los Alamitos Trunk Sewer Rehabilitation	Construction	\$26,089,085	Anaheim, Buena Park, Cypress, Los Alamitos, Seal Beach
3-64C	Los Alamitos Sub-Trunk and Westside Relief Interceptor Rehabilitation	Design	\$51,615,669	Cypress, La Palma, Los Alamitos
3-67	Seal Beach Pump Station Replacement	Design	\$114,600,000	Seal Beach
5-67	Bay Bridge Pump Station Replacement	Design	\$127,397,078	Newport Beach
5-68	Newport Beach Pump Station Pressurization Improvements	Construction	\$2,700,000	Newport Beach
6-20	Fairview Trunk Rehabilitation	Design	\$19,300,000	Costa Mesa
7-65	Gisler-Red Hill Interceptor and Baker Force Main Rehabilitation	Construction	\$55,500,000	Costa Mesa, Irvine
7-66	Sunflower and Red Hill Interceptor Repairs	Close-Out	\$6,600,000	Costa Mesa, Irvine
7-68	MacArthur Force Main Improvements	Bid and Award	\$8,150,000	Newport Beach
11-33	Edinger Pump Station Replacement	Preliminary Design	\$17,300,000	Huntington Beach

### SMALL PROJECTS

Project	Project Name	Status	Project Budget	Location(s)
FE10-21	Area 02 Craig Regional Park Manhole Improvements	Closed	\$940,036	Fullerton
FE17-03	Battery Storage System at Plant No. 1	Closed	\$650,000	Plant No. 1
FE17-05	Plant 1 ICS Network Extension	Closed	\$957,540	Plant No. 1
FE18-06	CenGen Instrument Air Compressors Replacement at Plant No. 1	Design	\$1,150,000	Plant No. 1
FE18-11	Headworks Explosive Gas Monitoring Systems at Plant No. 1 and No. 2	Closed	\$555,673	Plant Nos. 1 and 2
FE18-12	Erosion Control at Santa Ana River and Hamilton Ave	Closed	\$403,777	Huntington Beach
FE18-13	Redhill Relief Sewer Relocation at State Route 55	Construction	\$3,550,000	Santa Ana
FE18-14	Plant Water Pipeline Replacement in Kinnison, Lindstrom, and Scott Tunnels at Plant No. 2	Construction	\$1,895,000	Plant No. 2
FE18-15	Plant Boiler System Relief at Plant No. 2	Close-Out	\$675,000	Plant No. 2
FE18-16	Truck Loading Basement Drain Modifications at Plant No. 1	Close-Out	\$592,000	Plant No. 1
FE18-19	12KV Distribution B and East RAS Pump Station Roofing Replacement	Closed	\$1,090,032	Plant No. 2
FE18-20	DAFT Air Compressors Replacement at Plant No. 1	Design	\$1,360,000	Plant No. 1
FE19-01	Pump Station Portable Generator Connectors	Construction	\$2,570,000	OC San Service Area
FE19-02	CenGen Plant Water Pipe Replacement at Plant No. 1	Design	\$4,165,000	Plant No. 1
FE19-03	Trickling Filter Sludge and Scum Pumps Replacement at Plant No. 1	Construction	\$3,200,000	Plant No. 1
FE19-04	Sunflower Pump Replacement at Plant No. 1	Construction	\$4,300,000	Plant No. 1
FE19-06	EPSA Motor Cooling Improvements at Plant No. 2	Construction	\$1,475,000	Plant No. 2
FE19-08	Secondary Treatment VFD Replacements at Plant No. 2	Construction	\$2,900,000	Plant No. 2
FE19-09	Newhope - Placentia Trunk Grade Separation Replacement Repairs	Closed	\$453,530	Fullerton
FE19-10	Digesters C, D, F, G and I Gas Balance Lines Replacement at Plant No. 2	Design	\$1,200,000	Plant No. 2
FE19-11	Primary Clarifiers Nos. 6-31 Lighting and Alarm Improvements at Plant No. 1	Construction	\$1,250,000	Plant No. 1
FE19-12	Rebuild Shop Fume Extractor Installation at Plant No 1	Close-Out	\$560,000	Plant No. 1
FE19-13	VFD Replacements at Seal Beach Pump Station	Close-Out	\$520,000	Seal Beach
FE20-01	Wastehauler Station Safety and Security Improvements	Construction	\$2,671,500	Plant No. 1
FE20-02	Digester C, D, F, and G Mechanical Rehabilitation at Plant No. 2	Design	\$3,950,000	Plant No. 2
FE20-03	Return Activated Sludge Discharge Piping Replacement at Activated Sludge Plant No. 1	Construction	\$6,840,000	Plant No. 1
FE20-04	CenGen Cooling Water Pipe Replacement at Plant No. 2	Construction	\$5,180,000	Plant No. 2
FE20-05	Plant Water Piping Replacement at Secondary Clarifiers 1-26 at Plant No. 1	Design	\$1,545,000	Plant No. 1
FE20-06	Thickening and Dewatering Building Pipe Support Improvements at Plant No. 1	Close-Out	\$1,500,000	Plant No. 1
FE20-07	Santa Ana Trunk Rehabilitation at Plant No. 1	Close-Out	\$765,000	Plant No. 1

**SMALL PROJECTS (cont.)**

Project No.	Project Name	Status	Project Budget	Location(s)
FE20-08	Olive Sub-Trunk Siphon Rehabilitation at Santa Ana River	Bid and Award	\$3,500,000	Anaheim, Orange
FE20-09	CenGen Smoke Detection Improvements at Plant No. 1 and No. 2	Construction	\$950,000	Plant Nos. 1 and 2
FE21-01	Plasma Cutting Fume Extractor installation at Plant No. 1 Rebuild Shop	Design	\$277,000	Plant No. 1
FE21-02	Lighting Improvements Boiler and Sludge Dewatering Areas at Plant No. 1	Close-Out	\$320,000	Plant No. 1
FE21-04	Thickening and Dewatering Facility Handrail Installation at Plant No. 1	Design	\$230,000	Plant No. 1
FE21-05	Warehouse Stations and Demolition at Plant No. 2	Close-Out	\$2,200,000	Plant No. 2
FE21-06	Chemical Dosing Station Installation at Westside Pump Station	Design	\$560,000	County of Orange
FE21-07	Liquid Oxygen Tank A Replacement at Plant No. 2	Construction	\$3,800,000	Plant No. 2
FE21-08	Newhope-Placentia Sewer Manhole Replacements	Design	\$1,225,000	Fountain Valley, Garden Grove, Santa Ana
FE22-01	Platform Modifications for Process Areas at Plant No. 1 and No. 2	Project Development	\$1,300,000	Plant Nos. 1 and 2
FE22-02	Liquid Oxygen Tank B Replacement at Plant No. 2	Project Development	\$4,200,000	Plant No. 2



*Removing manhole cover on the Santa Ana Trunk Rehabilitation at Plant No. 1 Project.*

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Newport Beach  
Orange  
Placentia  
Santa Ana  
Seal Beach  
Stanton  
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Doug Chaffee



*OC San employees at the Plant No. 2 Headworks Facility in Huntington Beach representing the achievement of 100 percent recycling of reclaimable flows.*

**Reclamation Plant No. 1**  
(Administration Offices)  
10844 Ellis Avenue  
Fountain Valley, California 92708  
714.962.2411

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

**For more information**  
Email: [constructionhotline@ocsan.gov](mailto:constructionhotline@ocsan.gov)  
Phone: 714.378.2965

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