NOTICE OF REGULAR MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

ENGINEERING COMMITTEE
TELECONFERENCE MEETING

November 10, 2022
8:30 a.m.

Join Zoom Meeting by clicking on the link below:

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NOTICE IS HEREBY GIVEN that a Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee was called to be held by Teleconference on **November 10, 2022.** SOCWA staff will be present and conducting the call at the SOCWA Administrative Office located at 34156 Del Obispo Street, Dana Point, California.

MEMBERS OF THE PUBLIC ARE INVITED TO PARTICIPATE IN THIS TELECONFERENCE MEETING AND MAY JOIN THE MEETING VIA THE TELECONFERENCE PHONE NUMBER AND ENTER THE ID CODE. THIS IS A PHONE CALL MEETING AND NOT A WEB-CAST MEETING SO PLEASE REFER TO AGENDA MATERIALS AS POSTED WITH THE AGENDA ON THE WEB-SITE WWW.SOCWA.COM. ON YOUR REQUEST, EVERY EFFORT WILL BE MADE TO ACCOMMODATE PARTICIPATION. IF YOU REQUIRE ANY SPECIAL DISABILITY RELATED ACCOMMODATIONS, PLEASE CONTACT THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY SECRETARY'S OFFICE AT (949) 234-5452 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING TO REQUEST DISABILITY RELATED ACCOMMODATIONS. THIS AGENDA CAN BE OBTAINED IN ALTERNATE FORMAT UPON REQUEST TO THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY'S SECRETARY AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO THE SCHEDULED MEETING.

AGENDA ATTACHMENTS AND OTHER WRITINGS THAT ARE DISCLOSABLE PUBLIC RECORDS DISTRIBUTED TO ALL, OR A MAJORITY OF, THE MEMBERS OF THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY ENGINEERING COMMITTEE IN CONNECTION WITH A MATTER SUBJECT FOR DISCUSSION OR CONSIDERATION AT AN OPEN MEETING OF THE ENGINEERING COMMITTEE ARE AVAILABLE BY PHONE REQUEST MADE TO THE AUTHORITY ADMINISTRATIVE OFFICE AT 949-234-5452. THE AUTHORITY ADMINISTRATIVE OFFICES ARE LOCATED AT 34156 DEL OBISPO STREET, DANA POINT, CA ("AUTHORITY OFFICE"), BUT ARE NOT OPEN TO THE PUBLIC DURING THE PERIOD OF STAY AT HOME ORDERS. IF SUCH WRITINGS ARE DISTRIBUTED TO MEMBERS OF THE ENGINEERING COMMITTEE LESS THAN SEVENTY-TWO (72) HOURS PRIOR TO THE MEETING, THEY WILL BE SENT TO PARTICIPANTS REQUESTING VIA

EMAIL DELIVERY. IF SUCH WRITINGS ARE DISTRIBUTED IMMEDIATELY PRIOR TO, OR DURING, THE MEETING, THEY WILL BE AVAILABLE IMMEDIATELY ON VERBAL REQUEST TO BE DELIVERED VIA EMAIL TO REQUESTING PARTIES.

AGENDA

1. Call Meeting to Order

2. Public Comments

   THOSE WISHING TO ADDRESS THE ENGINEERING COMMITTEE ON ANY ITEM LISTED ON THE AGENDA WILL BE REQUESTED TO IDENTIFY AT THE OPENING OF THE MEETING AND PRIOR TO THE CLOSE OF THE MEETING. THE AUTHORITY REQUESTS THAT YOU STATE YOUR NAME WHEN MAKING THE REQUEST IN ORDER THAT YOUR NAME MAY BE CALLED TO SPEAK ON THE ITEM OF INTEREST. THE CHAIR OF THE MEETING WILL RECOGNIZE SPEAKERS FOR COMMENT AND GENERAL MEETING DECORUM SHOULD BE OBSERVED IN ORDER THAT SPEAKERS ARE NOT TALKING OVER EACH OTHER DURING THE CALL.

3. Approval of Minutes

   a. Engineering Committee Meeting of September 8, 2022
   b. Engineering Committee Meeting of October 13, 2022

   Recommended Action: Staff recommends the Engineering Committee to approve Minutes as submitted.

4. Operations Report

   Recommended Action: Information Item.

5. Wastewater Discharge Request to Santa Margarita Water District (SMWD) and City of San Clemente (CSC) Sewerage Facilities

   Recommended Action: Staff is seeking direction for response to the permitted request.

6. JB Latham Salt Loading Model Follow Up [Project Committee 2]

   Recommended Action: Information Item.

7. Capital Improvement Construction Projects Progress and Change Order Report (*November)* [Project Committee 2, 15 & 17]

   Recommended Action: Staff recommends the Engineering Committee approve Olsson Construction Change Orders 63 through 65, including 0 additional days for a total amount of $114,500.10, and a revised contract value of $18,488,244.24 for the J.B. Latham Package B Project.

8. Regional Treatment Plant (RTP) Emergency Power System Information [Project Committee 17]

   Recommended Action: Information Item.

Adjournment

I hereby certify that the foregoing Notice was personally emailed or mailed to each member of the SOCWA Engineering Committee at least 72 hours prior to the scheduled time of the Regular Meeting referred to above.

I hereby certify that the foregoing Notice was posted at least 72 hours prior to the time of the above-referenced Engineering Committee meeting at the usual agenda posting location of the South Orange County Wastewater Authority and at www.socwa.com.

Dated this 3rd day of November 2022.

Betty Burnett, General Manager/Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

MINUTES OF REGULAR MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Engineering Committee

DRAFT

September 8, 2022

The Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee Meeting was held on September 8, 2022, at 8:30 a.m. via teleconferencing from the Administrative Offices located at 34156 Del Obispo Street, Dana Point, California. The following members of the Engineering Committee were present via Zoom Meeting:

KEVIN BURTON	Irvine Ranch Water District
HANNAH FORD	El Toro Water District
ROD WOODS	Moulton Niguel Water District
DON BUNTS	Santa Margarita Water District
MARC SERNA	South Coast Water District
LORRIE LAUSTEN	Trabuco Canyon Water District

Absent:

DAVID SHISSLER	City of Laguna Beach
DAVE REBENSDORF	City of San Clemente
MIKE DUNBAR	Emerald Bay Service District

Staff Present:

BETTY BURNETT	General Manager
DAVID BARANOWSKI	Director of Engineering
JIM BURROR	Director of Operations
AMBER BAYLOR	Director of Environmental Compliance
RONI YOUNG	Associate Engineer
MARY CAREY	Finance Controller
JEANETTE COTINOLA	Procurement / Contracts Manager
DINA ASH	HR Administrator
KONSTANTIN SHILKOV	Senior Accountant
NADYN KIM	Accountant
ANNA SUTHERLAND	Accounts Payable
SEAN PEACHER	Safety Risk Manager
MATT CLARKE	IT Administrator
DANITA HIRSH	Executive Assistant

Also Present:

ADRIANA OCHOA	Procopio Law
TARYN KJOLSING	South Coast Water District
SHERRY WANNINGER	Moulton Niguel Water District
DAVE LARSEN	Moulton Niguel Water District

1. Call Meeting to Order

   Mr. David Baranowski, Director of Engineering, called the meeting to order at 8:32 a.m.

2. Public Comments

   None.

3. Operations Report

Mr. Burror, Director of Operations, gave an update on power outages in the area. He reported that staff has been busy with power outage items due to SOCWA's enrollment in the Emergency Load Reduction Program. Mr. Burror stated Edison and the State requested that CTP and RTP run generators at the plants to reduce the load on the system as much as possible. He also noted there was a substantial power outage at RTP where Edison had to replace the feeder lines to the plant. Mr. Burror also reported staff was doing a lot of construction support for the Package B Project. He stated the Primary and Secondary Basins and systems are back online at JBL. An open discussion ensued.

This was an information item; no action was taken.

4. JB Latham Mass Balance Salt Loading Model Evaluation

Ms. Amber Baylor, Director of Environmental Compliance, provided the staff report for this agenda item during the meeting. Ms. Baylor reported this item is specifically related to the salt loading at the JB Latham facility and builds on the work that was accomplished through the technical memorandum from Carollo. Ms. Baylor concluded her update by stating she would distribute the Salt Study by Carollo to the Committee for review and comments. (*Memorandum and Carollo JB Latham Salt Study are attached herein.*) An open discussion ensued.

There was no action taken on this item.

5. NPDES Permit Asset Management Plan Update

Ms. Baylor updated the Engineering Committee on the NPDES Permit Asset Management Plan reporting she had distributed the Excel templates for the Draft Asset Management Plan to the member agencies via email with embedded links to the documents because of their size. She noted she had received feedback from Hannah Ford from El Toro Water District (ETWD), as well as comments from the City of San Clemente. Ms. Baylor stated there was a lot of information to go through and felt the version is a good structure and would meet permit requirements for the AMP process. (*SJCOO & ACOO Final AMP's attached herein.*) An open discussion ensued.

This was an information item; no action was taken.

6. Use Audit Flows and Solids Methodology Update

Ms. Baylor updated the Committee stating the agenda item went to the Board as an information item for Board discussion but no changes were made to the flows and solids. An open discussion ensued.

Ms. Burnett commented that numbers for the flows and solids have been forwarded to Finance in preparation of the final Use Audit report.

This was an information item; no action was taken.

7. Capital Improvement Program (CIP) Year-End Summary

Mr. Baranowski gave a PowerPoint presentation summarizing the Capital Improvement Program Year-End Budget for Fiscal Year 2021-22. (*Presentation is attached herein.*) An open discussion ensued.

This was an information item; no action was taken.

8. Capital Improvement Construction Projects Progress and Change Order Report (*September*) [Project Committee Nos. 2, 15 & 17]

ACTION TAKEN
Motion was made by Mr. Woods and seconded by Ms. Ford to approve recommend that the PC 17 Board of Directors approve Change Order 4 to JR Filanc for $0.00, including 234 additional day(s) for a total of $0.00 and a revised contract value of $1,1812,531.02 for the RTP Aeration Diffuser Project.

Motion carried:	Aye 3, Nay 0, Abstained 0, Absent 2	
	Director Shissler	Absent
	Director Dunbar	Absent
	Director Ford	Aye
	Director Woods	Aye
	Director Serna	Aye

9. JB Latham Treatment Plant Package B Project Update [Project Committee 2]

Ms. Roni Young, Associate Engineer, gave a presentation on the status of the JB Latham Package B Project construction update. (*Presentation is attached herein.*) An open discussion ensued.

This was an information item; no action was taken.

10. JB Latham Package B Liquids Contingency and Project Update [Project Committee 2]

Mr. Baranowski gave a presentation on the JB Latham Package B Project liquids contingency increase. (*Presentation is attached herein*.) An open discussion ensued.

ACTION TAKEN
Motion was made by Mr. Woods and seconded by Mr. Serna to recommend to the PC 2 Board of Directors to approve the addition of $250,000 of contingency to the J.B. Latham Package B Liquids Improvements (3220-000).

Motion carried:	Aye 3, Nay 0, Abstained 0, Absent 0	
	Director Woods	Aye
	Director Bunts	Aye
	Director Serna	Aye

Adjournment

There being no further business, Mr. Baranowski adjourned the meeting at 9:32 a.m.

I HEREBY CERTIFY that the foregoing Minutes are a true and accurate copy of the Minutes of the Special Meeting of the South Orange County Wastewater Authority Engineering Committee of September 8, 2022 and approved by the Engineering Committee and received and filed by the Board of Directors of the South Orange County Wastewater Authority.

_____

Betty Burnett, General Manager/Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

October 25, 2022

David Gibson
California Regional Water Quality Control Board
San Diego Region
2375 Northside Dr. Suite 100
San Diego, CA. 92108

SUBJECT: San Juan Creek Ocean Outfall Order No. R9-2022-0005 Asset Management Plan

Dear Mr. Gibson:

Transmitted for your review is the Asset Management Plan for the San Juan Creek Ocean Outfall in compliance with NPDES Sections 6.2.5.7 and 6.3.5.7. Should you have any questions or comments, please feel free to contact me at 949-234-5409 or via email at abaylor@socwa.com.

"I certify under penalty of law that this document and all attachments under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR 122.22(d))

Very truly yours,

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Amber Baylor
Director of Environmental Compliance

cc: SOCWA PC5 Members

SAN JUAN CREEK OCEAN OUTFALL ASSET MANAGEMENT PLAN

NPDES No. CA0107417, Order No. R9-2022-0005

Abstract

In conformance with NPDES Section 6.2.5.7, SOCWA and SOCWA Member Agencies developed this Asset Management Plan for demonstration of proper operation, maintenance, engineering, financial management, and Board level oversight of the permitted facilities. This AMP also complies with NPDES Section 6.3.5.7.

SOCWA

October 2022

South Orange County Wastewater Authority

Table of Contents

List of Tables

List of Acronyms or Abbreviations

Acronym or Abbreviation	Meaning
3A	3A Water Treatment Plant
AM	Asset Management
AMP	Asset Management Plan
CIP	Capital Improvement Project
CMMS	Computerized Maintenance and Management System
CWRP	Chiquita Water Reclamation Plant
GRP	Groundwater Recovery Plant
JBL	JB Latham Treatment Plant
MNWD	Moulton Niguel Water District
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
SCWD	South Coast Water District
SDRWQCB	San Diego Regional Water Quality Control Board
SJCGTP	San Juan Capistrano Groundwater Treatment Plant
SJCOO	San Juan Creek Ocean Outfall
SMWD	Santa Margarita Water District
SOCWA	South Orange County Wastewater Authority
WRP	Water Reclamation Plant

Executive Summary

Asset Management Purpose, Objectives, & Findings

Purpose:

To comply with the SJCOO NPDES Permit as stated in the NPDES permit: "Asset management planning provides a framework for setting and operating quality assurance procedures and ensuring the Dischargers have sufficient financial and technical resources to continually maintain a targeted level of service and the operational integrity of the POTWs. Asset management requirements have been established in this Order to ensure compliance with Standard Provision 1.4 in Attachment D of this Order and the requirements of 40 CFR section 122.41(e)."

Objectives:

This Asset Management Plan (AMP) presents a proactive approach utilized by SOCWA member agencies to repair, rehabilitate, and replace assets so those assets are reliable and operating when needed. This AMP provides the structure by which SOCWA member agencies minimize unplanned outages, manage risks associated with asset or service impairment through asset performance optimization, develop cost-effective management strategies in the long-term, and strive for continual improvement of asset management (AM) practices.

Organization:

The San Juan Creek Ocean Outfall (SJCOO) AMP is organized into four parts which accompany NPDES Section numbers to provide the Regional Board and interested parties with a roadmap that permittees used to comply with the SJCOO NPDES requirements. The SJCOO AMP starts with Part 1 to provide an overview of the facilities covered in this AMP in compliance with §6.3.5.7.3. Part 2 provides the reader with an overview of the maintenance programs and funding to accomplish rehabilitation and needed repair of the permitted facilities. Part 2 complies with §6.3.5.7.1., §6.3.5.7.2., and §6.3.5.7.6. Part 3 includes funding sources, capital program management and system projections for each facility in compliance with §6.3.5.7.4. and §6.3.5.7.5. Part 4 provides a general overview of the findings in this AMP.

Findings:

All agencies are in various stages of their asset management program implementations. Agencies are properly planning, maintaining, and replacing small capital and large capital in conformance with the SJCOO NPDES requirements. Through inspections conducted by SDRWQCB staff after the adoption of the NPDES permit, there were no material deficiencies found. Agencies are taking proper care and maintenance of their facilities as required by the NPDES permit.

Part 1: Introduction

Asset Management Plan Discharge Facilities Overview

There are nine permitted facility discharges contained in the SJCOO permit, as described in Table 1 below. The Oso Creek Water Reclamation Plant (OCWRP) is also named in the SJCOO permit. OCWRP discharges to the Oso Trabuco sewer line and not directly to the SJCOO thus, the facility is included under the requirements of this AMP. The table below provides the reference point for each named discharge facility, the discharger, and the permitted description of the facility in compliance with the AMP requirement for inclusion. Each section of this AMP refers to the discharger to organize the list of facilities that the agency has direct oversight over, through contracted agreements, or through direct oversight as part of their organizational structure. The dischargers are listed in alphabetical order throughout the AMP for consistency and clarity throughout the document.

Monitoring Location Name	Facility Name	Discharger	Permitted Description NPDES Section in Attachment F
M-001	San Juan Creek Ocean Outfall	SOCWA	2.2
M-001A	JB Latham Treatment Plant	SOCWA	2.1.1.
M-001B	Chiquita Water Reclamation Plant	SMWD	2.1.2.
M-001C	3A Water Reclamation Plant	MNWD	2.1.3.
M-001D	San Clemente Water Reclamation Plant	CSC	2.1.4.
M-001E	San Juan Capistrano Groundwater Treatment Plant	SMWD	2.1.5.
M-001F	South Coast Water District Groundwater Recovery Facility	SCWD	2.1.6.
M-001G	Segunda Deshescha Runoff Plant	CSC	2.1.7.
M-001H	Doheny Desalination Project	SCWD	2.1.8.
	Oso Creek Water Reclamation Plant	SMWD	2.1.1.

Table 1: SJCOO Permitted Dischargers

SJCOO Discharge Facility Infrastructure in Compliance with § 6.3.5.7.3

The NPDES permit requires that the AMP require a map of the wastewater treatment plant that "shall incorporate assets from the asset management inventory." Each agency provided maps related to this requirement which are included in Appendix A with descriptions of how the agencies interpreted this requirement and responded with materials available that were provided to SOCWA.

Part 2: Program Monitoring

Compliance with NPDES Sections §6.3.5.7.1., §6.3.5.7.2., and §6.3.5.7.6

Each agency includes a robust system of rehabilitation and replacement plans that are tied to their operational planning through their respective operational structures. Computerized maintenance and management systems (CMMS) are the main operational management software systems that agencies utilize for maintenance planning and scheduling of replacement maintenance activities. Management structure with personnel in charge of direct oversight to direct the preventative maintenance and other rehabilitation activities in the primary mechanism for completion of the permit compliance requirements. The San Diego Regional Water Quality Control Board (SDRWQCB) completes compliance evaluation inspections (CEIs) to review the rehabilitation and preventative maintenance requirements with a metric scoring system to identify whether the activity levels are unacceptable or not. In April 2022, the SDRWQCB staff performed CEIs at all the facilities, with no facility receiving an unacceptable rating that would be out of compliance with these permit requirements.

Rehabilitation and Replacement Plan in Compliance with NPDES § 6.3.5.7.1

Section 6.3.5.7.1 in the SJCOO NPDES permit states: "Each agency includes a robust system of rehabilitation and replacement plans that are tied into their capital spending and budgeting processes." Detailed in this section is how each agency is meeting this permit requirement.

CSC

The City of San Clemente plans on spending $2.15M in maintenance activities between FY 21/22 through FY 27/28 for activities spent on the Water Reclamation Plant. Those maintenance activities are included in Appendix B-CSC.

MNWD

System reliability is paramount. Moulton Niguel Water District (the District) maintains more than $2 billion
worth of water and wastewater infrastructure assets.

Moulton Niguel's 10-year Capital Improvement Program (CIP) contains $623M of identified projects for primarily the rehabilitation of: the District's 3A wastewater treatment plant, lift stations, pump stations, reservoirs, transmission mains, valve replacements, and other identified infrastructure. Attached is Appendix B from the District's FY2022-23 approved budget. This document summarizes all of the currently identified projects in the District's 10-year CIP, including the approximate timeframe for implementation. The District's capital financing plan accounts for unexpected cost impacts, such as updated condition assessments, delayed project starts, and municipal permitting requirements. Significant projects in the 10-year CIP includes: a pipeline replacement program, reliability investments in vertical assets, such as pump and lift stations, reservoir management system replacements, electrical system improvements, as well as a comprehensive rehabilitation and replacement plan for the 3A wastewater treatment plant.

Vertical Asset Rehabilitation and Replacement Program

The District operates and maintains over 50 pump stations, lift stations, take-outs, and flow control facilities for potable water, recycled water, and wastewater services throughout its service area. As part of its CIP, Moulton Niguel has implemented a program to comprehensively rehabilitate each vertical asset facility as part of an $82.6M Vertical Asset Rehabilitation and Replacement Program. Each project will include a comprehensive assessment of all aspects of the facility, including sitework, structures, mechanical systems, electrical, and instrumentation, and will complete all necessary improvements as a single project. The early stages of design are underway for the complete reconstruction of the North Aliso Lift Station and the comprehensive rehabilitation of the Aliso Creek Lift Station. Construction of each of these projects is anticipated to begin in FY2023-24, with overall project budgets of approximately $6.0M and $3.9M, respectively.

Pipeline Rehabilitation and Replacement Program

The District operates and maintains approximately 1,400 miles of buried pipelines for potable water, recycled water, and wastewater services throughout its service area. As part of its CIP, Moulton Niguel has implemented a program to systematically replace pipelines as part of a $108M Pipeline Rehabilitation and Replacement Program. The program was established using a risk-based prioritization process to rank pipelines based on a variety of factors, including age, materials, leak history, CCTV observations, number of services or hydrants out of service, soil corrosivity, adjacent land uses, and proximity to water bodies as applicable. These rankings are updated annually as part of the CIP budget development process and then utilized to prioritize pipelines for condition assessment, rehabilitation, and replacement. Design is nearly completed for the Regional Force Main Replacement Project and Crown Valley Pipelines Replacement Project (comprised of the Lower Salada Lift Station Force Main Replacement, Crown Valley Parkway Transmission Main Lower Reach Replacement, and I.D. No. 1 Master Meter Replacement). Construction of each of these projects is anticipated to begin in FY2023-24 with overall project budgets of approximately $19.2M and $17.3M, respectively.

Plant 3A Capital Improvement Program

Moulton Niguel Water District constructed Plant 3A in the late 1980s. The District managed the operation of the facility when it came online in June 1990 until the operation was transferred to the South East Regional Reclamation Authority, which subsequently became the South Orange County Wastewater Authority (SOCWA), in June 1998. SOCWA operated Plant 3A until Spring 2015 when Santa Margarita Water District assumed operation for a three-year term.
Since resuming operations and capital planning for Plant 3A in 2019, Moulton Niguel has initiated the comprehensive rehabilitation of the Plant 3A facilities. Although a number of smaller projects have been (and continue to be) undertaken by staff and outside contractors, the significant rehabilitation efforts are primarily included in a Ground Subsidence Mitigation project, a Solids Handling Facilities Improvements project, and a Liquids Handling Facilities Improvements project. Upon completion of these projects, all mechanical, electrical, instrumentation and control systems will be upgraded in such a manner that the entire facility

will be restored to be functionally redundant with the treatment processes optimized for current and projected flows and loadings.

The Ground Subsidence Mitigation project will remediate site subsidence and settlement throughout the site, provide improved storm drainage facilities, and replace the existing pavement surfaces. The plant water systems will also be converted to recycled water as part of this project. The current FY 2022-23 project budget is approximately $4.8M, with construction underway.

The Solids Handling Facilities Improvements project will provide a comprehensive rehabilitation of the solids handling facilities, including scum pumping, sludge thickening, digesters, digester mixing systems, sludge heating systems, sludge feed system, dewatering, flare, electrical systems, SCADA systems, and other ancillary facilities. Additionally, a solids loadout facility will be constructed, including conveyors, a sludge silo, and a truck scale system. The project is currently in the final design stages with an overall project budget of approximately $58M. Construction is anticipated to begin in early FY 2023-24.

The Liquids Handling Facilities Improvements project will provide a comprehensive rehabilitation of the liquids handling facilities, including headworks, grit handling, aeration basins, secondary clarifiers, and other ancillary facilities. The existing tertiary treatment system will also be evaluated for rehabilitation or replacement and is planned to be completed as part of this project. The current project budget is approximately $21M, with design planned to begin in early FY 2023-24 and construction planned to begin in FY 2025-26.

Timeline of Significant Plant 3A Capital Improvement Projects

PROJECT NAME	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28
PLANT 3A SUBSIDENCE MITIGATION	CONSTRUCTION					
PLANT 3A SOLIDS HANDLING FACILITIES IMPROVEMENTS	DESIGN	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION		
PLANT 3A LIQUIDS HANDLING FACILITIES IMPROVEMENTS		DESIGN	DESIGN	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION

Table 2: Timeline of Significant Plant 3A CIP

SCWD

The SCWD plans on spending ~$745,000 on the Groundwater Recovery Facility. A portion of the chart that shows the spending levels is included on p.11 of the SCWD's FY23 Budget and in Appendix B of this document for reference. The SCWD budget can be found on the SCWD website here: https://www.scwd.org/open_government/financials/budget.php

SCWD also participates in and funds operational projects for the JB Latham Facility through participation in the SOCWA Engineering Committee, SOCWA Finance Committee, and the SOCWA Board.

SMWD

The SMWD asset management is accomplished using a "Comprehensive Asset Management Program" (CAMP), an asset management program which relies on asset inventory, operations and maintenance input, ongoing condition assessments, and staff judgement to identify/schedule preventative maintenance and to identify/prioritize capital improvement projects for asset rehabilitation and replacement, including assets costing $5,000 and greater.

The following interactive programs are used for real-time planning and implementation of the SMWD CAMP.

Sharepoint CAMP Program: A customized project planning database identifying asset rehabilitation and replacement projects and proposed schedule. The program includes project background, description, justification, ongoing notes, attachment references, funding notes, and cost schedule. See attached Attachment B – SMWD 1 for sample project printout.

Mainstar Program: The District uses the Mainstar Computerized Maintenance Management System (CMMS). Mainstar generates preventative maintenance orders and tracks completion. See Attachment B – SMWD 2 for sample printout.

MUNIS Software, Asset Management Module: SMWD uses MUNIS software for project management and related financial functions. Refer to Attachment B – SMWD 3 for a sample of an asset detail printout.

The District conducts Condition Assessments at facilities as assets reach the end of its service life, to determine rehabilitation and replacement projects. Refer to Attachment B – SMWD 4 for excerpts from a condition assessment report. Maps of the service area wastewater systems are provided in Attachment B – SMWD 5, and a list of projects with budgets is provided in Attachment B – SMWD 6.

The Santa Margarita Water District is comprised of service area divisions referred to as Improvement Districts (IDs), with the following correlations: ID 1 – Mission Viejo, ID 2 – Coto de Caza, ID 3 – Rancho Santa Margarita (RSM) (NW), ID 4 – RSM, Las Flores, Ladera Ranch, Sendero, Esencia, Wagon Wheel, ID 5 – Rienda, ID 6 – future, ID 7 – Talega/San Clemente, ID 8 – Hidden Ridge, ID 9 – City of San Juan Capistrano. The SMWD annexed ID 9 in November 2021.

SOCWA

In FY 2021-22, SOCWA Operational and Maintenance staff completed 52 Small Capital projects with a value of $2.08 million (estimated 80% spent). Goods on order for installation $1.08 million, which have delayed small capital projects due to supply chain issues. The SOCWA O&M budget can be found here: http://www.socwa.com/wp-content/uploads/2022/07/FY-2022-23-BOD-Approved-Budget-1.pdf

Maintenance Planning and Asset System Summaries in Compliance with NPDES § 6.3.5.7.2 & § 6.3.5.7.6 .

SJCOO NPDES § 6.3.5.7.2. states that: "The AMP shall identify individual or categories of maintenance activities and frequency with which they are performed. The Maintenance Plan shall estimate the ongoing and projected cost of maintenance activities." Below is a description of how each facility is meeting this requirement.

The requirement in NPDES §6.3.5.7.6. is to provide a framework for inventory tracking of assets valued over $5,000 to for automatic workflow, work order production and tracking, and prioritization of system maintenance and rehabilitation projects. Each agency automates workflow through organizational management structures and staff direction with oversight by their respective Board of Directors. These systems for asset management of agency infrastructure ensure that there is adequate planning, maintenance, and financial management of facilities. How each agency complies with the structure is articulated below.

CSC

The City of San Clemente plans on spending $2.15M in maintenance activities between FY 21/22 through FY 27/28 for activities spent on the Water Reclamation Plant. Those maintenance activities are included in Appendix B-CSC. At the April 2022 SDRWQCB inspection, there were 14 open work order/service requests. In April 2022, Joann Lim of the SDRWQCB conducted a Compliance Evaluation Inspection (CEI) of the agency facilities, which reviewed the computer maintenance and management system software used to track assets used in the maintenance and capital spending projects. A review of the preventative maintenance activities was conducted, and no deficiencies were found, as described in the CEI letter received from Ms. Lim in May 2022.

MNWD

In response to §6.3.5.7.2

The Collections, Electrical/Instrumentation, Facilities Maintenance, and Wastewater Treatment departments of Moulton Niguel Water District each have extensive preventive maintenance (PM) programs in place. These PMs are scheduled within the District's recently implemented computerized maintenance management system (CMMS) of record, NEXGEN. NEXGEN is an advanced CMMS that provides customizable, easy to use modules and allows for expeditious/timely data exports as well as complex performance reporting for a variety of metrics. The preventive maintenance module in NEXGEN allows for a variety of frequency options, customizable checklists, and attachments to be added to the work orders, such as photographs, standard operating procedures, and reference materials. The tables below represent a summary of the preventive maintenance activities and frequencies for wastewater collection, pumping, and treatment systems by the department. The total cost of these preventative maintenance activities is approximately $1.4M annually.

Collections PMs			
Main Task	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Early Enhanced Cleaning (30 routes)	Semi-annual	416	$37,274
Enhanced Cleaning (123 routes)	Semi-annual	1908	$262,541
Routine Cleaning (64 routes)	Annual	3636	$325,786
CCTV	Annual	1584	$116,899
Total		**7544**	**$742,500**

Table 3: Collection Preventative Maintenance Schedule and Costs

Electrical/Instrumentation PMs				
Main Task	**PM Details**	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Critical Quarterly Checks (22 facilities)	Inspect, clean, and test alarms, PLC, MCC, SMC, & VFD	Quarterly	312	$25,555
3A PLC Maintenance	Inspect and clean PLC panels	Annual	12	$4,670
Aeration Blower System	Inspect, clean, and test	Annual	12	$4,670
AWT Pumping System	Inspect, clean, and test	Annual	20	$7,783
Bar Screen Maintenance	Inspect, clean, and test	Annual	8	$3,113
Centrifuge and Conveyor System	Inspect, clean, and test	Annual	20	$7,783
Compactor System	Inspect, clean, and test	Annual	8	$3,113
Digester Pump Blower System	Inspect, clean, and test	Annual	20	$7,783
Gas Monitoring	Inspect and calibrate	Quarterly	16	$6,226
Grit Pumping System	Inspect, clean, and test	Annual	12	$4,670
HVAC Systems	Inspect, clean, and test	Annual	20	$7,783
Main Switchboard		Annual	60	$23,348
ORT Pump Blower System	Inspect, clean, and test	Annual	20	$7,783
Primary Sedimentation Tank Skim & Sludge Collection System	Inspect, clean, and test	Annual	20	$7,783
Primary Sludge Pumping System	Inspect, clean, and test	Annual	16	$6,226
Raw Sewage Pump System	Inspect, clean, and test	Annual	20	$7,783
Returned Activated Sludge System	Inspect, clean, and test	Annual	20	$7,783
Roto Screen (Compactor) System	Inspect, clean, and test	Annual	20	$7,783
Secondary Sedimentation Tank Skim & Sludge Collection System	Inspect, clean, and test	Annual	20	$7,783
Waste Activated Sludge System	Inspect, clean, and test	Annual	8	$3,113
Total			**644**	**$154,747**

Table 4: Electrical/Instrumentation

Facilities Maintenance PMs				
Main Task	**PM Details**	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Air Conditioning Service	Assist contractor	Quarterly	6	$415
Facility/Location Checks	Inspect site surroundings. Listen for unusual sounds from pumps, fans, compressors, valves, and panels. Check pumps, packing adjustment or seal water weep,	Daily	1464	$101,250

	vibration, leaking, and bearing temperature. Check PLC lights for active alarms.			
Generator/Auxiliary Testing	Check fluids. Test auxiliary and ATS switch. Test alarms. Clean probes, weep bowls, and sump pits	Monthly	840	$58,094
Hoist/Crane Inspection	Inspect hook, chain/cable, brake test, stops, and operation	Quarterly	120	$8,299
Logging/Inspection	Checking various assets within station	Weekly	1560	$107,890
Oxygen Generation System Service	Assist contractor	Quarterly	20	$1,383
Pump Inspection/Maintenance	Overall inspection, check coupling, and check vibration	Quarterly	120	$8,299
Quarterly Safety Inspection Procedure	Condition assessment of switches and controls, cat walks, railings, stairs, guards, warning signs, floor grates, fire extinguishers, hoists, and eyewashes.	Quarterly	20	$1,383
Surge Tank Maintenance and Inspection	Visual inspection on tank and water	Annual	3	$207
Valve Exercising	Operate valves	Semi-annual	100	$6,916
Wet Well Inspection and Maintenance	Inspect wet well for thickness and clean out if necessary.	Monthly	84	$6,918
Plant-Aeration Blower Inspection	Grease, check temperature and vibration.	Quarterly	32	$2,213
Plant-Air Compressor Maintenance	Check belt, air filter, change oil, clean exterior air filter, change oil filter if needed.	Quarterly	112	$7,746
Plant-Bar Screen Inspections	Replace greasers, gearbox oil change, check pins, sprockets, teeth, and screen in channel.	Annual	3	$207
Plant-Boiler System Inspection and Maintenance	Tune up, emissions, and inspect recirculating and heat loop pumps for leaks.	Quarterly/Annual	86	$5,948

Plant-Compactor Inspection and Maintenance	Grease, gearbox oil change, and replace brushes as needed.	Annual	3	$207
Plant-Digester System Inspection and Maintenance	Visual inspection, check belts and change oil on blowers.	Annual	24	$1,660
Plant-Grit Classifier Inspections	Grease and check bearings.	Quarterly	32	$2,213
Plant-Primary and Scum Collector Inspection	Visual inspection, change oil, check clutch and drive chain.	Annual	8	$553
Plant-Pump Inspection and Maintenance	Visual inspection, clean out and inspect teeth on grinders, change oil in pump and check belts,	Quarterly	114	$7,884
Plant-Secondary Clarifier Inspection	Confined space entry to check inside of tank and inspect internal equipment.	Annual	9	$622
Plant-Tank Inspection	Visual inspection on external tank and equipment, Confined space entry for visual inspection inside tanks.	Annual	16	$1,107
Plant-Wet Well Inspections	Inspect and clean out as needed.	Annual	6	$494
Total			**4779**	**$331,908**

Table 5: Facilities Maintenance Preventative Maintenance Schedule and Costs

Wastewater Treatment Operations PMs				
Main Task	**PM Details**	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Plant Rounds		Daily	1095	$80,674
Safety Equipment Checks	Gas detectors, fire extinguishers, eyewash stations, lights, confined space equipment, and ladder systems.	Weekly	104	$7,662
Equipment Rotations	2W pumps, bar screens, compactors, grit chambers, primary tanks, aeration blowers, RAS pumps, AWT applied pumps, AWT filter pumps, sodium hypochlorite pumps, polymer pumps, ferric chloride pumps, centrifuges, ORT recirculation pumps, and other equipment.	Monthly	240	$17,682

Aeration Basin Cleaning	Inspect and clean basins	Annually	80	$5,894
Sump Pump Checks		Monthly	24	$1,768
Dissolved Oxygen Profiles	Aeration tanks 1 & 2	Weekly	208	$15,324
Alarm Testing	Informational, critical, and dialer testing	Bi-weekly	26	$1,916
Sampler Checks	Inspect, clean, and test	Daily	365	$26,873
Bar Screen Maintenance	Inspect and replace greasers	Annually	8	$589
Total			**1785**	**$158,382**

Table 6: Wastewater Treatment Preventative Maintenance Schedule and Costs

In response to §6.3.5.7.6 Asset Management Software

Moulton Niguel Water District has an extensive history of utilizing asset management (AM) software to track and manage operational workflows and preventative maintenance schedules of its assets. In 2017, the District began leveraging its GIS software, Microsoft Excel, and GIS-based asset data to determine prioritization scores for its pipelines. Using criteria including age, materials, soil corrosivity, CCTV observations, adjacent land uses, and proximity to water bodies, we calculated Probability of Failure and Consequence of Failure scores, enabling the District to rank pipelines by overall priority. These rankings were then utilized to establish and prioritize upcoming capital projects and forecast capital funding needs.

Historically, the District's primary AM software was "Tabware" by AssetPoint. Starting in the spring of 2021, the District implemented a new AM software to more effectively manage and enhance the maintenance of the District's vertical assets and infrastructure. This new software, "Nexgen," provides a comprehensive, cloud-based AM software solution and Computer Maintenance Management System (CMMS) for the District moving forward. The software provides the following benefits:

- Provides management visibility and operational execution and allows for consistent data for analysis and reporting.
- Enables mobile work orders, automatic email alerts and review/approve requests through smartphones or tablets.
- Tracks staff workflow data to assign the right work tasks to the right people at the right time, minimizing unplanned downtime and improving efficiency.
- Sends automatic email alerts when review or approval is needed to keep workflows moving.
- Use the workorder history data, and time/material data, to develop asset lifecycle cost information.

That, along with developed remaining useful life and costing data, will be utilized to inform a comprehensive asset management program that leverages data into actionable asset decision-making on system maintenance and rehabilitation projects.

- Increased Inventory Control

As of August 2022, the Nexgen implementation has been completed with nearly all workgroups within the Operations, Engineering, and Customer Service divisions. This implementation established routine preventative maintenance and reactive workorders, software and systems configuration, and initial development of an asset register, along with integrations with our geographic information system ("Geocortex"), timesheet management, fuel management, underground service alert process, collection

system CCTV database, and our enterprise resource planning software ("JDEdwards). Additional planned implementations will include enhanced development of the asset registry data (including useful life values, cost values, and the refinement of risk analysis scores), and the development of more robust asset management reporting. A sample of the asset details are included in Appendix B – MNWD 2.

In April, 2022, Joann Lim of the SDRWQCB conducted a Compliance Evaluation Inspection (CEI) of the agency facilities, which reviewed the computer maintenance and management system software used to track assets used in the maintenance and capital spending projects. A review of the preventative maintenance activities was conducted, and no deficiencies were found as described in the CEI letter received from Ms. Lim in May 2022.

SCWD

All planning activities for maintenance activities are handled in the Maintenance Connection CMMS. In April 2022, Joann Lim of the SDRWQCB conducted a Compliance Evaluation Inspection (CEI) of the agency facilities, which reviewed the computer maintenance and management system software used to track assets used in the maintenance and capital spending projects. A review of the preventative maintenance activities was conducted, and no deficiencies were found, as described in the CEI letter received from Ms. Lim in May 2022.

SMWD

In response to § 6.3.5.7.2

SMWD uses Mainstar CMMS software for maintenance planning. Refer to response in 6.3.5.7.1 and **Appendix B – SMWD 2** for an example of regularly scheduled maintenance activities at the Horno Lift Station. These activities are representative of scheduled maintenance at all District facilities.

Sewer system management is in accordance with the "Santa Margarita Water District, Sewer System Management Plan (SSMP)". The District conducts an audit of the SSMP every two years and recertifies the SSMP every five years. The most recent version v1.2, June 2022 is available on the SMWD website at www.smwd.com/ssmp. The June 2022 SMWD SSMP is for the current SMWD service area, IDs 1 through 9. The SMWD SSMP meets the requirements of the Regional Water Quality Control Board, San Diego Region 9 (RWQCB) and Statewide General Waste Discharge Requirements (GWDR) required by the State Water Resources Control Board (SWRCB).

In response to § 6.3.5.7.6 Asset Management Software:

SMWD uses a number of software programs to manage the District's CAMP. Refer to Section 6.3.5.7.1 Rehabilitation and Replacement Plan and Appendix B – SMWD 1-3 of this report.

The information identified in this requirement is provided in Table 7 below.

Information	Sharepoint Appendix B – SMWD 1	Mainstar Appendix B – SMWD 2	MUNIS Asset Mgmt Module Appendix B – SMWD 3
Name and identification number	Yes	Yes	Yes
Location (GPS coordinate or equivalent identifier)	No	Yes	No
Purchase and installation date	No	No	Yes
Purchase price	No	No	Yes
Replacement cost	No	No	Yes
Quantitative consequence of failure	(1)	No	No
Quantitative likelihood of failure	(1)	No	No
(1) Consequence of failure and likelihood of failure are factored into the prioritization and justification of all projects. Other asset management criteria considered include: safety and working environment, regulatory compliance, energy efficiency, odor control, cost efficiency, facility capacity, asset useful life. The District uses Condition Assessments, see Appendix B – SMWD 4, to assess these criteria.			

Table 7: Summary of Asset Management Software

SOCWA

SOCWA uses Tabware by Aptean. Tabware by Aptean is a computerized maintenance management system or CMMS software that centralizes maintenance information and facilitates the processes of maintenance operations. It helps optimize the utilization and availability of physical equipment like vehicles, machinery, communications, plant infrastructures, and other assets.

The core of the CMMS is the database. It has a data model that organizes information about the assets needed for maintaining the equipment, materials, and other resources management by SOCWA. The information in the CMMS database supports various functions of the system, which enable the following capabilities:

Resource and labor management:

- Track available employees
- Assign specific tasks
- Schedule projects requiring multiple crafts and/or Departments

Asset registry: Store, access, and share asset information such as:

- Manufacturer, model, serial number and equipment class, and type
- Associated costs and codes
- Location and position
- Performance and downtime statistics
- Associated documentation, video, images such as repair manuals, safety procedures, and warranty information Work order management: Typically viewed as the main function of CMMS, work order management includes information such as:
- Work order number
- Description and priority
- Order type (repair, replace, scheduled)
- Cause and remedy codes
- Personnel assigned and materials used
- Backlog reports

Work order management also includes capabilities to:

- Automate work order generation
- Schedule and assign employees
- Review status and track downtime
- Record planned and actual costs
- Attach associated documentation, repair, safety information, equipment nameplate data (manufacturer, model, serial number, sizing, etc.), specifications, location and criticality information, documents and video files, user-defined data fields, hierarchy of components, assemblies, sub-assemblies and parts, maintenance and cost history, parts ordering information

Preventive maintenance:

- Automate work order initiation based on time, usage, and triggered events.
- Tabware allows staff to sequence and schedule preventive work orders.

Reporting, analysis, and auditing:

- Generate reports across maintenance categories such as asset availability, materials usage, and labor.
- Tabware also allows viewing equipment assemblies, sub-assemblies, components, and parts to maximize asset performance and improve technician wrench time by eliminating time spent searching for parts.

Information stored in Aptean EAM's Equipment Module is integrated throughout other Aptean EAM modules to help maximize asset performance. For example, inventory items listed on the hierarchy are integrated with the Aptean EAM Inventory Module.

Key features include:

- Reach any function with just 2 mouse clicks
- Aptean EAM's Query Wizard provides quick access to equipment and easy reporting
- Specify multiple meters for equipment to drive preventive maintenance
- Hierarchy view identifies plants, areas, systems, equipment, assemblies, parts, etc.
- Create work orders and requisitions directly from the equipment hierarchy
- Link any type of document to equipment and classes of equipment
- Specify components by equipment and equipment class for failure reporting and analysis
- Move equipment from one location to another directly from the equipment hierarchy

SOCWA staff reports key performance indicators related to Tabware CMMS to the SOCWA Board on a monthly and quarterly basis.

Part 3: Budgetary Considerations

Funding in compliance with §6.3.5.7.4.

NPDES §6.3.5.7.4 states that: "The AMP shall create an accounting of current and projected funding sources, relevant expenses, and financial reserves. Expenses may include operational, administrative, interest, or capital expenses. Funding sources may consist of federal, State, local, or private grants, loans, or bonds, as well as connection and user fees." How each agency procures funding, budgets, and allocates funding for proper capitalization and operation of facilities is included below.

CSC

The Annual Adopted Budget of the City includes a section that presents the City's Capital Improvement Program (CIP) for the Fiscal Year. The CIP section provides a six-year Capital Improvement Plan for the City that includes both Capital and Maintenance projects. Individual project sheets, within the CIP section, include a project description, the division managing the project, the type of project, and the budgeted project costs. Capital projects include new construction, replacement, rehabilitation, and maintenance of assets.

The CIP for the CSC can be found here:
https://issuu.com/z.y.mazboudi/docs/fy_2021_cip_and_maintenance_projects_with_link

MNWD

As the District transitions its focus from developing new infrastructure to maintaining and replacing existing infrastructure, the Long Range Financial Plan (LRFP), in conjunction with other long-term planning efforts, provides a roadmap for future resource needs and actions. Currently, the District is implementing a 10-Year Capital Improvement Plan containing $623 million in identified projects.

The availability of funds required to finance the capital improvement program and day-to-day operations of the District is tracked through the LFRP model. Capital typically spans across a long-time horizon; hence, a 10-year plan enables the District to plan out the financing needs for future capital expenditures through internal reserves, grants, state loans, property tax and rate revenues, or proceeds from bond issuances. Consistent with best practice, the District conservatively does not include any grant revenues in its financial projections; however, District staff aggressively pursue grant opportunities for qualified projects, ultimately securing over $10 million in grant funding since FY 2014-15. The long-range financial plan identifies the projected rate revenue adjustments and bond issuances needed to maintain the long-term financial health of the District.

The District maintains a capital financing plan to better account for the difference between actual expenses and projected costs for future capital projects. This approach aligns with best practices to account for the unexpected impacts to the timing of capital projects such as condition assessments identifying assets that may have more remaining useful life than expected or permitting delays to ensure a more accurate projection of cash needs for the near future. Staff conducts monthly cashflow projections on a project-by-project basis and revise these annual capital spending projections based on new asset data and current trends.

The District's Operations and Engineering staff annually develop the 10-year CIP based on prioritization of needed projects and potential replacement costs for large projects over the 10-year planning horizon. Potential future projects are identified by remaining useful asset life and consequence of failure; however, actual costs will vary based on condition assessments and better data. Recognizing that actual costs will differ from projections, the District's Finance staff and Engineering staff work collaboratively to develop a Capital Financing Plan which identifies funding amounts for future years based on historical trends of capital budgets to actuals and expectations of future project costs. The 10-year capital financing plan total of $434.1 million is utilized in the 10-year cashflow modeling to forecast revenue requirements in the future. Of the total $434.1 million, approximately $158 million (36%) is expected to be bond financed with the remaining $276.1 million (64%) being funded on a Pay-Go basis through a mix of operating and non-operating revenues.

The District has adopted reserves to mitigate potential revenue and expense volatility and reduce the risk of requiring unplanned, large rate adjustments. These funds have been designated for response to a range of risks, from meeting potential cashflow shortfalls due to the difference in timing between revenue and expenditures to the possibility of asset failures due to natural disaster. In particular, the Emergency Reserve enables the District to promptly address repairs to critical assets in the event of a natural disaster or facility failure. The target balance of the Emergency Reserve is equal to two percent of the replacement costs of the District's assets as outlined in current guidelines from the Federal Emergency Management Agency.

The District has historically maintained a strong financial position based upon conservative planning and budgeting, maintenance of adequate cash balances, and solid debt service coverage. A major objective of the LRFP is to ensure that this strong performance continues through timely and thoughtful financial analysis, budgeting, and planning. The District's debt obligations were recently reaffirmed at "AAA" by Fitch Ratings and remain "AAA" by Standard & Poor's, each with a "Stable" Rating Outlook.

SCWD

The SCWD budget can be found here:
https://cms9files.revize.com/scoastwaterdist/SCWD_FY22_BudgetBook_final.pdf

The SCWD Appendix to the budget contains the breakdown in spending for SCWD's facilities, found on p.25 of the SCWD Budget. The graphic below is provided for reference to the budgeted materials.

SMWD

The District's Finance Department maintains a multi-year financial plan, which is utilized in the District's annual budget, strategic planning, and customer rate setting. The financial plan matches costs with funding to fund the operational, administrative, interest, and capital improvements of the District's system. SMWD finances capital projects using a variety of sources, including revenue from sewer charges, reserve funds, previously established Community Facility District and General Obligation Bonds funds, and Revenue Bonds. The District recently issued the Water and Wastewater Revenue Bonds, Series 2020A to provide funds, in part, to construct the District's upcoming Capital Improvement Program.

SOCWA

Large Capital Improvements Projects (CIP) projected spending of $15,996,104. Of this amount, $8,185,065, is expected to be expended to complete six major projects, including the JBL Package B Construction at the PC 2 J.B. Latham Treatment Plant and the Aeration System Upgrade at the PC 17 Regional Treatment Plant site. The Large Capital Improvements budget is submitted for approval of the Board with one year of additional detail prepared for future planning purposes through Fiscal Year 2023-2024 (2 Years). The CIP and SOCWA budget can be found here: http://www.socwa.com/wp-content/uploads/2022/07/FY-2022-23-BOD-Approved-Budget-1.pdf

Substantial Progress on Capital Improvements

SOCWA prioritizes capital spending based on remaining useful life (RUL) for individual components of the facility with direction from the SOCWA Engineering Committee. The JB Latham facility RUL breakdown is included in Appendix C, which also includes the estimated replacement cost, where the asset is located, and the asset tag in connection with the Tabware CMMS. Large Capital Funds held on Account continued to be spent down. Close of Fiscal Year (6/30/2022) with expected $11.86 million in capital construction currently underway, including work for:

- JBL Package B, Project in Construction
- JBL Plant Standby Power Generator
- JBL Effluent Pump Station

Major Projects in FY 2022-23:

- JBL Package B Construction
- JBL Plant 1 Electrical Rehabilitation
- JBL Miscellaneous Gates and Pipe Rehabilitations
- JBL Miscellaneous Roof Rehabilitations
- JBL Centrate Piping Reconstructions

System Projections in compliance with §6.3.5.7.5

Each agency identifies service area vulnerabilities and population water access needs through rate setting projects and Urban Water Management Plans, which are referenced and provided in the narrative for each agency below. In addition, NPDES §6.3.4.4 requires dischargers to develop a climate change plan as described here: “The Facilities shall be protected against regional impacts of changing climate conditions (e.g., rising sea levels, flooding, higher storm surges, and changing hydrography, including more intense atmospheric rivers). Compliance with this requirement shall be implemented through the development and implementation of applicable measures identified in the Climate Change Action Plan, which must be submitted within three years of the effective date of this Order pursuant to section 6.1 of the MRP (Attachment E).”

CSC

Section 3.4 of the CSC’s Urban Water Management Plan includes service area projections, demographics, and service area population found here:

https://www.san-clemente.org/home/showpublisheddocument/64986/637612710083430000

The CSC will work with SOCWA to identify system vulnerabilities in compliance with NPDES §6.3.4.4 to develop a climate change plan as described in the NPDES Permit.

MNWD

Service Area

Moulton Niguel Water District has grown tremendously since its formation; initially formed by local ranchers to provide water service to eight accounts, the District now provides water, recycled water, and wastewater service to more than 170,000 customers within a 37-square-mile service area covering portions of six cities in southern Orange County. The District service area is largely built-out and includes the cities of Aliso Viejo and Laguna Niguel along with portions of the cities of Laguna Hills, Mission Viejo, San Juan Capistrano, and Dana Point. In 2020 within the District's service area there were 67,091 homes, of which approximately 50 percent are single-family. While its operations have evolved along with the growth of its service area, the District's primary focus has remained largely unchanged: ensuring ratepayers have a reliable, sustainable, and economical water supply for the future.

Service Area Population

Population growth between 2000 and 2020 averaged 670 residents per year, or an average annual growth rate of 0.41 percent. However, during the period from 2004 to 2006, the annual average growth declined by 668 residents per year or 0.41 percent over those three years. As there are fewer and fewer areas to develop within the District's service area, population growth will primarily come from redevelopment and infill activities and is anticipated to be on average 2 percent over the next 10 years. Beginning in 2035, the population is expected to decrease in the service area by approximately 1 percent through 2045. The forecasted population for the District from 2020 to 2045 was provided by the Center for Demographic Research at California State University Fullerton (CDR). Table 8 below shows the population projections in five-year increments to the year 2045.

Population - Current and Projected

Population Served	2020	2025	2030	2035	2040	2045
	170,236	172,134	174,202	174,241	174,169	172,802
Notes: Data provided by Center for Demographics.						

Table 8: MNWD Population Current and Projected

System Vulnerabilities

With increased temperatures and higher intensity storms in recent years, the importance of identifying and mitigating inflow and infiltration (I&I) in wastewater collection systems has been brought to the forefront of the water and wastewater industries. As part of its ongoing efforts to identify and mitigate vulnerabilities in the wastewater collection systems, the District has

implemented several strategies to evaluate potential I&I issues within its collections system. The intent behind these components is to take a focused and strategic approach to identify locations prone to I&I, review and determine the cause of I&I, and implement improvements to mitigate or eliminate identified I&I into the collection system. These strategies include:

1. Utilize the flow data for the identified wastewater sub-basins within the District's service area to determine areas that are experiencing higher peaking factors during rain events;
2. Identify areas within the collection system that may be subject to I&I, such as sewer mains that run parallel to or cross existing creeks;
3. Perform video inspection of higher-risk sewer mains, including inspections of sewer siphons;
4. Revise procedure for annual manhole condition assessments to incorporate the location of the manholes relative to street drainage systems, i.e. ribbon gutters or curb & gutter;
5. Coordinate with the responsible city within the identified sub-basin to identify designated pool that were connected to the sewer system.

Since 2019, the District has deployed flow measurement devices and rain gauges to continuously refine the targeted investigation of I&I within the collection systems. This information, in combination with CCTV and manhole assessment data, is incorporated into the collection system rehabilitation prioritization shown in the maps included as part of the response to Section 6.3.5.7.3.

Overall, the effect of climate change in the western United States and more specifically the Orange County region has shown itself in increased temperatures and less overall rainfall while occurring in increased intensity. This has resulted in significant water conservation over the past several years, which has led to corresponding decreases in wastewater flows. Although increases in the overall capacity of the wastewater collection system have been realized because of the reduction in wastewater flows, other challenges have manifested themselves, particularly to the lift stations. As the District completes the comprehensive rehabilitation of each facility in the wastewater system, particular effort is expended to 'right-size' the infrastructure to the current and future demands of the facility. Each rehabilitation of these facilities is prioritized based on age, condition, and overall risk.

SCWD

The Capital Improvement Project Budget for SCWD can be found here, with specific budgeting information found on p.24 in the budget:
https://cms9files.revize.com/scoastwaterdist/SCWD_FY22_BudgetBook_final.pdf

SCWD will work with SOCWA to identify system vulnerabilities in compliance with NPDES §6.3.4.4 to develop a climate change plan as described in the NPDES Permit.

SMWD

Flow Projections:

The 2020 SMWD UWMP was prepared in compliance with the California Water Code Section 10630.5 for the SMWD service area at that time (IDs 1 through 8). The City of San Juan Capistrano prepared a similar Urban Water Management Plan in 2015. The District updated water use projections for IDs 1-8 as part of the 2020 UWMP preparation. Based on the updated water use projections, "Section 6.2.3 – Wastewater and Recycled Water" presents wastewater flow projects, wastewater collection, and wastewater treatment and reuse/disposal.

Table 9 summarizes the 2020 SMWD UWMP presented SMWD (IDs 1-8) Wastewater Treatment volumes.

Treatment Plant	Wastewater Volume (af)	Ave Daily Wastewater Flow (MGD)
SMWD Chiquita Water Reclamation Plant	6,178	5.5
SMWD Oso Creek Water Reclamation Plant	1,817	1.6
SOCWA J.B. Latham Plant	1,600	1.4
IRWD Los Alisos Water Recycling Plant	750	0.7
San Clemente Water Reclamation Plant	709	0.6
Source: Table 6-3, 2020 SMWD UWMP. No SMWD flow was treated at the MNWD 3A Plant		

Table 9: Summary of SMWD Wastewater Influent by Treatment Facility, 2020

The Service areas tributary to Oso Creek WRP, J.B. Latham Plant, Los Alisos WRP, and San Clemente WRP are considered to be at Build Out with negligible development activity generating additional new flows. Additional flows are generally offset by reduced wastewater production due to water conservation.

In 2021, the District updated projected sewage flows based on current flows and flow projections for future development based on the following documents:

- "*Santa Margarita Water District 2020 Urban Water Management Plan*" (2020 UWMP)
- "*Rancho Mission Viejo Planning Area 3 "Rienda" Master Plan of Works*" (PA-3 POW)
- "*The Ranch Plan: Planning Area Nos. 5 and 8 Water Supply Verification*" (PA 5&8 WSV)

For the area tributary to the Chiquita Water Reclamation Plant, the Rancho Mission Viejo (RMV) development has developed population projections and wastewater generation projections through build out. The projections provided by RMV, summarized in the Water Supply Verifications and Master Plan documents, were used in the Influent Flow Analysis for the Chiquita Water Reclamation Plant to project Influent Pump and Screening capacity requirements at build-out. These flow projections are summarized in Table 10.

Year	Average Flow (mgd)	Peak Flow (mgd)
2025	6.9	22.2
2030	7.3	22.9
2035	8.0	24.0
2040	8.6	25.1
Ultimate	9.3	26.7
Source: Chiquita Water Reclamation Plant Screenings and Influent Lift Station Expansion, Preliminary Design Report, Table 2-4 and Table 2-8		

Table 10: CWRP Influent Flow Projections

South Orange County Wastewater Authority (SOCWA) meters flow from ID 9 just upstream of the J.B. Latham Plant. SOCWA provided flow data to SMWD for 2017 through 2022 as part of the current SMWD master planning effort for ID 9. Based on the historical data (refer to Table 3, "Tech Memorandum: Santa Margarita Water District Sanitary Sewer Hydraulic Model Update, September 2022, Wood."), the current average daily flow from ID 9 is 2.3 mgd. The peak flow of 7.2 mgd corresponds to a peak weather event in February 2018. While San Juan Capistrano does not have large areas of undeveloped land, redevelopment is ongoing in areas of the City. The District will be developing 20-year flow projections as part of current master planning efforts.

Climate Change:

As part of the 2020 UWMP work, the District also reviewed available studies and presented Climate Change Impacts for SMWD which are presented in Section 4.7 of the 2020 UWMP. The analysis incorporated the "California Climate Adaptation Planning Guidance (2020)", and the "South Orange County 2016 Climate Change Vulnerability Assessment" (Appendix J of the "South Orange County Integrated Regional Water Management Region Plan").

SMWD will work with SOCWA to identify system vulnerabilities in compliance with NPDES §6.3.4.4 to develop a climate change plan as described in the NPDES Permit.

SOCWA

SOCWA will work with agencies to identify system vulnerabilities in compliance with NPDES §6.3.4.4 to develop a climate change plan as described in the NPDES Permit.

Part 4: Findings

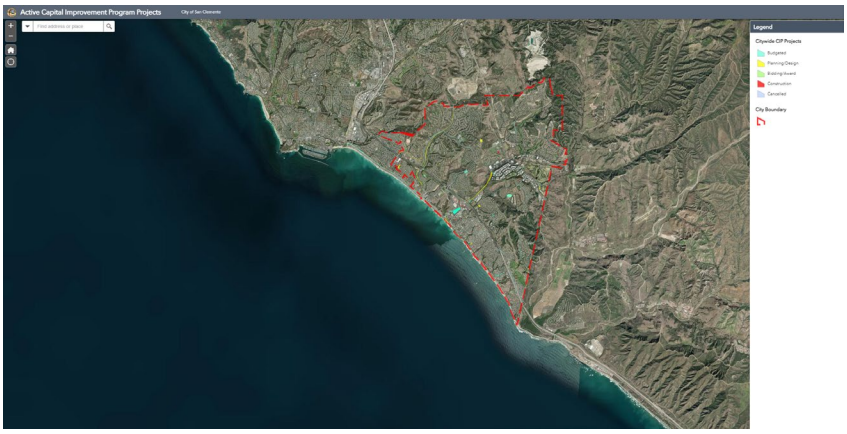
All agencies are in various stages of their asset management program implementations. Agencies are properly planning, maintaining, and replacing small capital and large capital in conformance with these NPDES requirements. Through inspections conducted by SDRWQCB staff after the adoption of the NPDES permit, there were no deficiencies found. This concludes that agencies are taking proper care and maintenance of their facilities as required by the NPDES permit

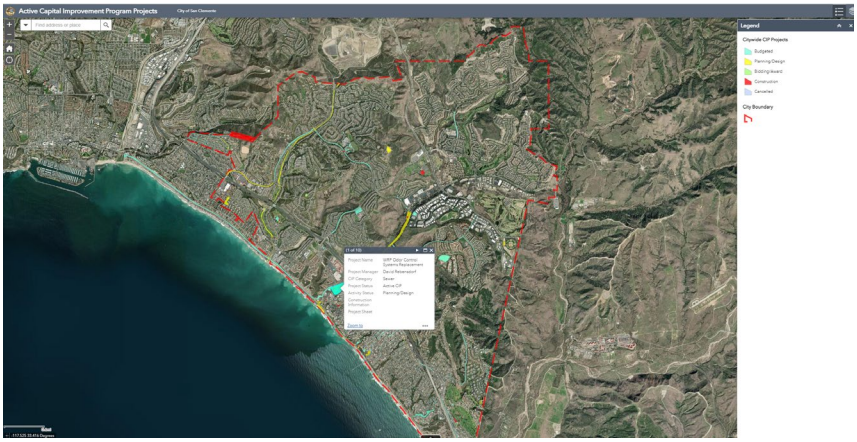
Appendices

Included in this section are appendices to provide additional details based on narratives in the main body of this report.

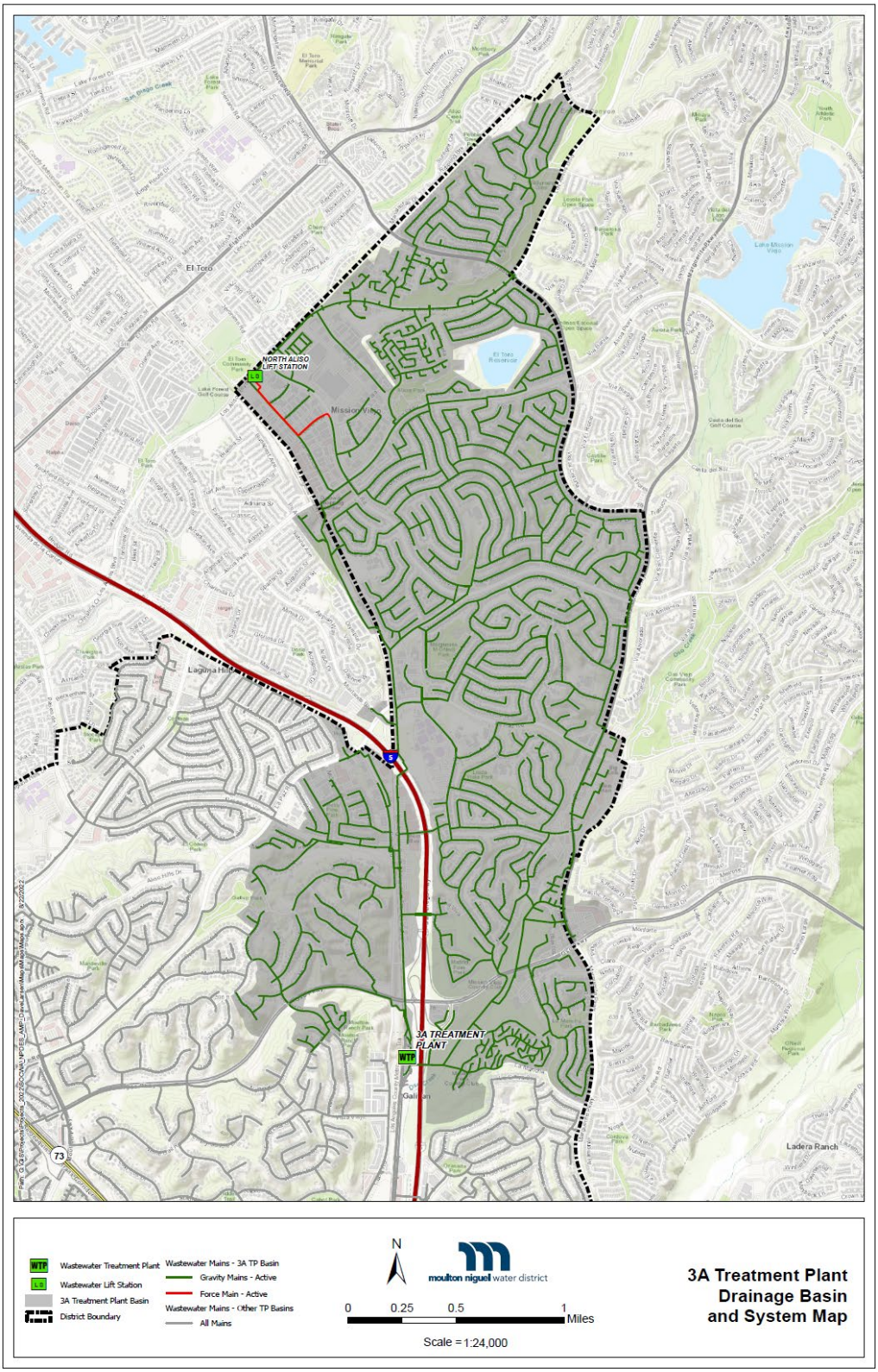
Appendix A - Overview of SJCOO Discharge Facility Infrastructure in Compliance with § 6.3.5.7.3.

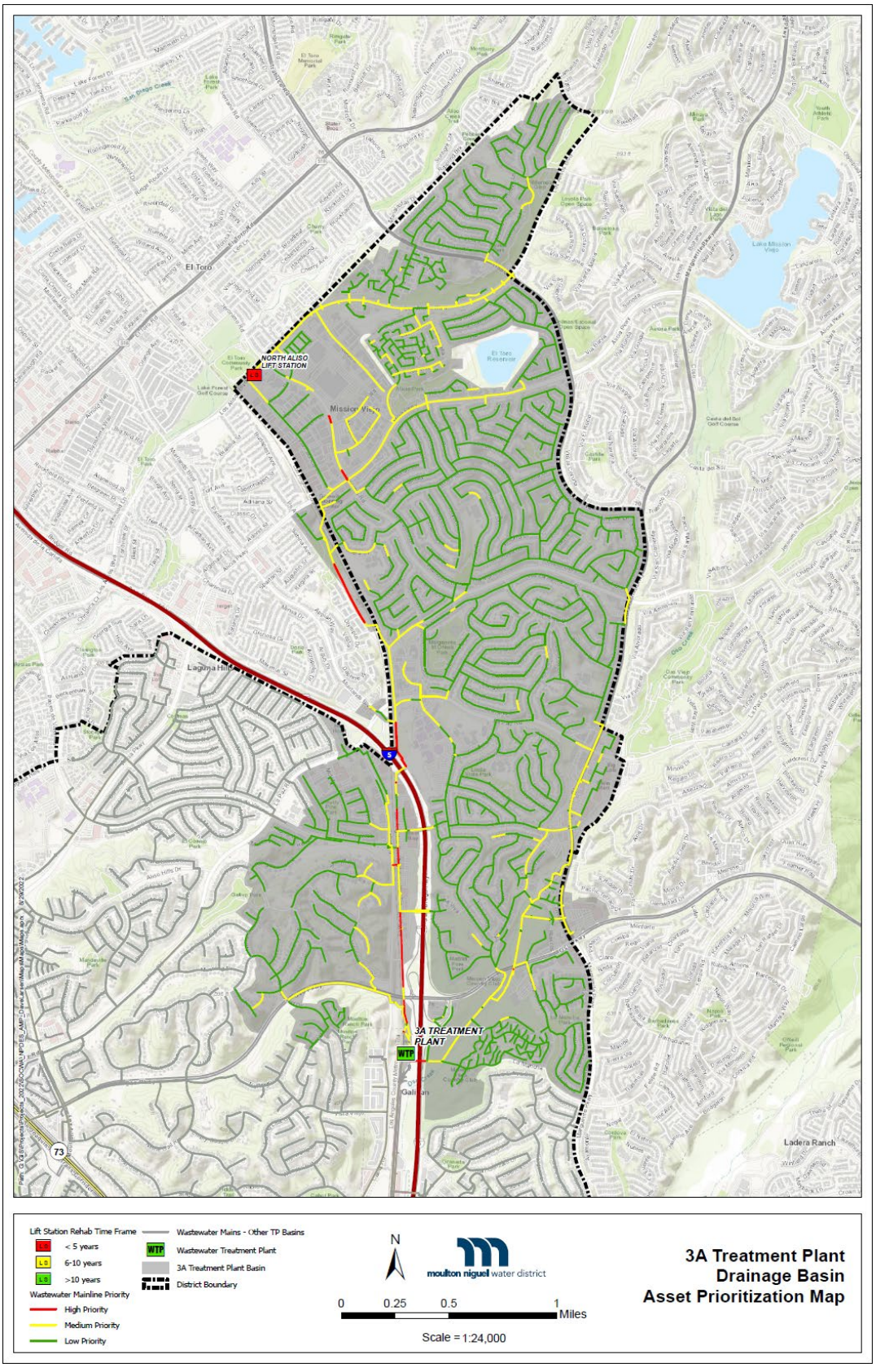
CSC – The City of San Clemente has a color-coded map for reference related to budgeted actions in connection with the agency's Capital Improvement Program. The map is web accessible and can be found using the following link:
https://sanclementeca.maps.arcgis.com/apps/webappviewer/index.html?id=e8cf01cc94154ac598dcd4e417b10172

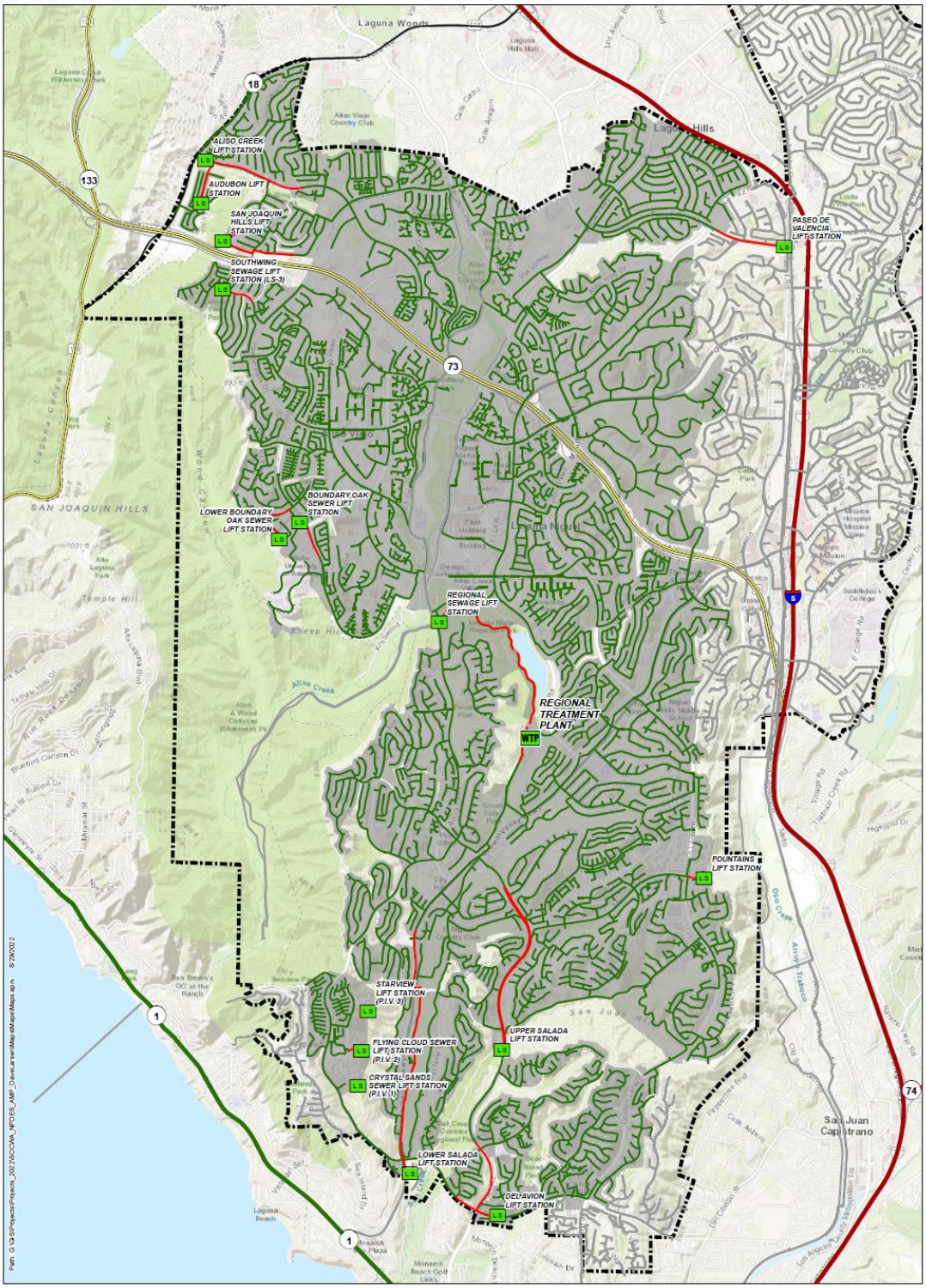




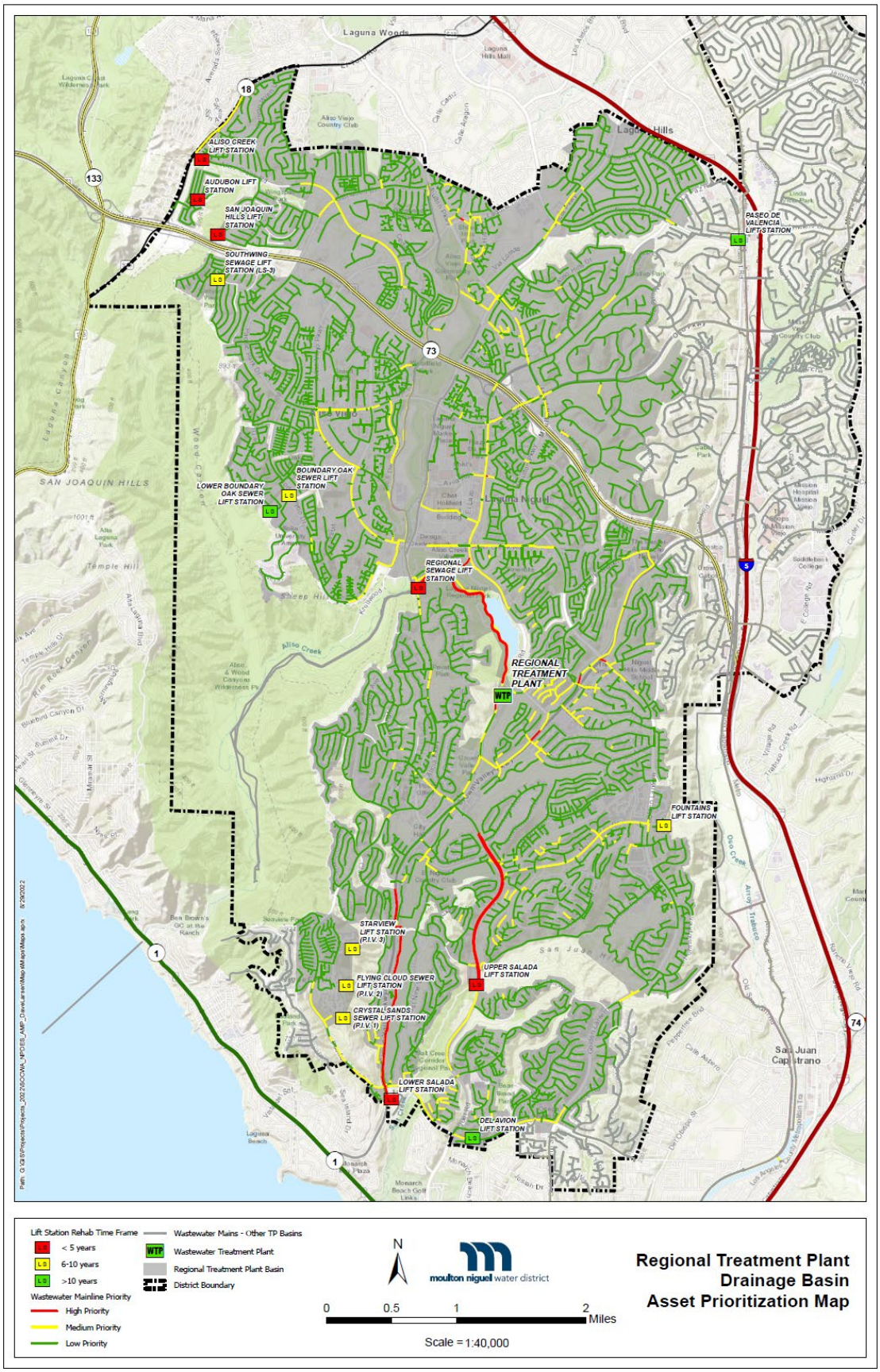
MNWD


NORTH ALISO LIFT STATION
LS
3A TREATMENT PLANT
WTP
El Toro
Mission Viro
Laguna Hills
Ladera Ranch
73
Wastewater Treatment Plant
Wastewater Lift Station
3A Treatment Plant Basin
District Boundary
Wastewater Mains - 3A TP Basin
Gravity Mains - Active
Force Main - Active
Wastewater Mains - Other TP Basins
All Mains
N
moulton niguel water district
0 0.25 0.5 1 Miles
Scale = 1:24,000
3A Treatment Plant
Drainage Basin
and System Map

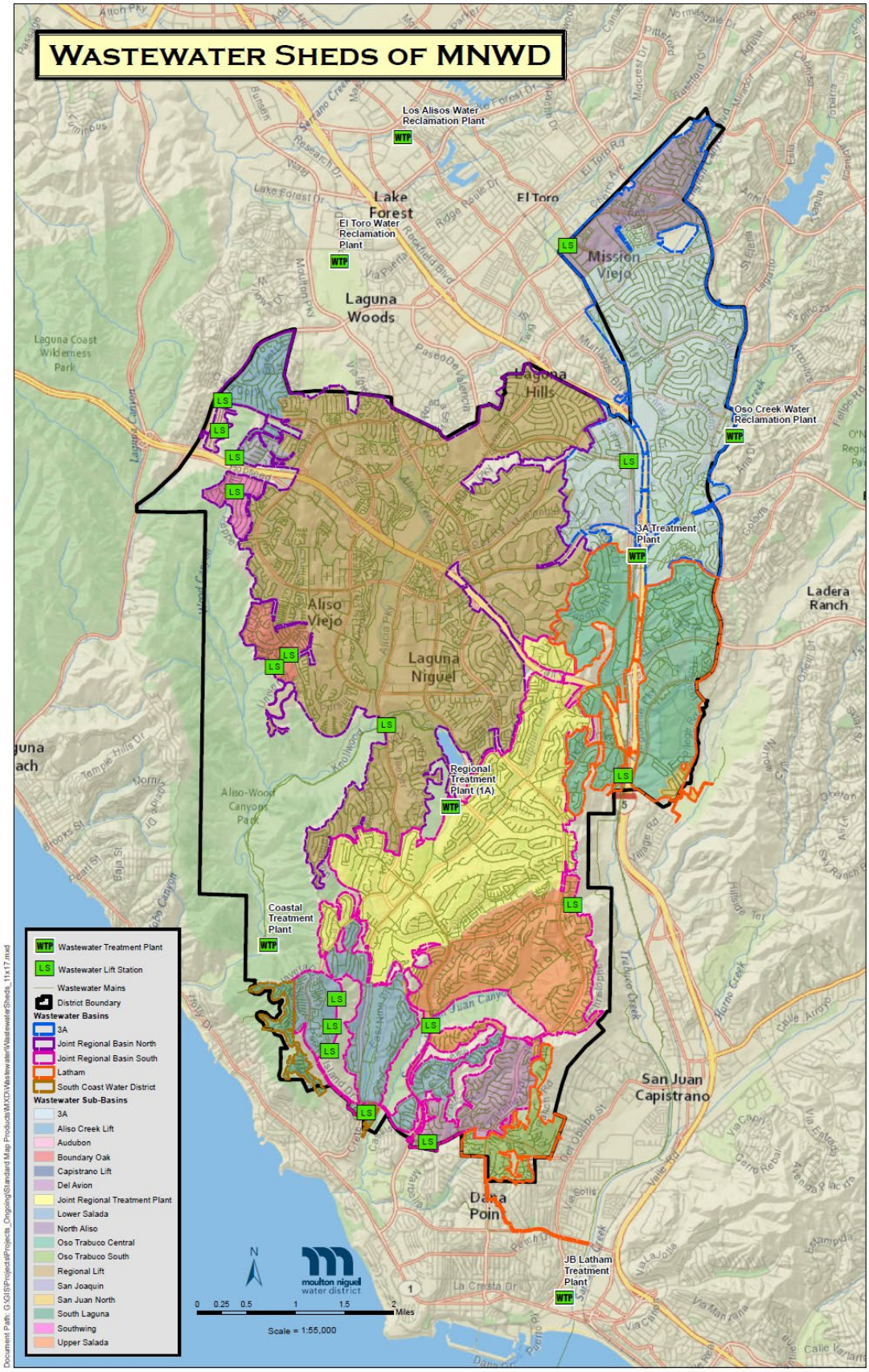

NORTH ALISO LIFT STATION
LS
3A TREATMENT PLANT
WTP
El Toro
Mission Viejo
Laguna Hills
Ladera Ranch
Lift Station Rehab Time Frame
< 5 years
6-10 years
>10 years
Wastewater Mainline Priority
High Priority
Medium Priority
Low Priority
Wastewater Mains - Other TP Basins
Wastewater Treatment Plant
3A Treatment Plant Basin
District Boundary
N
moulton niguel water district
0 0.25 0.5 1 Miles
Scale = 1:24,000
3A Treatment Plant
Drainage Basin
Asset Prioritization Map



Regional Treatment Plant Drainage Basin and System Map



SOCWA
South Orange County Wastewater Authority



SOCWA
South Orange County Wastewater Authority

SCWD

SCWD's facility descriptions and maps are articulated in the SOCWA map below and can be found in the SJCOO NPDES permit. The Sewer Management Plan and supplemental materials can be found here: https://www.scwd.org/your_water/wastewater_sewage/sewer_management_plan.php#outer-93

SMWD – Sewershed maps are included in Appendix B – SMWD 3 Below

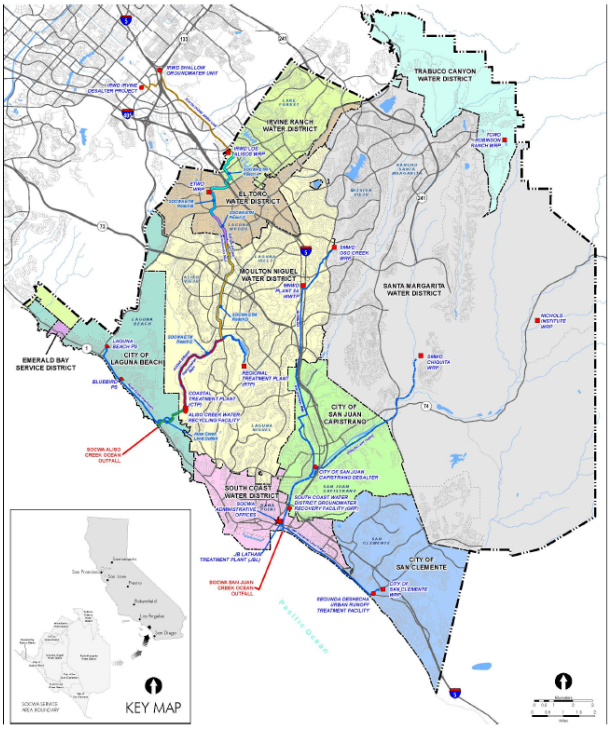
SOCWA – Please note that SOCWA does not oversee or maintain any collection systems within the sewersheds to the JB Latham Treatment Plant in compliance with Statewide Sanitary Sewer System Waste Discharge Requirements. Please see the map below of the SOCWA service area below, which is also included in the SJCOO NPDES, Attachment B-1.

SOCWA
SAN JUAN CREEK OCEAN OUTFALL

ORDER NO. R9-2022-0005
NPDES NO. CA0107417

ATTACHMENT B – MAP

Map 1 - SOCWA Facilities[3] and Service Area
(South Coast Water District Doheny Desalination Project not shown)



[3] Facilities collectively refers to the J.B. Latham Wastewater Treatment Plant, Santa Margarita Water District (SMWD) Chiquita Water Reclamation Plant (WRP), SMWD/Moulton Niguel Water District 3A WRP, San Clemente WRP, SMWD Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, SCWD Doheny Desalination Project, the associated land outfalls, and San Juan Creek Ocean Outfall (SJCOO).

Attachment B - Map B-1

Appendix B – In compliance with § 6.3.5.7.1, § 6.3.5.7.2. & § 6.3.5.7.6.

CSC – Maintenance Planning Summary

FUND 054-476				Current Year Projected				Future Years						
			Project	Budgeted	11/30/2021 YTD		Projected	Six year						
Proj #	Description	DIV	Category	FY 21/22	Exp	Balance	FY 21/22	Total	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Maintenance & Other Projects														
21201	Computerized Maintenance Management System Implementation	Eng.	Maint.	63,850	-	63,850	63,580							
24200	Sewer System Rehabilitation			250,000	4,877	245,123	250,000	1,300,000	250,000	250,000	250,000	250,000	300,000	300,000
26212	WRP Sluice Gate Replacements	Eng.	Maint.	214,440	24,340	190,100	214,440	500,000	500,000					
21203	Digester #2 Cleaning, Residual Disposal & Inspection	Eng.	Maint.	250,000	-	250,000	250,000	100,000	100,000					
36202	WRP Odor Scrubber Analysis	Eng.	Study	12,600	-	12,600	12,600							
New	Centrifuge Conveyor Improvements								300,000					
Future	Sewer Asset Management					-		50,000			50,000			
12208	WRP Ferric Tank Replacement	Eng.	Maint.	150,000	4,289	145,711	150,000	0						
21205	WRP and Sewer Facility Pavement Rehabilitation	Eng.		299,700	-	299,700	299,700	200,000				200,000		
	Total M & O Projects			**$1,240,590**	**$33,506**	**$1,207,084**	**$1,240,320**	**$2,150,000**	**$1,150,000**	**$250,000**	**$300,000**	**$450,000**	**$300,000**	**$300,000**

MNWD – 1: Capital Improvement Plan Summaries

FY 2022-23 | 10-YEAR CAPITAL IMPROVEMENT PROGRAM

PROJECT NO.	FUND	PROJECT NAME	PROJECT STATUS/ PRIORITY	TOTAL PROJECT BUDGET	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26 to 2031-32
MULTI-SYSTEM								
2011077	14	MOULTON PEAK RADIO TOWER REPLACEMENT	CONSTRUCTION	$732,504	$30,000			
2021017	7	WAREHOUSE STORAGE AND FUNCTIONAL IMPROVEMENTS	CONSTRUCTION	$250,000	$150,000			
2011024	7	DOCUMENT MANAGEMENT SYSTEM UPGRADE	DESIGN	$389,000	$100,000	$150,000	$30,000	
2020019	7	SCADA COMMUNICATIONS NETWORK IMPROVEMENTS	DESIGN	$485,000	$460,000			
	1	CAPITAL OUTLAYS - FUND 1	PROGRAM	$6,500,000	$1,250,000	$1,250,000	$500,000	$3,500,000
	7	OPERATIONS-LED CAPITAL IMPROVEMENTS - MS	PROGRAM	$500,000		$50,000	$500,000	$350,000
2019004	7	RISK AND RESILIENCY ASSESSMENT AND ENHANCEMENT		$210,600	$50,000	$110,600		
2021014	7	DOCUMENT STORAGE FACILITY IMPROVEMENTS		$150,000				$150,000
2021019	14	VIDEO SITE SURVEILLANCE SYSTEM		$500,000	$150,000	$150,000	$150,000	$50,000
2022000	7	2022-23 OPERATIONS-LED CAPITAL IMPROVEMENTS - MS	NEW	$100,000	$100,000			
	7	BILLING SYSTEM UPGRADE	NEW	$1,000,000	$150,000	$400,000	$450,000	
	7	CMMS PHASE II IMPLEMENTATION/INTEGRATION	NEW	$300,000	$300,000			
	7	SCADA COMMUNICATIONS POLE REPLACEMENTS	NEW	$250,000	$250,000			
	14	SECURITY IMPROVEMENTS AT CAMINO CAPISTRANO	NEW	$400,000	$400,000			
		Subtotal - Multi-System Projects			**$3,390,000**	**$2,110,600**	**$1,630,000**	**$4,050,000**
POTABLE								
2018007	7	RESERVOIR MANAGEMENT SYSTEM REPLACEMENT PHASE 3	CONSTRUCTION	$8,219,756	$2,750,000			
2019030	7	PW STEEL RESERVOIR SEISMIC RETROFITS	CONSTRUCTION	$5,862,381	$3,500,000	$700,000		
2015006	7	I.D. NO. 1 MASTER METER RELOCATION	DESIGN	$2,100,000	$900,000	$1,000,000		
2017016	12	SOUTH COUNTY PIPELINE TAKEOUT FACILITY	DESIGN	$10,200,000	$500,000	$1,000,000	$2,000,000	$6,500,000
2017019	14	1050-ZONE SECONDARY FEED PUMP STATION AND TRANSMISSION MAIN	DESIGN	$7,900,000	$500,000	$4,000,000	$2,900,000	
2019003	7	BLACKBIRD AND SOLITAIRE EASEMENT PIPELINE REHABILITATION/REPLACEMENT	DESIGN	$500,000	$400,000			
2019029	7	RESERVOIR MANAGEMENT SYSTEM REPLACEMENT PHASE 4	DESIGN	$6,350,000	$1,200,000	$2,500,000	$2,500,000	
2019037	7	CROWN VALLEY PARKWAY TRANSMISSION MAIN LOWER REACH REPLACEMENT	DESIGN	$6,000,000	$1,200,000	$3,000,000	$1,500,000	
2020013	7	EAST ALISO CREEK RESERVOIR INLET AND OUTLET PIPING MODIFICATIONS	DESIGN	$660,000	$550,000			
2020018	7	RESERVOIR MANAGEMENT SYSTEM REPLACEMENT PHASE 5	DESIGN	$8,970,000	$500,000	$2,000,000	$4,300,000	$2,000,000
2022001	7	2022-23 VALVE REPLACEMENT - PW	DESIGN	$4,800,000	$3,200,000	$1,500,000		
	7	FIRE HYDRANT REPLACEMENT PROGRAM	PROGRAM	$1,800,000		$200,000	$200,000	$1,400,000
	7	METER REPLACEMENT PROGRAM - PW	PROGRAM	$4,500,000		$500,000	$500,000	$3,500,000
	7	OPERATIONS-LED CAPITAL IMPROVEMENTS - PW	PROGRAM	$4,500,000		$500,000	$500,000	$3,500,000
	7	PIPELINE REHABILITATION AND REPLACEMENT PROGRAM - PW	PROGRAM	$100,000,000				$100,000,000
	7	RESERVOIR RECOATING PROGRAM - PW	PROGRAM	$8,000,000			$1,000,000	$7,000,000
	7	SERVICE LINE REPLACEMENT PROGRAM - PW	PROGRAM	$18,000,000		$2,000,000	$2,000,000	$14,000,000
	7	VALVE REPLACEMENT PROGRAM - PW	PROGRAM	$25,000,000			$2,250,000	$22,750,000
	7	VERTICAL ASSETS REHABILITATION AND REPLACEMENT PROGRAM - PW	PROGRAM	$37,000,000		$250,000	$750,000	$11,000,000
2018004	7	ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2 - PW		$1,500,000		$200,000	$800,000	$500,000
2018014	7	APPURTENANCE ADJUSTMENTS FOR CROWN VALLEY PARKWAY WIDENING		$200,000		$40,000	$160,000	
2018017	7	MIRA VISTA AND VISTA LADERA EASEMENT PIPELINE REHABILITATION/REPLACEMENT		$400,000		$75,000	$325,000	
2018021	7	SHEEP HILLS PUMP STATION IMPROVEMENTS		$1,400,000				$1,400,000
2018025	14	750-ZONE PW SYSTEM EXTENSION AT SALT SPRAY DRIVE		$400,000				$400,000
2019005	7	EAST ALISO CREEK RESERVOIR SITE PAVING REPLACEMENT		$125,000		$125,000		
2020017	7	REHABILITATION OF THE MARGUERITE RESERVOIR		$995,000	$20,000	$700,000	$275,000	
2020020	7	SHEEP HILLS RESERVOIR FENCE REPLACEMENT		$50,000	$50,000			
2021016	7	SUBSIDENCE MITIGATION AT EAST ALISO, MARGUERITE, AND EL DORADO SITES		$250,000	$50,000	$200,000		
OCWD	12	OCWD BASIN EMERGENCY INTERCONNECTION		$20,000,000	$500,000	$1,000,000	$500,000	$18,000,000
	7	450-ZONE ALISO CREEK PW PIPELINE RELOCATION		$420,000				$420,000
	14	750-ZONE BEACON-RANCHO IMPROVEMENTS		$1,500,000				$1,500,000
	7	BEAR BRAND PUMP STATION PUMP REPLACEMENT		$600,000				$600,000
	12	CIP TAKEOUT FACILITY AT MARGUERITE PUMP STATION		$5,000,000				$5,000,000
	7	CROWN VALLEY PARKWAY TRANSMISSION MAIN UPPER REACH REHABILITATION		$10,000,000				$10,000,000
	7	CROWN VALLEY RESERVOIR NO. 3 ROOF PLATE REPLACEMENT AND INTERIOR RECOATING		$1,020,000				$1,020,000

PROJECT NO.	FUND	PROJECT NAME	PROJECT STATUS/ PRIORITY	TOTAL PROJECT BUDGET	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26 to 2031-32
	7	ELECTRICAL SYSTEM IMPROVEMENTS PHASE 3 - PW		$700,000			$100,000	$600,000
	7	HIDDEN HILLS AND LAGUNA SERRANO APARTMENTS PIPELINE REPLACEMENT		$360,000			$60,000	$300,000
	6	LOW RESOLUTION METER REPLACEMENT		$2,000,000	$1,000,000	$1,000,000		
	14	PORTABLE GENERATOR CONNECTIONS AT PRIORITY POTABLE WATER PUMP STATIONS		$160,000				$160,000
	14	RANCHO CAPISTRANO 450-ZONE LOOP		$540,000				$540,000
	14	RANCHO CAPISTRANO 450-ZONE SERVICE		$300,000				$300,000
	14	ROLLING HILLS PUMP STATION AUXILIARY GENERATOR		$850,000				$850,000
	7	SADDLEBACK RESERVOIR SITE PAVING REPLACEMENT		$125,000				$125,000
	7	SOUTHWESTERN TRANSMISSION MAIN REHABILITATION		$7,000,000			$400,000	$6,500,000
	7	2022-23 FIRE HYDRANT REPLACEMENT	NEW	$200,000	$200,000			
	7	2022-23 METER REPLACEMENT - PW	NEW	$990,000	$990,000			
	14	2022-23 NEW SYSTEM VALVES	NEW	$250,000	$250,000			
2022100	7	2022-23 OPERATIONS-LED CAPITAL IMPROVEMENTS - PW	NEW	$650,000	$650,000			
	7	2022-23 PRESSURE REDUCING STATION REHABILITATION - PW	NEW	$230,000	$50,000	$180,000		
	7	2022-23 SERVICE LINE REPLACEMENT - PW	NEW	$2,000,000	$2,000,000			
	7	2023-24 VALVE REPLACEMENT - PW	NEW	$3,250,000	$100,000	$2,150,000	$1,000,000	
	7	ALISO VIEJO MOV REPLACEMENT	NEW	$675,000				$675,000
	7	CASA DEL OSO PUMP STATION AUXILIARY GENERATOR REPLACEMENT	NEW	$850,000		$100,000	$250,000	$500,000
	7	COUNTRY VILLAGE PUMP STATION AUXILIARY GENERATOR REPLACEMENT	NEW	$850,000		$100,000	$250,000	$500,000
	7	EASTERN TRANSMISSION MAIN REHABILITATION	NEW	$500,000	$500,000			
	7	EASTERN TRANSMISSION MAIN REHABILITATION - SMWD REIMBURSEMENT	REIMBURSEMENT	-$350,000	-$350,000			
	7	HIGH-LOW VALVE REPLACEMENT	NEW	$1,125,000				$1,125,000
	7	LA PAZ AND CABOT PW PIPELINE REPLACEMENT	NEW	$1,250,000				$1,250,000
Subtotal - Potable Projects					**$21,210,000**	**$25,020,000**	**$24,520,000**	**$223,915,000**
RECYCLED								
2010013	6	RWOS - LA PAZ ROAD BRIDGE CROSSING RW PIPELINE	CONSTRUCTION	$723,034	$500,000			
2021009	7	2021-22 PRESSURE REDUCING STATION REHABILITATION - RW	CONSTRUCTION	$200,000	$160,000			
2018005	7	ELECTRICAL SYSTEM IMPROVEMENTS PHASE 2 - RW	DESIGN	$1,000,000	$250,000	$750,000		
	7	METER REPLACEMENT PROGRAM - RW	PROGRAM	$495,000		$55,000	$55,000	$385,000
	7	OPERATIONS-LED CAPITAL IMPROVEMENTS - RW	PROGRAM	$2,250,000		$250,000	$250,000	$1,750,000
	7	RESERVOIR RECOATING PROGRAM - RW	PROGRAM	$2,640,000			$330,000	$2,310,000
	6	RWOS - RECYCLED WATER RETROFITS PROGRAM	PROGRAM	$4,770,000		$10,000	$150,000	$2,450,000
	7	SERVICE LINE REPLACEMENT PROGRAM - RW	PROGRAM	$630,000		$70,000	$70,000	$490,000
	7	VALVE REPLACEMENT PROGRAM - RW	PROGRAM	$2,250,000		$250,000	$250,000	$1,750,000
	7	VERTICAL ASSETS REHABILITATION AND REPLACEMENT PROGRAM - RW	PROGRAM	$13,800,000		$100,000	$100,000	$700,000
2021015	7	IMPROVEMENTS AT GALIVAN AND ALISO VIEJO RW PUMP STATIONS		$600,000	$75,000	$525,000		
	7	CROWN POINT PUMP STATION PUMP REPLACEMENT AND VFD INSTALLATION		$490,000				$490,000
	7	ELECTRICAL SYSTEM IMPROVEMENTS PHASE 3 - RW		$325,000			$50,000	$275,000
	14	GALIVAN BYPASS IMPROVEMENTS		$225,000	$225,000			
	7	LAGUNA NIGUEL REGIONAL PARK RW METER VAULT RECONFIGURATION		$150,000				$150,000
	7	OAKGROVE DRIVE RW PIPELINE REPLACEMENT		$785,000				$525,000
	7	REHABILITATION OF 20-INCH RW MAIN TO LAGUNA HEIGHTS RESERVOIR		$910,000			$75,000	$835,000
	7	RW RESERVOIR DRAINAGE IMPROVEMENTS AT 3 SITES		$725,000				$725,000
	6	RWOS - RW MAIN REPLACEMENT FROM CABOT ROAD TO GALIVAN PS		$850,000				$850,000
	6	RWOS - RW MAIN REPLACEMENT FROM CROWN VALLEY RESERVOIR TO CABOT ROAD		$1,725,000				$1,725,000
	7	RWOS - RW MAIN REPLACEMENT FROM GALIVAN PS TO LA PAZ PS		$11,000,000				$11,000,000
	7	2022-23 METER REPLACEMENT - RW	NEW	$125,000	$125,000			
2022200	7	2022-23 OPERATIONS-LED CAPITAL IMPROVEMENTS - RW	NEW	$200,000	$200,000			
	7	2022-23 PRESSURE REDUCING STATION REHABILITATION - RW	NEW	$100,000	$50,000	$50,000		
	6	2022-23 RECYCLED WATER RETROFITS	NEW	$10,000	$10,000			
	7	2022-23 SERVICE LINE REPLACEMENT - RW	NEW	$70,000	$70,000			
	7	2022-23 VALVE REPLACEMENT - RW	NEW	$250,000	$250,000			
Subtotal - Recycled Projects					**$1,915,000**	**$2,060,000**	**$1,330,000**	**$26,410,000**

FY 2022-23 | 10-YEAR CAPITAL IMPROVEMENT PROGRAM

PROJECT NO.	FUND	PROJECT NAME	PROJECT STATUS/ PRIORITY	TOTAL PROJECT BUDGET	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26 to 2031-32
WASTEWATER								
2012024	7	UPPER SALADA LIFT STATION AUXILIARY GENERATOR REPLACEMENT	CONSTRUCTION	$1,266,318	$250,000			
2018024	7	VALENCIA LIFT STATION MANHOLE DIVERSIONS	CONSTRUCTION	$250,000	$150,000			
2013004	7	REGIONAL LIFT STATION FORCE MAIN REPLACEMENT	DESIGN	$19,200,000	$1,000,000	$4,000,000	$8,000,000	$4,900,000
2013005	7	LOWER SALADA LIFT STATION FORCE MAIN REPLACEMENT	DESIGN	$9,200,000	$1,800,000	$5,000,000	$2,000,000	
2019007	7	NORTH ALISO LIFT STATION RECONSTRUCTION	DESIGN	$6,000,000	$300,000	$1,500,000	$3,000,000	$1,000,000
2020009	7	NIGUEL WEST SEWER LINING	DESIGN	$1,500,000	$100,000	$800,000	$600,000	
2021011	7	ALISO CREEK LIFT STATION REHABILITATION	DESIGN	$3,900,000	$300,000	$1,500,000	$2,000,000	
	7	MANHOLE REHABILITATION PROGRAM	PROGRAM	$2,250,000		$250,000	$250,000	$1,750,000
	7	OPERATIONS-LED CAPITAL IMPROVEMENTS - WW	PROGRAM	$4,500,000		$500,000	$500,000	$3,500,000
	7	PIPELINE REHABILITATION AND REPLACEMENT PROGRAM - WW	PROGRAM	$8,000,000				$8,000,000
	7	VERTICAL ASSETS REHABILITATION AND REPLACEMENT PROGRAM - WW	PROGRAM	$31,800,000			$800,000	$25,000,000
2011043	14	3A OUTFALL LINE VALVES		$450,000				$450,000
2011043	14	3A OUTFALL LINE VALVES - SMWD REIMBURSEMENT	REIMBURSEMENT	-$225,000				-$225,000
2018028	7	UPPER SALADA LIFT STATION BYPASS IMPROVEMENTS		$300,000				$250,000
2020015	7	LIFT STATION VENTILATION SYSTEM IMPROVEMENTS		$650,000	$100,000	$500,000	$50,000	
	7	3A ETM CREEK BANK STABILIZATION		$2,000,000				$2,000,000
	7	3A ETM REPLACEMENT AVENIDA DE LA VISTA		$2,475,000				$2,475,000
	7	3A ETM REPLACEMENT CAMINO CAPISTRANO		$3,500,000				$3,500,000
	7	3A ETM REPLACEMENT SAN JUAN CREEK COUNTY OF ORANGE PHASE VIII		$900,000				$900,000
	7	3A ETM IMPROVEMENTS - SMWD REIMBURSEMENT	REIMBURSEMENT	-$4,437,500				-$4,437,500
	14	LOWER SALADA LIFT STATION OVERFLOW WETWELL		$1,250,000			$150,000	$1,100,000
	7	MANHOLE ADJUSTMENTS ON OSO-TRABUCO INTERCEPTOR SEWER		$260,000				$260,000
	7	MANHOLE ADJUSTMENTS ON OSO-TRABUCO INTERCEPTOR SEWER - SMWD REIMBURSEMENT	REIMBURSEMENT	-$155,662				-$155,662
	7	UPPER SALADA LIFT STATION FORCE MAIN REHABILITATION AND REPLACEMENT		$6,000,000				$6,000,000
	7	2022-23 MANHOLE REHABILITATION	NEW	$250,000	$250,000			
2022400	7	2022-23 OPERATIONS-LED CAPITAL IMPROVEMENTS - WW	NEW	$500,000	$500,000			
	7	LOWER SALADA LIFT STATION AUXILIARY GENERATOR REPLACEMENT	NEW	$400,000	$50,000	$200,000	$150,000	
	7	TRACT NO. 4096 SEWER JOINT GROUTING	NEW	$2,800,000	$100,000	$1,200,000	$1,500,000	
	7	UPPER BOUNDARY OAK LIFT STATION AUXILIARY GENERATOR REPLACEMENT	NEW	$850,000	$100,000	$500,000	$250,000	
	14	WASTEWATER TRUNK MAIN REPLACEMENT - 3A SUBBASIN PHASE 1	NEW	$1,200,000	$50,000	$300,000	$850,000	
	14	WASTEWATER TRUNK MAIN REPLACEMENT - 3A SUBBASIN PHASE 2	NEW	$1,400,000	$100,000	$300,000	$1,000,000	
		Subtotal - Wastewater Projects			**$5,150,000**	**$16,550,000**	**$21,100,000**	**$56,266,838**
PLANT 3A								
2019301	7	PLANT 3A SUBSIDENCE MITIGATION	CONSTRUCTION	$4,800,000	$4,000,000			
2019302	7	PLANT 3A SOLIDS HANDLING FACILITIES IMPROVEMENTS	DESIGN	$47,800,000	$10,000,000	$20,000,000	$16,250,000	
2021303	14	PLANT 3A SOLIDS LOADOUT FACILITY	DESIGN	$9,800,000	$2,000,000	$4,000,000	$3,500,000	
	7	OPERATIONS-LED CAPITAL IMPROVEMENTS - 3A	PROGRAM	$2,250,000		$250,000	$250,000	$1,750,000
2021301	7	PLANT 3A ODOR CONTROL SYSTEM EVALUATION AND REHABILITATION		$1,250,000	$150,000	$1,100,000		
2021302	14	PLANT 3A SECURITY IMPROVEMENTS		$125,000	$75,000	$50,000		
	7	PLANT 3A LIQUIDS HANDLING FACILITIES IMPROVEMENTS		$24,000,000	$250,000	$1,250,000	$1,500,000	$21,000,000
	14	PLANT 3A EMERGENCY STANDBY GENERATOR		$1,500,000				$1,500,000
2022300	7	2022-23 OPERATIONS-LED CAPITAL IMPROVEMENTS - 3A	NEW	$750,000	$750,000			
	14	PLANT 3A NETWORK CABLING IMPROVEMENTS	NEW	$150,000	$150,000			
	7	PLANT 3A IMPROVEMENTS FUNDS 7 AND 14 - SMWD REIMBURSEMENT	REIMBURSEMENT	-$25,994,531	-$4,886,719	-$7,495,313	-$6,046,875	-$6,820,313
		Subtotal - Plant 3A Projects			**$12,488,281**	**$19,154,688**	**$15,453,125**	**$17,429,688**
REGIONAL								
IRWD	7	IRWD BAKER WATER TREATMENT PLANT CAPITAL PROJECTS	PROGRAM	$1,500,000	$150,000	$150,000	$150,000	$1,050,000
JRWSS	7	SCWD/JRWSS CAPITAL PROJECTS	PROGRAM	$7,453,323	$2,699,476	$884,160	$1,014,173	$2,855,514
SMWD	7	SMWD CAPITAL PROJECTS - JOINT FACILITIES	PROGRAM	$2,615,375	$375,375	$840,000	$0	$1,400,000
SOCWA	7	SOCWA CAPITAL PC 2	PROGRAM	$19,431,545	$1,251,793	$1,684,714	$1,430,708	$15,064,331
SOCWA	7	SOCWA CAPITAL PC 5	PROGRAM	$249,275	$37,827	$0	$5,280	$206,168
SOCWA	7	SOCWA CAPITAL PC 15	PROGRAM	$11,289,736	$1,496,498	$1,539,761	$608,576	$7,644,901
SOCWA	7	SOCWA CAPITAL PC 17	PROGRAM	$73,338,463	$7,370,519	$7,057,618	$8,751,783	$50,158,543

FY 2022-23 | 10-YEAR CAPITAL IMPROVEMENT PROGRAM

PROJECT NO.	FUND	PROJECT NAME	PROJECT STATUS/ PRIORITY	TOTAL PROJECT BUDGET	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26 to 2031-32
SOCWA	7	SOCWA CAPITAL PC 21	PROGRAM	$1,661,144	$189,423	$26,710	$0	$1,445,011
SOCWA	7	SOCWA CAPITAL PC 24	PROGRAM	$3,113,644	$75,447	$78,457	$21,924	$2,937,816
ETWD	7	ETWD R6 RESERVOIR COVER AND LINER REPLACEMENT		$1,218,000	$1,122,000	$60,000		
		Subtotal - Regional Projects			**$14,768,358**	**$12,321,420**	**$11,982,443**	**$82,762,284**
TOTAL					$58,921,639	$77,216,707	$76,015,568	$410,833,810

NOTE: TOTAL 10-YEAR CIP PROJECTION (FY 2022-23 THROUGH FY 2031-32) = $622,987,724

Asset Details

GENRTR000152

Name	Generator
Description	Generator Building
Active	☑
Class	Equipment|Electrical|Generator
Location	Facilities/Stations|Regional Lift Station Site|Regional Lift Station

DETAILS

Department	
Division	
Purchase Date	
Install Date	1/1/1999
Warranty Expires	
Purchase Cost	$0.00
Book Value	
Replace Cost	$0.00
Replace Cost Updated	
Notes	

Location Details

Address	28386 Alicia Parkway		
Phone1		**Phone2**	
City	Laguna Niguel	**State**	California
Country	United States		
Zip	92677	**Fax**	
Email			

Asset Attributes

Manufacturer	Caterpillar	**Model**	SR4B
Manufacturer SN	200782	**Size 1**	1250
Unit 1	kVA	**Size 2**	480
Unit 2	V	**System**	Wastewater
Size 3	1503	**Unit 3**	Amp
Tabware Legacy ID	1S-RL-GEN1	**As Built Sheet Nbr**	Alicia Parkway Regional Sewage Lift Station - Electrical Sectional Map - E-19D
As Built File Name	WW_E19-D		
		Owner	MNWD

WORK ORDER

Number	Date	Main Task	Type	Status	Description	Total Cost
WO-10197	8/1/2022	Auxiliary Testing	Preventive	Close		$89.60
WO-09041	7/1/2022	Auxiliary Testing	Preventive	Close		$86.12
WO-08086	6/1/2022	Auxiliary Testing	Preventive	Close		$107.65
WO-07035	5/4/2022	Cooling System	Reactive	Close		$85.28
WO-07034	5/4/2022	Cooling System	Reactive	Cancel		$0.00
WO-06726	5/1/2022	Auxiliary Testing	Preventive	Close		$68.46
WO-06600	4/27/2022	Engine	Reactive	Close		$51.16
06373	4/19/2022	Repair	Reactive	Close	Repair	$0.00
05956	4/1/2022	Auxiliary Engine Service	Preventive	Cancel		$0.00
05901	4/1/2022	Auxiliary Testing	Preventive	Close		$86.12
05198	3/1/2022	Auxiliary Testing	Preventive	Close		$86.12

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WORK ORDER

Number	Date	Main Task	Type	Status	Description	Total Cost
04626	2/1/2022	Auxiliary Testing	Preventive	Close		$86.12
04438	1/25/2022	Unknown Problem	Reactive	Close		$34.11
03522	1/1/2022	Auxiliary Testing	Preventive	Close		$76.52
02888	12/1/2021	Auxiliary Testing	Preventive	Close		$144.98
02270	11/1/2021	Auxiliary Testing	Preventive	Close		$86.12
01466	10/1/2021	Auxiliary Testing	Preventive	Close		$125.85
00130	4/1/2021	Auxiliary Engine Service	Preventive	Cancel		$0.00
						$1,214.21

PREVENTIVE MAINTENANCE

Number	Name	Task Name	Type	Lead	Description
Fleet 00048	Auxiliary Engine Service - Regional Lift Station	Auxiliary Engine Service	Preventive		Regional Lift Station
SMaint 00118	Auxiliary Testing - Regional	Auxiliary Testing	Preventive		Regional

CONDITION ASSESMENT

Number	Type	Date	Comments
03613		3/11/2021	

Asset Details

BLOWER000003

Name	Blower 3 - Aeration
Description	Secondary Treatment
Active	☑
Class	Equipment|Mechanical|Aeration Blower|Multistage Centrifugal Aeration Blower
Location	Facilities/Stations|3A Treatment Plant|30000 - Secondary Treatment

DETAILS

Department	
Division	
Purchase Date	
Install Date	3/7/2022
Warranty Expires	
Purchase Cost	$3,498.20
Book Value	
Replace Cost	$0.00
Replace Cost Updated	
Notes	

Location Details

Address	26801 Camino Capistrano		
Phone1		**Phone2**	
City	Mission Viejo	**State**	California
Country	United States		
Zip	92691	**Fax**	
Email			

Asset Attributes

Manufacturer	Spencer	**Model**	C441A1
Manufacturer SN	825402K21	**Unit 1**	CFM
Size 2	3565	**System**	Wastewater
Unit 2	RPM		

WORK ORDER

Number	Date	Main Task	Type	Status	Description	Total Cost
WO-10900	8/17/2022	PLC Panel	Reactive	Complete		
WO-10410	8/1/2022	Liquids-Aeration Blower 1-3	Preventive	Close		$59.73
						$59.73

PREVENTIVE MAINTENANCE

Number	Name	Task Name	Type	Lead	Description
SMaint Plant 3A 00054	Liquids-Aeration Blower 1 -3	Liquids-Aeration Blower 1 -3	Preventive		

COMMENTS

Created By	Created Date	Comment
DCollom	3/7/2022	WO Number : 04424, WO Date : 01/24/2022 03:07 PM, Lead Worker : Jason Boyce, Supervisor : Larry A Ballew

Asset Details

PUMPNG000025

Name	Pump 1
Description	Pump Building_Pump 1 Assembly
Active	☑
Class	Equipment|Mechanical|Pump|Vertical Pump
Location	Facilities/Stations|Del Avion Lift Station Site|Del Avion Lift Station

DETAILS

Department	
Division	
Purchase Date	
Install Date	1/1/1995
Warranty Expires	
Purchase Cost	$0.00
Book Value	$0.00
Replace Cost	$0.00
Replace Cost Updated	
Notes	

Location Details

Address	24881 Camino Del Avion		
Phone1		**Phone2**	
City	Dana Point	**State**	California
Country	United States		
Zip	92629	**Fax**	
Email			

Asset Attributes

Manufacturer	Fairbanks Morse	**Model**	Vertical Turbine
Manufacturer SN	1469752-1	**Size 1**	4
Unit 1	Inch	**System**	Wastewater
Material	CI	**As Built File Name**	F320001C
Owner	MNWD		
GlobalID (Survey)	{B9B0333A-AACD-4BE9-BE37-C1390FE84631}		

WORK ORDER

Number	Date	Main Task	Type	Status	Description	Total Cost
WO-10258	8/1/2022	Pump Inspection	Preventive	Close		$9.95
WO-06787	5/1/2022	Pump Inspection	Preventive	New		$0.00
04661	2/1/2022	Pump Inspection	Preventive	Close		$12.76
02305	11/1/2021	Pump Inspection	Preventive	Cancel		$0.00
02123	11/1/2021	Pump Inspection	Preventive	Cancel		$0.00
01929	10/21/2021	Pumps	Reactive	Close		$503.47
						$526.18

PREVENTIVE MAINTENANCE

Number	Name	Task Name	Type	Lead	Description
SMaint 00018	Quarterly Pump Inspection	Pump Inspection	Preventive		
SMaint 00190	Quarterly Pump Inspection - Del Avion	Pump Inspection	Preventive		Del Avion

CONDITION ASSESMENT

Number	Type	Date	Comments
01337		3/11/2021	

SCWD

SCWD provides annual budgeting for maintenance of the GRF facility included in the table below. Funding for the JB Latham facility is accomplished through budgeting through SOCWA's Project Committee 2.

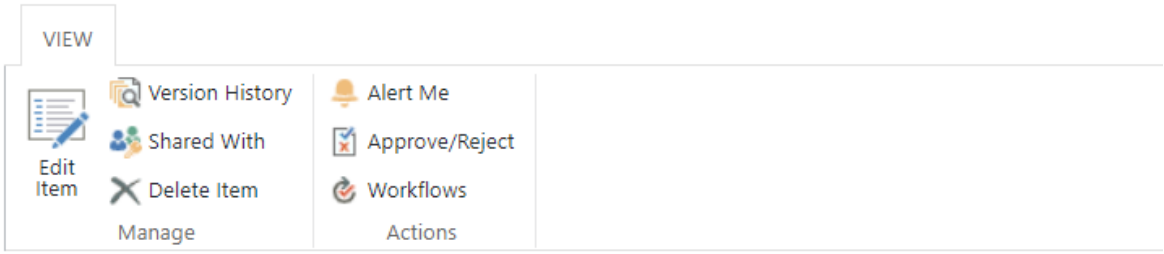
WATER OPERATING EXPENDITURES

	FY 2021 Actuals	FY 2022 Revised Budget	FY 2022 Actuals YTD (April 29, 2022)	FY 2022 Projected Expenditures	FY 2023 Proposed Expenditures	Difference	% Change
Water Operations							
Cross Connection	$ 167,100	$ 178,160	$ 164,152	$ 207,490	$ 196,527	$ (10,964)	-5%
GRF POCHE	107,345	81,938	69,436	98,645	85,000	(13,645)	-14%
GRF SCOTF	66,214	75,000	52,546	65,082	78,000	12,918	20%
Ground Water Recovery	663,499	738,407	591,592	709,551	744,357	34,806	5%
Meters	65,790	168,872	72,431	92,524	107,625	15,101	16%
Monitoring Wells	107,525	107,407	50,743	63,845	77,722	13,877	22%
Reservoir Management System	273,771	290,075	237,234	293,973	365,386	71,413	24%
Reservoirs and Tanks	173,975	256,715	147,507	167,952	232,360	64,408	38%
Water Pump Plants	396,929	451,552	297,459	370,262	543,122	172,861	47%
Water Sampling	185,592	190,294	135,459	181,571	182,188	616	0%
Water Supply & Purchases	6,674,732	6,565,780	4,767,212	6,337,621	7,069,036	731,415	12%
Water Transmission Lines	2,061,792	2,173,522	1,573,694	1,988,379	2,146,525	158,146	8%
	10,944,263	**11,277,722**	**8,159,465**	**10,576,894**	**11,827,848**	**1,250,953**	**12%**

SMWD -1

Sharepoint Comprehensive Asset Management Program (CAMP) Project Example

CIP List - CHIQT-02-23002



CIP Budget Type	CRP
Basic Code	CHIQT-02-C-006
Manager	Patterson, Jason; Butler, Tricia
Project Name	CWRP - Replace orig Prim, Sec, Tert MCCs
Facility Name	Chiquita Water Reclamation Plant
CRP Budget Type	04 - Chiquita Water Reclamation Plant
Total Budget	$2,450,000
SMWD Budget Share (if less than 100%)	
Start	2021
End	2024
Munis Project Code	CHIQT0206C
SearchField	CHIQT0206C
Ongoing	
Estimated FY20 Spend	
Estimated FY21 Spend	
Estimated FY22 Spend	
Estimated FY23 Spend	$1,600,000.00
Estimated FY24 Spend	$850,000.00

SMWD -1 continued

Sharepoint Comprehensive Asset Management Program (CAMP) Project Example

Background	The first phase of the Chiquita Water Reclamation Plant was built in the 1980s. The electrical components in order to support the preliminary, primary, secondary, and tertiary treatment processes have been in place since then. There are seven MCCs that need to be replaced at an average cost of $350k.
Justification	The electrical equipment has become obsolete and spare parts are no longer available.
Notes	Stewart, Bryan (11/22/2021 10:07 AM):
Contract #	C-1241U.015
Improvement District	2 - Coto de Caza; 4A - Rancho Santa Margarita; 4B - Las Flores; 4C - Esencia; 4D - Ladera Ranch; 4E - Sendero; 5 - PA3; 6 - PA4/PA5/PA8
Project Status	Feasibility Study/Condition Assessment
Vendor Info	
Capitalized/Expensed	
Approval Status	Pending
Attachments	20200213090738 2.pdf 20200219 - TB Edits 83.pdf TimePhoto_20180308_093625.jpg

Content Type: Item
Version: 33.0
Created at 2/6/2019 2:54 PM by System Account
Last modified at 1/26/2022 3:04 PM by Butler, Tricia

Close

SMWD-2

Mainstar CMMS Program – Preventative Maintenance Work Order Examples

Example Facility: Horno Lift Station

List of Work Orders associated with the facility:

CAL-GASD-002_SWR0013632	Stationary Gas Detector 90 Day Calibration
HRNOS71-COMP-3M_SWR0018132	Horno LS Quarterly Compressor Maintenance
HRNOS71-GEN-1Y_SWR0018132	Horno LS Yearly Generator Maintenance
HRNOS71-GEN-1Y_SWR0017367	Horno LS Generator Maintenance – 3 Year
HRNOS71-GEN-14D_SWR0019973	Horno LS 14 Day Generator Maintenance
HRNOS71-MONTHLY-1M_SWR0019939	Horno LS Monthly Maintenance
HRNOS71-VENT-1Y- SWR0017677	Horno LS Yearly Ventilation Filter Maintenance
HRNOS71-VENT-3M- SWR0018620	Horno LS Ventilation Fan Maintenance – 3 month
HRNOS71-WW-3M- SWR0019914	Horno LS Monthly Wet Well Maintenance
HRNOS71-PUMPMAINT-6M_SWR0016948	Horno LS Pump Maintenance – 6 month

Below is the detail associated with work order HRNOS71-MONTHLY-1M_SWR0019939 Horno LS Monthly Maintenance

MAINTSTAR

MaintStar Sewer Work Order

SMWD

Page 1 of 2
9/26/2022

W/O # SWR0019939	**ADM Sys.** 00001	**Activity** 408 MECH - MONTHLY MAINT	**Priority** LS
Issued 09/06/22 07:52	**Target** 09/06/22 07:52	**Assign to** OPSMECH	**Approv. By**
Closed 09/07/22 08:25	**W/O Type** PM	OPS MECHANICAL	

Acc. No.	Proj. No.	Map ID	Map Sheet

Task Descr/Complaint: *Horno L/S Monthly Maintenance*

Action Taken:

1. *Inspect MCC panels for burnt bulbs; Replace as necessary. Clean MCC filters to maximize cooling.*

2. *Check interior and exterior for burnt out lighting; Replace as necessary.*

3. *Conduct Alarm Testing:*
   P-1, P-2, P-3, P-4 Fail
   Float ON
   Auxillary Wet Well Float ON
   Summons for Help
   Dry Well Flooded
   High/Low Sonic (Wet well)
   Low Float

4. *Check Chart Recorder pens; Replace as necessary.*

5. *Test Float System levels and note the set points on the work order.*

6. *Check the condition of the Floats in the Wet well; Clean as necessary.*

Mainstar CMMS Program – Preventative Maintenance Work Order Examples

7. Check Sonic Level System for proper operation and level.

8. Inspect the condition of the Wet well including grease condition.

9. Check Gas Detector for all green lights; Replace bulbs as necessary.

10. Check Gas Detector for Current calibration. Notify Supervisor if not up to date.

11. Check the Ventilation System for proper operation. Inspect the Drive belt; Replace as necessary. (Belt# 4L-790 (2) each)

12. Check Pumps and Motors for excessive heat and vibration.

13. Exercise Suction and Discharge valves. Please note any issues with the valves.

14. Check the Compressor for proper operation. Inspect the oil level; Add as required. Clean compressor of foreign debris. Test the auto drain valve for proper operation. Drain condensation from compressor.

15. Exercise all valves in the outside vault.

16. Inspect/Test the operation of the Surge Tank System. Exercise all valves. Clean Site Glass.

17. Inspect, flush, and exercise Sump Pumps.

18. Wash down the interior and exterior of the station. Remove all trash and debris.

19. Check the Fire Extinguishers. Replace if discharged or out of range.

21. Clean station. If an outside venue, pick up trash and leaves.

22. Hose down if necessary.

Completed Monthly Maintenance. Checked off task list . Alarms tested and received . p-1,p-2,p-3 fail . high w/w low w/w , float system on , aux w/w flooded , man down , dry well flooded , single pump high flow , multi pump high flow , station low flow . Cleaned general area . Cleared and reset all alarms .

Date	Type	Code / Description	Hr mm	Pay Type	Qty	Cost Each	Total Cost
09/06/22 00:00	labor	[redacted]					
09/06/22 00:00	labor	[redacted]					
		Labor Cost					[redacted]

Seq	Asset Type	Asset Id	Rating	Asset Descr	Cst Shr	%	Block #	Street / Cross Street / City ,State Zip
1	LIFT	HORNOLS	.00	Horno LS	1.00		29595	Cambridge Rd / Michael Rd / LADERA RAN

Labor Cost	[redacted]	**Material Cost**	[redacted]	**Equipment Cost**	[redacted]
Contractors Cost	[redacted]	**Misc. Cost**	[redacted]	**Total W/O Cost**	[redacted]

SMWD - 3

MUNIS Software – Asset Detail Example

Santa Margarita Water District

CAPITAL ASSET WORKSHEET

ASSET #	00003971-011-0		MASTER ASSET				
CLASS	S	SEWER PLANT	FUND SOURCE				
SUBCL	SL	SEWAGE LIFT STA	ACQUIS METH	CS	CONSTRUCTE		
COMMODITY							
DEPT	ENG	ENGINEERING	ACQUIS DATE		06/30/2020		
LOC CODE	SJCK	SAN JUAN CREEK	ACQUIS COST		66,980.74		
LOC MEMO			ACRES		0.000		
ROOM			QTY				
STORAGE LOC			UNIT PRICE		0.00		
			PURCH MEMO				
STATUS	A	ACTIVE					
CONDITION	N	NEW	SOY BOOK		66,980.74		
CUSTODIAN		CAPITAL ASSET CUSTODI	CURRENT BOOK		60,003.49		
TITLEHOLDER			EST SALVAGE		0.00		
			REPL COST		66,980.74		
TAG #	00003971-011-0		LAST INVENT				
SERIAL #			IMPROVE MEMO				
MANUFACTURER							
MODEL			RETIRE DATE				
MODEL YEAR			DISP CODE				
LICENSE #			DISP PRICE		0.00		
			SALE PRICE		0.00		

DESCRIPTION	WW SAN JUAN CREEK LS RELINE WETWELL		
MAINT CONT	Y	INSURED	N
VENDOR DESC	Vendor Name Mi	CARRIER	
TYPE	P	INSURED VAL	0.00
EXPIRE DATE		EXPIRE DATE	
ANNUAL COST	0.00	POLICY CST	0.00
MEMO		MEMO	

DEPRECIATE	Y		
DEPREC PRIN	66,980.74		
FIRST YR/PR	2020/12	LAST YR/PR	2022/12
EST LIFE	20		
PERIODS TAKEN	25		
ACCUM DEPREC	6,977.25		

VEND #	PO #	DOCUMENT #	INVOICE #	INV DATE	INV AMT
		0			66,980.74

User-Defined Fields

Field Name	Value

GL Accounts

TYPE	ORG	OBJ	PROJ	PERCENT
Asset	00010000	160275		100.00
Contra	00010900	950175		100.00
Depreciation Expense	00010100	697701		100.00
Accumulated Depreciation	00010000	160375		100.00

PO Accounts

ORG	OBJ	PROJ	AMOUNT
00012900	950122		66,980.74

Report generated: 09/26/2022 09:26
User: christinem
Program ID: famstmnt

Page 1

SMWD-4

Sample Condition Assessment – Excerpts

HARPER & ASSOCIATES ENGINEERING, INC.

CONSULTING ENGINEERS

1240 E. Ontario Ave., Ste. 102-312, Corona, CA 92881-8671
Phone (951) 372-9196 Fax (951) 372-9198
www.harpereng.com

CORROSION REPORT

PROJECT:	Corrosion Engineering Evaluation of a Secondary Clarifier
STRUCTURE:	Secondary Clarifier No. 1
OWNER:	Santa Margarita Water District
LOCATION:	Chiquita Water Reclamation Plant, California
REPORT BY:	Andre Harper, Project Engineer
DATE:	March 2022

I. GENERAL INFORMATION

A. Construction and Maintenance Details

Structure is a partially buried circular reinforced concrete secondary clarifier. The clarifier was constructed in 2001 and has a diameter of approximately 90 feet, an approximate overall height of 20 feet, and a maximum water depth of approximately 15 feet. A bridge provides access to the drive unit at the center column.

B. Site Conditions

The clarifier is located on a dirt site within the plant with two other secondary clarifiers. The clarifier is partially buried with approximately five feet of the wall exposed. There is adequate vehicle access around the clarifier. No difficulty is anticipated for Contractor mobilization, assuming the use of normal portable air compressor and related equipment.

There are plant facilities in close proximity to the clarifier which could be adversely affected by dust and contamination associated with abrasive blast cleaning and painting operations. Accordingly, extreme caution must be exercised during all cleaning and painting operations.

SMWD-4

Sample Condition Assessment – Excerpts

INVESTIGATION

A. The investigation of the interior surfaces was accomplished as follows.

1. A temporary extension ladder was utilized to access the interior of the clarifier.

2. Interior surfaces were examined visually by walking the length of the bridge, examining areas within reach while traversing the floor of the clarifier wearing hip waders, climbing the temporary ladder, and systematically traversing the launder trough.

3. Various chipping tools were employed to examine typical areas of defective concrete and coating within reach.

4. Photographs were taken of typical and specific areas to illustrate condition of surfaces.

Santa Margarita Water District
Secondary Clarifier No. 1
March 2022

III. OBSERVATIONS

A. Based upon the above reported investigation, the following observations were noted.

1. Random minor corrosion is present on the influent well and feedwell. (Photos E-2 through E-15)

2. Minor to moderate corrosion is present on the nuts and bolts securing the feedwell to the I-beam support structure. (Photo E-10)

3. Minor corrosion is present on the I-beams supporting the influent well. (Photos E-12, E-13, and E-15)

4. Random areas of minor delamination and corrosion are present on the torque cage and rake arms. (Photos E-15 through E-22)

VI. COST ESTIMATES

A. Based on current and previous projects of similar scope, preliminary cost estimates for work as noted in RECOMMENDATIONS were calculated by using data from those projects.

1. Abrasive blast cleaning to Near White Metal (SSPC-SP10) and applying a three-coat epoxy coating system to all steel components within the clarifier would be in the cost range of $150,000 to $180,000.

Sample Condition Assessment – Excerpts

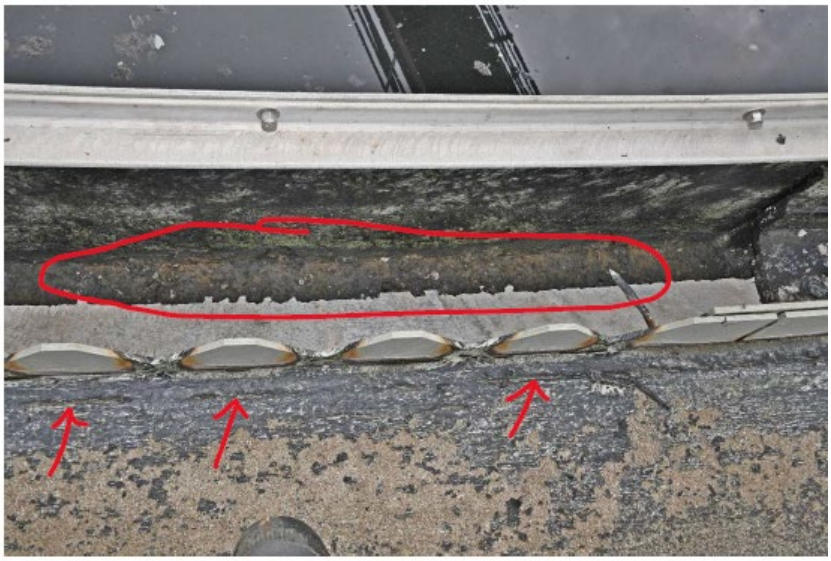
V. RECOMMENDATIONS

A. Based on the above noted observations, the following recommendations are offered.

1. Although the coating system is in overall good condition, as noted above, the coating is at or near its useful service life for this type of structure. Therefore, due to the age of the existing coating and random corrosion, it is recommended all steel components below the bridge be abrasive blast cleaned to Near White Metal (SSPC-SP10) and a three-coat epoxy coating system applied to a minimum total dry film thickness of 25 mils. The original coal tar epoxy used in the clarifier does not meet the new 100 mg/L South Coast AQMD requirements and cannot be used again.

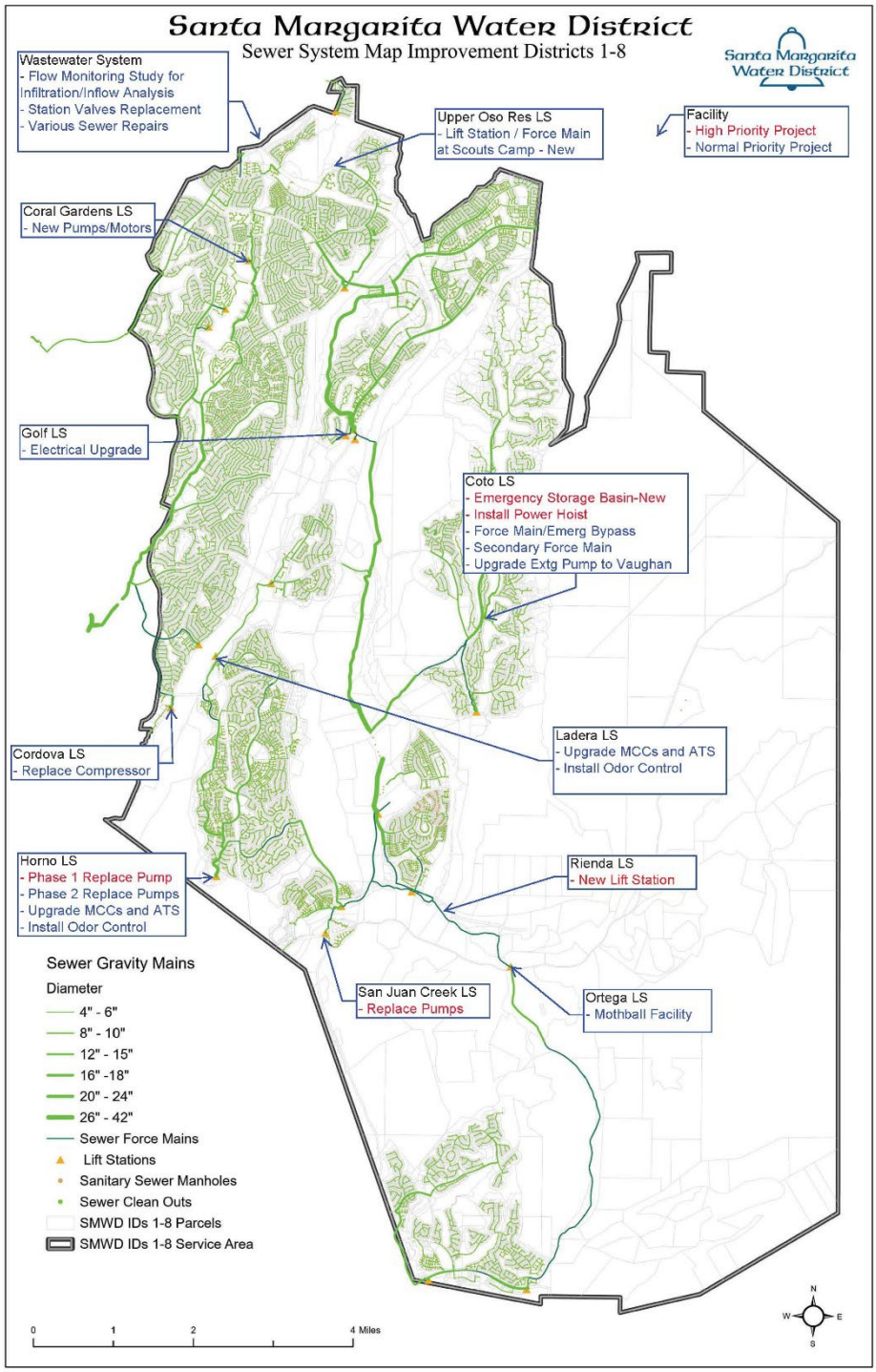
2. No significant metal loss or pitting was noted during the investigation. However, when the steel surfaces are abrasive blast cleaned, random areas could develop. Therefore, it is recommended to include an optional hourly rate bid item for weld repair of excessively pitted or perforated areas and for grinding of sharp edges.

E-28 View of the notched weir and baffle, illustrating severe corrosion of the angle at the bottom of the baffle. Note cracking of the black sealant between the notched weir and concrete wall.



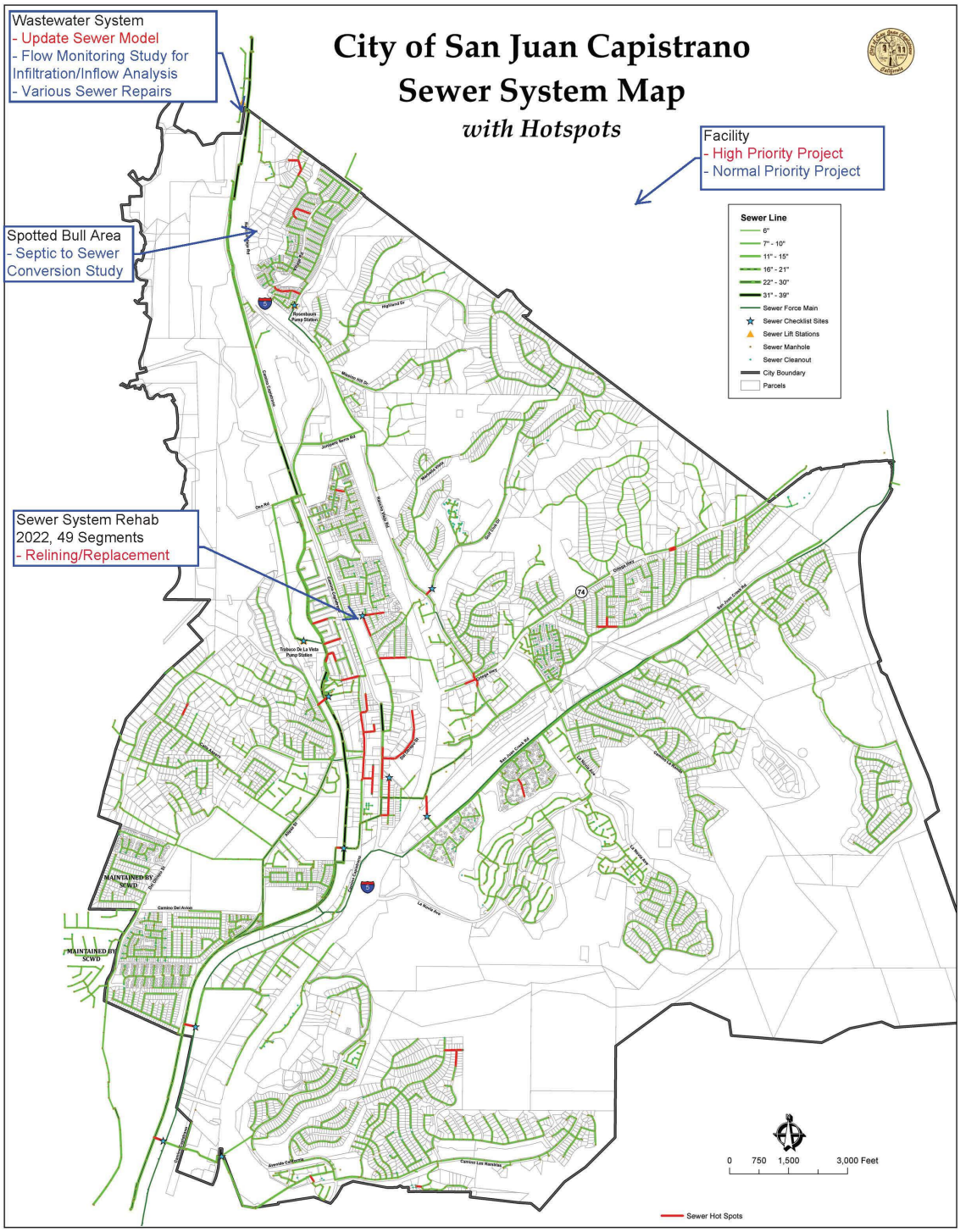
SMWD -5 - System Maps

Improvement Districts 1 – 8 (IDs 1-8) Sewer System Map



SMWD-5 Systems Maps continued

ID 9 (City of San Juan Capistrano) Sewer System Map



SMWD - 6

Operations Repair and Replacement Projects List

Wastewater

Name of Project	Budget
Coral Gardens LS - New Pumps/Motors	$ 150,000
Cordova LS - Replace Compressor	$ 80,000
Coto LS - Force Main Feasibility Study and Provisions for emerg bypass	$ 500,000
Coto LS - Emergency storage basin	$ 5,600,000
Coto LS - Install power hoist	$ 70,000
Coto LS - Secondary FM in CDC Dr	$ 1,100,000
Coto LS - Upgrade existing P3 to Vaughan	$ 80,000
~~De La Vista LS - Add Pump Rail System~~	~~$ 25,000~~
~~Felipe LS - Reline Wet Well~~	~~$ 60,000~~
Golf LS - Electrical Upgrade	$ 150,000
~~Golf LS - Reline Wet Well~~	~~$ 60,000~~
Horno LS - Phase 1 Replace Pump	$ 200,000
Horno LS - Install odor control	$ 390,000
Horno LS - Ph 2 Pump Replacement Design	$ 300,000
Ladera LS - Install odor control	$ 225,000
Ladera LS - Upgrade MCC and ATS	$ 250,000
Ortega LS - Mothball facility	$ 50,000
~~Plano LS - Upgrades (Odor Control, Reroute Sewer)~~	~~$ 1,630,000~~
San Juan Creek LS - Replace pumps	$ 500,000
Spotted Bull Septic Sewer Conversion	$ 50,000
Upper Oso - Boy Scout LS - Install packaged lift station	$ 250,000
Wastewater System - I/I Study - Phase 1	$ 250,000
Wastewater System - Station Valve Replacement	$ 50,000
Wastewater System (SJC) - Sewer System Rehab Projects 2022	$ 2,500,000
Wastewater System (SJC) - Sewer Flow Monitoring and Model	$ 1,000,000
Wastewater System - Various Sewer Repairs (ID 1-8) FY2023	$ 600,000
Wastewater System - Various Sewer Repairs (ID-9) FY2023	$ 400,000
New/Supply/Reliability	
Rienda (PA3) Sewer Lift Station (New)	$ 8,175,000

SMWD – 6 - Continued

Operations Repair and Replacement Projects List

Chiquita Water Reclamation Plant

Name of Project	Budget
CWRP - Assess, Rehabilitate gas sphere	$ 175,000
CWRP - Bldg Vent Fan Replace Solids Area	$ 100,000
CWRP - Demo and Repurpose Ferric Storage and Feed - Digester Area	$ 75,000
CWRP - Dewatering/Belt Press Rebuild	$ 500,000
CWRP - Digester Gas Compressor System Modifications	$ 600,000
CWRP - Digesters Clean/Coat FY20-22	$ 1,200,000
CWRP - Gate 5 Sludge Processing Demo Project	$ 200,000
CWRP - ILS and Screening	$ 12,000,000
CWRP - ILS Force Main Relocate	$ 500,000
CWRP - PC 1-3 and PC4 4 Launder Repair and Coating	$ 650,000
CWRP - Recycled Pump Refurb	$ 210,000
CWRP - Replace aeration diffusers	$ 250,000
CWRP - Replace digester gas piping	$ 1,000,000
CWRP - Replace filtrate pumps	$ 50,000
CWRP - Replace sludge pumps at primary clarifier	$ 250,000
CWRP - Replace tertiary filters backwash pumps	$ 60,000
CWRP - Secondary Clarifier 1 and 4 Rehab	$ 800,000
New/Expansion/RW Conversion	
CWRP - RMV Share Upgrade Bar Screen Facility (New)	$ -
CWRP - Expansion Electrical and Instrumentation (Expansion)	$ 2,893,000
CWRP - Grit Chamber Expansion and Vactor Station (Expansion)	$ 2,152,000
CWRP - Odor Control ILS and Upper Plant (Expansion)	$ 1,000,000
CWRP - Project Common Costs (Expansion)	$ 20,124,000
CWRP - Secondary Treatment (Expansion)	$ 13,000,000
CWRP - Tertiary Treatment (Expansion)	$ 6,856,000
CWRP - RW Pump Station Modifications (related to Trampas Res) (RW Conv/Convy)	$ 1,500,000
CWRP - RW Zone A Modifications (RW Conv/Convy)	$ 2,000,000
General/Electrical Improvements	
CWRP - Batteries and Microgrid System	$ -
CWRP - Beautification	$ 300,000
CWRP - Perform electrical study	$ 250,000
CWRP - Potable Water Supply	$ 200,000
CWRP - Preliminary Architectural for Lab Expansion	$ 150,000
CWRP - Rehab Structures	$ 200,000
CWRP - Replace orig Prim, Sec, Tert MCCs	$ 2,450,000
CWRP - Replace Solar Inverters	$ 150,000
CWRP - SCADA Replacements	$ 133,300
CWRP - Site Improvements Primary/Secondary Areas	$ 400,000
CWRP - Upgrade security	$ 250,000

SOCWA – SOCWA's CIP can be found in the budget here: http://www.socwa.com/wp-content/uploads/2022/07/FY-2022-23-BOD-Approved-Budget-1.pdf

Appendix C - Funding in compliance with §6.3.5.7.4

CSC - Maintenance Planning and Capital Summary

The table below also includes capital spending for the CSC Water Reclamation Plant. Please also reference the following link which has a more comprehensive capital funding discussion: https://issuu.com/z.y.mazboudi/docs/fy_2021_cip_and_maintenance_projects_with_link

FUND 054-476				Current Year Projected				Future Years						
			Project	Budgeted	11/30/2021 YTD		Projected	Six year						
Proj #	Description	DIV	Category	FY 21/22	Exp	Balance	FY 21/22	Total	FY 22/23	FY 23/24	FY 24/25	FY 25/26	FY 26/27	FY 27/28
Maintenance & Other Projects														
21201	Computerized Maintenance Management System Implementation	Eng.	Maint.	63,850	-	63,850	63,580							
24200	Sewer System Rehabilitation			250,000	4,877	245,123	250,000	1,300,000	250,000	250,000	250,000	250,000	300,000	300,000
26212	WRP Sluice Gate Replacements	Eng.	Maint.	214,440	24,340	190,100	214,440	500,000	500,000					
21203	Digester #2 Cleaning, Residual Disposal & Inspection	Eng.	Maint.	250,000	-	250,000	250,000	100,000	100,000					
36202	WRP Odor Scrubber Analysis	Eng.	Study	12,600	-	12,600	12,600							
New	Centrifuge Conveyor Improvements								300,000					
Future	Sewer Asset Management					-		50,000			50,000			
12208	WRP Ferric Tank Replacement	Eng.	Maint.	150,000	4,289	145,711	150,000	0						
21205	WRP and Sewer Facility Pavement Rehabilitation	Eng.		299,700	-	299,700	299,700	200,000				200,000		
	Total M & O Projects			**$1,240,590**	**$33,506**	**$1,207,084**	**$1,240,320**	**$2,150,000**	**$1,150,000**	**$250,000**	**$300,000**	**$450,000**	**$300,000**	**$300,000**

MNWD

MNWD produces an annual budget can be found here: https://www.mnwd.com/wp-content/uploads/2022/06/FY-2022-23-GFOA-Budget-Document-FINAL-for-Posting.pdf

SCWD

SCWD produces an annual budget that can be found here: https://cms9files.revize.com/scoastwaterdist/SCWD_FY22_BudgetBook_final.pdf

The allocation for SOCWA Maintenance and Operations funded by SCWD can be found, starting on p.89 of the SCWD budget.

SMWD

The SMWD Capital budget is found here: https://www.smwd.com/DocumentCenter/View/2562/FY20-5-Yr-Cap-Rep-Program

SOCWA

The FY 22-23 Budget for SOCWA can be found here: http://www.socwa.com/wp-content/uploads/2022/07/FY-2022-23-BOD-Approved-Budget-1.pdf

The remaining useful life, funding requirements, and anticipated replacements for the JB Latham facility can be found in the JB Latham Remaining Useful Life Asset Inventory table below.

JB Latcham Remaining Useful Life Asset Inventory

Item No.	Key No.	Equipment Tag #	New tag # (2021)	Area	Asset Category	Quantity	Start-up Date (Year) 2004 Data	Start-up Date (Year) 2019 Data	Useful Life (Years)	Replace Date (Year) 2004	Replace Date (Year) 2017	Remaining life in 2004	Remaining life in 2019	Refurb Date (Year)	Estimated Replacement Cost
187	A-ADM-1	AHU14030	02AHU14030	Administration	Air Conditioner #1	1	1995	2017	8	2003	2025	-1	6		$8,040
187	A-ADM-1	AHU14031	02AHU14031	Administration	Air Conditioner #2	1	1995	2017	8	2003	2025	-1	6		
187	A-ADM-1	AHU14033	02AHU14033	Administration	Air Conditioner #3	1	1995	2016	15	2010	2031	6	12		
187	A-ADM-1	AHU14034	02AHU14034	Administration	Air Conditioner #4	1	1995	2016	15	2010	2031	6	12		
188	A-ADM-2	HTR14011	02HTR14011	Administration	Furnace #1 Admin Bldg	1	1995	2017	15	2010	2032	6	13		$19,980
188	A-ADM-2	HTR14012	02HTR14012	Administration	Furnace #2 Admin Bldg	1	1995	2017	15	2010	2032	6	13		$19,980
188	A-ADM-2	HTR14013	02HTR14013	Administration	Furnace #3 Admin Bldg	1	1995	2017	15	2010	2032	6	13		$19,980
180	A-EFF-1	F61029	02F61029	Effluent Management	Effluent Pump Station Blower	1	1993	1993	15	2008	2008	4	-11		$122,890
181	A-EFF-2	F41601	02F41601	Effluent Management	Exhaust Fan #1 (V-Belt #A51)	1	1993	1993	15	2008	2008	4	-11		$55,350
181	A-EFF-2	F41602	02F41602	Effluent Management	Exhaust Fan #2 (V-Belt #A51)	1	1993	1993	15	2008	2008	4	-11		$55,350
181	A-EFF-2	F41603	02F41603	Effluent Management	Exhaust Fan #3 (V-Belt #A93)	1	1993	1993	15	2008	2008	4	-11		$55,350
292	A-EN-1	CP40313	02CP40313	Energy	Air Compressor Equipment	1	2004	2004	15	2019	2019	15	0		$3,360
295	A-EN-3	CP62060	02CP62060	Energy	Service Air Systems/Compressors	1	2000	2007	10	2010	2017	6	-2		$19,110
278	A-OC-1	F21034	02F21034	Odor Control	Odor Control Transfer Fan	1	1998	1998	10	2008	2008	4	-11		$57,160
278	A-OC-1	F21135	02F21135	Odor Control	Odor Control Transfer Fan	1	1998	1998	10	2008	2008	4	-11		$57,160
278	A-OC-1	F24031	02F24031	Odor Control	Odor Control Transfer Fan	1	1998	1998	10	2008	2008	4	-11		$57,160
278	A-OC-1	F24032	02F24032	Odor Control	Odor Control Transfer Fan	1	1998	2017	10	2008	2027	4	8		$57,160
279	A-OC-2	F41621	02F41621	Odor Control	Fresh Air Fans	1	1984	1984	30	2014	2014	10	-5		$67,280
279	A-OC-2	F41622	02F41622	Odor Control	Fresh Air Fans	1	1984	1984	30	2014	2014	10	-5		$67,280
279	A-OC-2	F41623	02F41623	Odor Control	Fresh Air Fans	1	1984	1984	30	2014	2014	10	-5		$67,280
279	A-OC-2	F41624	02F41624	Odor Control	Fresh Air Fans	1	1984	2016	30	2014	2046	10	27		$67,280
280	A-OC-3	F41611	02F41611	Odor Control	Foul Air Fans	1	1984	1984	30	2014	2014	10	-5		$36,900
280	A-OC-3	F41612	02F41612	Odor Control	Foul Air Fans	1	1984	1984	30	2014	2014	10	-5		$36,900
282	A-OC-4	F21210-2	02F21210-2	Odor Control	Odor control Scrubber No. 1 Ducting and Exhaust Fans	1	1998	1998	15	2013	2013	9	-6		$14,020
282	A-OC-4	MME21200	02MME21200	Odor Control	Odor control Scrubber No. 1	1	1998	1998	15	2013	2013	9	-6		$14,020
282	A-OC-4	P21001	02P21001	Odor Control	Scrubber No. 1 Recric pump No. 1	1	1998	1998	15	2013	2013	9	-6		
282	A-OC-4	P21002	02P21002	Odor Control	Scrubber No. 1 Recric pump No. 2	1	1998	1998	15	2013	2013	9	-6		
282	A-OC-4	P21003	02P21003	Odor Control	Scrubber No. 1 Pump - Bleach	1	1998	1998	15	2013	2013	9	-6		
282	A-OC-4	P21004	02P21004	Odor Control	Scrubber No. 1 Pump - Caustic Stage 1	1	1998	1998	15	2013	2013	9	-6		
282	A-OC-4	P21005		Odor Control	Scrubber No. 1 Pump - Caustic Stage 2/3	1	1998	1998	15	2013	2013	9	-6		
285	A-OC-5			Odor Control	Odor control Scrubber No. 2 Ducting and Exhaust Fans	1	2002	2002	15	2017	2017	13	-2		$12,610
285	A-OC-5	MME42000	02MME42000	Odor Control	Odor control Scrubber No. 2	1	2002	2002	15	2017	2017	13	-2		$12,610
285	A-OC-5	P42001	02P42001	Odor Control	Scrubber No. 2 Recric pump No. 1	1	2002	2002	15	2017	2017	13	-2		
285	A-OC-5	P42002	02P42002	Odor Control	Scrubber No. 2 Recric pump No. 2	1	2002	2002	15	2017	2017	13	-2		
285	A-OC-5	P42003	02P42003	Odor Control	Scrubber No. 2 Pump - Bleach	1	2002	2002	15	2017	2017	13	-2		
285	A-OC-5	P42004	02P42004	Odor Control	Scrubber No. 2 Pump - Caustic Stage 1	1	2002	2002	15	2017	2017	13	-2		
285	A-OC-5	P42005	02P42005	Odor Control	Scrubber No. 2 Pump - Caustic Stage 2/3	1	2002	2002	15	2017	2017	13	-2		
22	A-PT-1			Primary Treatment	East RDPG/Blower Building Air Conditioner	1	1995	2004	8	2003	2012	-1	-7		$22,390
107	A-SEC-1	B31010	02B31010	Secondary Treatment	East Blower Building Multistage Blower #1	1	1971	1971	25	1996	1996	-8	-23		$509,760
107	A-SEC-1	B31020	02B31020	Secondary Treatment	East Blower Building Multistage Blower #2	1	1971	1971	25	1996	1996	-8	-23		$509,760
107	A-SEC-1	B31030	02B31030	Secondary Treatment	East Blower Building Multistage Blower #3	1	1971	2004	25	1996	2029	-8	10		$509,760
108	A-SEC-2	CP30163	02CP30163	Secondary Treatment	East Blower Building Air Compressors	1	2000	2010	15	2015	2025	11	6		$40,790
110	A-SEC-3	B31150	02B31150	Secondary Treatment	West Blower Building Multistage Blowers	1	1978	2016	20	1998	2036	-6	17		$509,760
110	A-SEC-3	B31160	02B31160	Secondary Treatment	West Blower Building Multistage Blowers	1	1978	2016	20	1998	2036	-6	17		$509,760
110	A-SEC-3	B31170	02B31170	Secondary Treatment	West Blower Building Multistage Blowers	1	1978	2016	20	1998	2036	-6	17		$509,760
111	A-SEC-4	CP30264	02CP30264	Secondary Treatment	West Blower Building Air Compressors	1	1995	1995	15	2010	2010	6	-9		$40,790
223	A-SOL-1	CP42110	02CP42110	Solids	DAF Compressor #1	1	1971	2004	15	1986	2019	-18	0		$11,200
223	A-SOL-1	CP42112	02CP42112	Solids	DAF Compressor #2	1	1971	2004	15	1986	2019	-18	0		$11,200
297	M-PW-1	SCR7110	02SCR7110	Plant Water	Plant Water Strainer #1	1	1988	2012	20	2008	2032	4	13		$3,480
297	M-PW-1	SCR7120	02SCR7120	Plant Water	Plant Water Strainer #2	1	1988	2012	20	2008	2032	4	13		$3,480
298	M-PW-2	P71111?	02P71111?	Plant Water	Plant Water Pump Mechanical #1	1	2004	2004	15	2019	2019	15	0		$17,330
298	M-PW-2	P71112?	02P71112?	Plant Water	Plant Water Pump Mechanical #2	1	2004	2004	15	2019	2019	15	0		
298	M-PW-2	P71113?	02P71113?	Plant Water	Plant Water Pump Mechanical #3	1	2004	2004	15	2019	2019	15	0		
298	M-PW-2	P71114?	02P71114?	Plant Water	Plant Water Pump Mechanical #4	1	2004	2004	15	2019	2019	15	0		
301	M-PW-3	T00200	02T00200	Plant Water	Air Gap Tank	1	2003	2003	15	2018	2018	14	-1		$27,720
301	M-PW-3	P40411	02P40411	Plant Water	Air Gap System - Mechanical	1	2003	2003	15	2018	2018	14	-1		$27,720
301	M-PW-3	P40412	02P40412	Plant Water	Air Gap System - Mechanical	1	2003	2000	15	2018	2015	14	-4		$27,720
173	P-EFF-1	P73010	02P73010	Effluent Management	Effluent Pumps	1	1993	1993	30	2023	2023	19	4		$165,440
173	P-EFF-1	P73020	02P73020	Effluent Management	Effluent Pumps	1	1993	1993	30	2023	2023	19	4		$165,440
173	P-EFF-1	P73030	02P73030	Effluent Management	Effluent Pumps	1	1993	1993	30	2023	2023	19	4		$165,440
173	P-EFF-1	P73040	02P73040	Effluent Management	Effluent Pumps	1	1993	1993	30	2023	2023	19	4		$165,440
288	P-EN-1	P61011	02P61011	Energy	Hot Water Circulation Pumps	1	1986	1986	15	2001	2001	-3	-18		$15,780
288	P-EN-1	P62412	02P62412	Energy	Hot Water Circulation Pumps	1	1986	1986	15	2001	2001	-3	-18		$15,780
153	P-FC-1	T60000	02T60000	Ferric Chloride System	Ferric Chloride Tank	1	2004	2004	8	2012	2012	8	-7		$29,100
153	P-FC-1	P42150	02P42150	Ferric Chloride System	Ferric Chloride Metering Pump #1	1	2004	2004	8	2012	2012	8	-7		
153	P-FC-1	P42151	02P42151	Ferric Chloride System	Ferric Chloride Metering Pump #2	1	2004	2004	8	2012	2012	8	-7		
153	P-FC-1	CTI60000	02CTI60000	Ferric Chloride System	Ferric Tank Level Meter	1	2004	2004	8	2012	2012	8	-7		
153	P-FC-1	P42151	02P42151	Ferric Chloride System	Ferric Chloride Metering Pumps	1	2004	2004	8	2012	2012	8	-7		$29,100
70	P-PRI-1	P30191	02P30191	Primary Treatment	East Primary Sedimentation Sludge Pump #1	1	2000	2000	15	2015	2015	11	-4		$45,960
70	P-PRI-1	P30192	02P30192	Primary Treatment	East Primary Sedimentation Sludge Pump #2	1	2000	2000	15	2015	2015	11	-4		$45,960
66	P-PRI-2	P26013	02P26013	Primary Treatment	Decant Pump	1	1979	1979	6	1985	1985	-19	-34		$25,980
83	P-PRI-3	P30241	02P30241	Primary Treatment	West Primary Sludge Pump #3	1	2001	2001	6	2007	2007	3	-12		$45,960
83	P-PRI-3	P30242	02P30242	Primary Treatment	West Primary Sludge Pump #4	1	2001	2001	6	2007	2007	3	-12		$45,960
17	P-PT-1	P23031	02P23031	Primary Treatment	East Grit Pump #1	1	1978	1978	5	1983	1983	-21	-36		$36,460
17	P-PT-1	P23032	02P23032	Primary Treatment	East Grit Pump #2	1	1978	1978	5	1983	1983	-21	-36		$36,460
28	P-PT-2	P30101	02P30101	Primary Treatment	East Raw Sewage Pump #1	1	1989	1989	20	2009	2009	5	-10	2015	$181,920
28	P-PT-2	P30102	02P30102	Primary Treatment	East Raw Sewage Pump #2	1	1989	1989	20	2009	2009	5	-10	2015	$181,920
28	P-PT-2	P30103	02P30103	Primary Treatment	East Raw Sewage Pump #3	1	1989	1989	20	2009	2009	5	-10	2015	$181,920
43	P-PT-3	P23133	02P23133	Primary Treatment	West Grit Pump #3	1	1978	1978	5	1983	1983	-21	-36		$36,460
43	P-PT-3	P23134	02P23134	Primary Treatment	West Grit Pump #4	1	1978	1978	5	1983	1983	-21	-36		$36,460
55	P-PT-4	P30204	02P30204	Primary Treatment	West Raw Sewage Pump #4	1	1978	1978	31	2009	2009	5	-10		$94,600
55	P-PT-4	P30205	02P30205	Primary Treatment	West Raw Sewage Pump #5	1	1978	1978	31	2009	2009	5	-10		$94,600
55	P-PT-4	P30206	02P30206	Primary Treatment	West Raw Sewage Pump #6	1	1978	1978	31	2009	2009	5	-10		$94,600
55	P-PT-4	P30207	02P30207	Primary Treatment	West Raw Sewage Pump #7	1	1978	1978	31	2009	2009	5	-10		$94,600
296	P-PW-1	P71111	02P71111	Plant Water	Plant Water Pumps	1	1988	2004	20	2008	2024	4	5		$117,000
296	P-PW-1	P71112	02P71112	Plant Water	Plant Water Pumps	1	1988	2004	20	2008	2024	4	5		$117,000
296	P-PW-1	P71113	02P71113	Plant Water	Plant Water Pumps	1	1988	2004	20	2008	2024	4	5		$117,000
296	P-PW-1	P71114	02P71114	Plant Water	Plant Water Pumps	1	1988	2004	20	2008	2024	4	5		$117,000
296	P-PW-1	P73101	02P73101	Plant Water	Bleach Metering Pump #1	1	1999	1999	20	2019	2019	15	0		
296	P-PW-1	P73102	02P73102	Plant Water	Bleach Metering Pump #2	1	1999	1999	20	2019	2019	15	0		
296	P-PW-1	P73103	02P73103	Plant Water	Bleach Metering Pump #3	1	1999	1999	20	2019	2019	15	0		
296	P-PW-1	P73104	02P73104	Plant Water	Bleach Metering Pump #4	1	1999	1999	20	2019	2019	15	0		
178	PR-EFF-1	E73029X		Effluent Management	Effluent Pump Station Standby Power Generator	1	1993	1993	20	2013	2013	9	-6		$137,050
177	PR-EFF-2	E73029	02E73029	Effluent Management	Effluent Pumps Station Engine	1	1993	1993	20	2013	2013	9	-6		$479,650
291	PR-EN-3			Energy	Waste Heat Boilers	1	1990	2016	15	2005	2031	1	12		$107,640
281	PR-OC-1	MME21000	02MME21000	Odor Control	Odor control Scrubber No.1	1	1998	1998	15	2013	2013	9	-6		$216,390
284	PR-OC-2			Odor Control	Odor control Scrubber No.2	1	2002	2002	15	2017	2017	13	-2		$155,750
62	PR-PRI-1	DU24012	02DU24012	Primary Treatment	East Primary Sedimentation Basin Sludge Collectors	1	1964	2011	10	1974	2021	-30	2		$262,560
62	PR-PRI-1	DU24134	02DU24134	Primary Treatment	East Primary Sedimentation Basin Sludge Collectors	1	1964	2011	10	1974	2021	-30	2		$262,560
62	PR-PRI-1	DU24156	02DU24156	Primary Treatment	East Primary Sedimentation Basin Sludge Collectors	1	1964	2011	10	1974	2021	-30	2		$262,560
62	PR-PRI-1	DU24178	02DU24178	Primary Treatment	East Primary Sedimentation Basin Sludge Collectors	1	1964	2011	10	1974	2021	-30	2		$262,560
62	PR-PRI-1	DU24190	02DU24190	Primary Treatment	East Primary Sedimentation Basin Sludge Collectors	1	1964	2011	10	1974	2021	-30	2		$262,560
63	PR-PRI-2	DU24012	02DU24012	Primary Treatment	East Primary Sedimentation Sludge Collector Drives T1&2	1	1971	2011	35	2006	2046	2	27		$18,210
63	PR-PRI-2	DU24134	02DU24134	Primary Treatment	East Primary Sedimentation Sludge Collector Drives T3&4	1	1971	2011	35	2006	2046	2	27		$18,210
63	PR-PRI-2	DU24156	02DU24156	Primary Treatment	East Primary Sedimentation Sludge Collector Drives T5&6	1	1971	2011	35	2006	2046	2	27		$18,210
64	PR-PRI-3	MME24010	02MME24010	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T1	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	DU25012	02DU25012	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T1&2	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	MME24020	02MME24020	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T2	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	DU25034	02DU25034	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T3&4	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	MME24030	02MME24030	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T3	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	DU25056	02DU25056	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T5&6	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	MME24040	02MME24040	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T4	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	DU25078	02DU25078	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T7&8	1	1990	2015	18	2008	2033	4	14		$263,340
64	PR-PRI-3	MME24050	02MME24050	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T5	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	DU25090	02DU25090	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T9	1	1990	1990	18	2008	2008	4	-11		$263,340
64	PR-PRI-3	MME24060	02MME24060	Primary Treatment	East Primary Sedimentation Scum Collectors - Skimmer T6	1	1990	1990	18	2008	2008	4	-11		$263,340
77	PR-PRI-6	Tank #		Primary Treatment	West Primary Sedimentation Basin Sludge Collectors #7	1	1995	2012	10	2005	2022	1	3		$131,280
77	PR-PRI-6	Tank #		Primary Treatment	West Primary Sedimentation Basin Sludge Collectors #8	1	1995	2013	10	2005	2023	1	4		$131,280
77	PR-PRI-6	Tank #		Primary Treatment	West Primary Sedimentation Basin Sludge Collectors #9	1	1995	2014	10	2005	2024	1	5		$131,280
78	PR-PRI-7	DU25078	02DU25078	Primary Treatment	West Primary Sedimentation Basin Sludge Collectors Drives	1	1978	1978	25	2003	2003	-1	-16		$12,140
78	PR-PRI-7	DU25090	02DU25090	Primary Treatment	West Primary Sedimentation Basin Sludge Collectors Drives	1	1978	2015	25	2003	2040	-1	21		$12,140
79	PR-PRI-8	MME24070	02MME24070	Primary Treatment	West Primary Sedimentation Scum Collectors - Skimmer T7	1	1990	1990	15	2005	2005	1	-14		$87,780
79	PR-PRI-8	MME24080	02MME24080	Primary Treatment	West Primary Sedimentation Scum Collectors - Skimmer T8	1	1990	1990	15	2005	2005	1	-14		$87,780
79	PR-PRI-8	MME24090	02MME24090	Primary Treatment	West Primary Sedimentation Scum Collectors - Skimmer T9	1	1990	1990	15	2005	2005	1	-14		$87,780
10	PR-PT-1	SCR21011	02SCR21011	Primary Treatment	East Bar Screen #1	1	1999	1999	20	2019	2019	15	0	2007	$683,100
10	PR-PT-1	SCR21012	02SCR21012	Primary Treatment	East Bar Screen #2	1	1999	2005	20	2019	2025	15	6	2007	$683,100
39	PR-PT-10	GDW21122	02GDW21122	Primary Treatment	West Grit Classifier	1	2007	2007	10	2017	2017	13	-2		$45,950
57	PR-PT-12	E00442	02E00442	Primary Treatment	West Side Standby Generator #2	1	1979	2011	30	2009	2041	5	22		$123,710
11	PR-PT-2	CON21010	02CON21010	Primary Treatment	East Screenings Conveyor #1	1	1998	1998	10	2008	2008	4	-11		$415,320
11	PR-PT-2	CON21020	02CON21020	Primary Treatment	East Screenings Conveyor #2	1	1998	1998	10	2008	2008	4	-11		$415,320
11	PR-PT-2	CON21030	02CON21030	Primary Treatment	East Screenings Conveyor #3	1	1998	2002	10	2008	2012	4	-7		$415,320
12	PR-PT-3	MME21010	02MME21010	Primary Treatment	East Screenings Compactor	1	2005	2005	10	2015	2015	11	-4		$132,830
13	PR-PT-4	GDW21011	02GDW21011	Primary Treatment	East Grit Classifier	1	2005	2014	10	2015	2024	11	5		$53,600
30	PR-PT-7	E00391	02E00391	Primary Treatment	East Side Standby Power Generator #1	1	1989	1989	20	2009	2009	5	-10		$174,640

37	PR-PT-8	SCR21113	02SCR21113	Primary Treatment	West Bar Screen #3	1	1990	2007	19	2009	2026	5	7		$341,550
NEW	NEW	MME21011	02MME21011	Primary Treatment	West Screenings Compactor	1	NA	2007	10	NA	2017	NA	-2		$132,830
114	PR-SEC-2	E40110	02E40110	Secondary Treatment	Cogen Engine	1	1990	2017	15	2005	2032	1	13		$4,000,000
118	PR-SEC-3	T35010	02T35010	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2008	5	1969	2013	-35	-6		$529,110
118	PR-SEC-3	T35020	02T35020	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2009	5	1969	2014	-35	-5		$529,110
118	PR-SEC-3	T35030	02T35030	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2010	5	1969	2015	-35	-4		$529,110
118	PR-SEC-3	T35040	02T35040	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2011	5	1969	2016	-35	-3		$529,110
118	PR-SEC-3	T35050	02T35050	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2012	5	1969	2017	-35	-2		$529,110
118	PR-SEC-3	T35060	02T35060	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2013	5	1969	2018	-35	-1		$529,110
118	PR-SEC-3	T35070	02T35070	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2014	5	1969	2019	-35	0		$529,110
118	PR-SEC-3	T35080	02T35080	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2015	5	1969	2020	-35	1		$529,110
118	PR-SEC-3	T35090	02T35090	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors	1	1964	2016	5	1969	2021	-35	2		$529,110
119	PR-SEC-4	DU35010	02DU35010	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors Drive T1	1	1964	2016	25	1989	2041	-15	22		$30,350
119	PR-SEC-4	DU35023	02DU35023	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors Drive T2&3	1	1964	2016	25	1989	2041	-15	22		$30,350
119	PR-SEC-4	DU35045	02DU35045	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors Drive T4&5	1	1964	2016	25	1989	2041	-15	22		$30,350
119	PR-SEC-4	DU35067	02DU35067	Secondary Treatment	East Secondary Sedimentation Basin Sludge Collectors Drive T6&7	1	1964	2016	25	1989	2041	-15	22		$30,350
126	PR-SEC-7	T35110	02T35110	Secondary Treatment	West Secondary Sedimentation Basin Sludge Collectors	1	1978	2004	5	1983	2009	-21	-10		$235,160
126	PR-SEC-7	T35111	02T35111	Secondary Treatment	West Secondary Sedimentation Basin Sludge Collectors	1	1978	2004	5	1983	2009	-21	-10		$235,160
126	PR-SEC-7	T35112	02T35112	Secondary Treatment	West Secondary Sedimentation Basin Sludge Collectors	1	1978	2005	5	1983	2010	-21	-9		$238,160
126	PR-SEC-7	T35113	02T35113	Secondary Treatment	West Secondary Sedimentation Basin Sludge Collectors	1	1978	2000	5	1983	2005	-21	-14		$235,160
127	PR-SEC-8	DU35089	02DU35089	Secondary Treatment	West Secondary Sedimentation Basin Sludge Drive T8&9	1	1978	1978	5	1983	1983	-21	-36		$12,140
127	PR-SEC-8	DU35101	02DU35101	Secondary Treatment	West Secondary Sedimentation Basin Sludge Drive T10&11	1	1978	1978	5	1983	1983	-21	-36		$12,140
127	PR-SEC-8	DU35123	02DU35123	Secondary Treatment	West Secondary Sedimentation Basin Sludge Drive T12&13	1	1978	2005	5	1983	2010	-21	-9		$12,140
208	PR-SOL-1	MX42111	02MX42111	Solids	DAF Polymer Mixer	1	1974	2011	10	1984	2021	-20	2		$142,110
208	PR-SOL-1	MX42112	02MX42112	Solids	DAF Polymer Mixer	1	1974	2011	10	1984	2021	-20	2		$142,110
262	PR-SOL-10	MME61010	02MME61010	Solids	Digester Boiler (3 and 4)	1	1998	1998	35	2033	2033	29	14		$16,030
265	PR-SOL-11	GDR63000	02GDR63000	Solids	Sludge Grinder	1	2003	2003	7	2010	2010	5	-9		$24,620
266	PR-SOL-12	CENT41501	02CENT41501	Solids	Centrifuges - DSLL	1	1999	1999	15	2014	2014	10	-5		$1,644,500
266	PR-SOL-12	CENT41502	02CENT41502	Solids	Centrifuges - DSLL	1	1999	1999	15	2014	2014	10	-5		$1,644,500
267	PR-SOL-13	CENT41503	02CENT41503	Solids	Centrifuges - DSL	1	2002	2002	15	2017	2017	13	-2		$1,078,160
269	PR-SOL-14	CON41511	02CON41511	Solids	Conveyor 1	1	1999	1999	15	2014	2014	10	-5		$169,880
270	PR-SOL-15	CON41512	02CON41512	Solids	Conveyor 2	1	1999	1999	15	2014	2014	10	-5		$169,880
271	PR-SOL-16	CON41513	02CON41513	Solids	Conveyor 3	1	1999	1999	15	2014	2014	10	-5		$169,880
272	PR-SOL-17	CON41514	02CON41514	Solids	Conveyor 4	1	1999	1999	15	2014	2014	10	-5		$169,880
209	PR-SOL-2	P42101	02P42101	Solids	Polymer Mixer DAFS	1	2003	2003	10	2013	2013	9	-6		$61,460
209	PR-SOL-2	P42102	02P42102	Solids	Polymer Mixer DAFS	1	2003	2003	10	2013	2013	9	-6		$61,460
222	PR-SOL-3	MME42110	02MME42110	Solids	DAF Collector #1	1	1971	1971	25	1996	1996	-8	-23		$80,940
222	PR-SOL-3	MME42220	02MME42220	Solids	DAF Collector #2	1	1971	1971	25	1996	1996	-8	-23		$80,940
236	PR-SOL-4	P61501	02P61501	Solids	Digester Pump Mixing System #1	1	2005	2005	20	2025	2025	21	6		$64,840
236	PR-SOL-4	P64110	02P64110	Solids	Digester Pump Mixing System #1 - Heat Exchanger	1	2005	2005	20	2025	2025	21	6		$64,840
236	PR-SOL-4	P61502	02P61502	Solids	Digester Pump Mixing System #2	1	2005	2005	20	2025	2025	21	6		$64,840
236	PR-SOL-4	P64210	02P64210	Solids	Digester Pump Mixing System #2 - Heat Exchanger	1	2005	2005	20	2025	2025	21	6		$64,840
246	PR-SOL-6	MME62020	02MME62020	Solids	Digester Boiler (1 and 2)	1	1989	1989	25	2014	2014	10	-5		$16,030
250	PR-SOL-7	B64310	02B64310	Solids	Digester Gas Mixing System #3	1	1998	1998	20	2018	2018	14	-1		$14,100
250	PR-SOL-7	B64410	02B64410	Solids	Digester Gas Mixing System #4	1	1998	1998	20	2018	2018	14	-1		$14,100
251	PR-SOL-8	P64310	02P64310	Solids	Digester Gas Circulation Units #3	1	1998	1998	20	2018	2018	14	-1		$16,500
251	PR-SOL-8	P64410	02P64410	Solids	Digester Gas Circulation Units #4	1	1998	1998	20	2018	2018	14	-1		$16,500
253	PR-SOL-9			Solids	Digester Heat Loops (3 and 4)	1	1980	1980	10	1990	1990	-14	-29		$46,200
311	PR-SW-1	E00227	02E00227	Storm Water	Storm Water Pump Station Engine for Pump #1	1	1982	1982	25	2007	2007	3	-12		$91,370
NEW	NEW	E00228	02E00228	Storm Water	Flood Control Station Engine Pump #1	1	1982	1982	25	2007	2007	3	-12		
312	P-SW-1	E00229	02E00229	Storm Water	Flood Control Station Sump Pump #3	1	1982	2016	25	2007	2041	3	22		
95	P-SEC-1	P32011	02P32011	Secondary Treatment	Aeration Tank Sump Pump #1	1	1989	1989	15	2004	2004	0	-15		$25,760
95	P-SEC-1	P32012	02P32012	Secondary Treatment	Aeration Tank Sump Pump #2	1	1989	1989	15	2004	2004	0	-15		$25,760
95	P-SEC-1	P32013	02P32013	Secondary Treatment	Aeration Tank Sump Pump #3	1	1989	2002	15	2004	2017	0	-2		$25,760
95	P-SEC-1	P32014	02P32014	Secondary Treatment	Aeration Tank Sump Pump #4	1	1989	2003	15	2004	2018	0	-1		$25,760
95	P-SEC-1	P32015	02P32015	Secondary Treatment	Aeration Tank Sump Pump #5	1	1989	2008	15	2004	2023	0	4		$25,760
95	P-SEC-1	P32016	02P32016	Secondary Treatment	Aeration Tank Sump Pump #6	1	1989	2011	15	2004	2026	0	7		$25,760
95	P-SEC-1	P32117	02P32117	Secondary Treatment	Aeration Tank Sump Pump #7	1	1989	2016	15	2004	2031	0	12		$25,760
134	P-SEC-2	#1 not in system		Secondary Treatment	East RAS pump #1	1	1971	1971	20	1991	1991	-13	-28		$160,520
134	P-SEC-2	P30112	02P30112	Secondary Treatment	East RAS pump #2	1	1971	2002	20	1991	2022	-13	3		$160,520
134	P-SEC-2	P30113	02P30113	Secondary Treatment	East RAS pump #3	1	1971	2002	20	1991	2022	-13	3		$160,520
134	P-SEC-2	P30114	02P30114	Secondary Treatment	East RAS pump #4	1	1971	2011	20	1991	2031	-13	12		$160,520
143	P-SEC-3	P30115	02P30115	Secondary Treatment	East WAS Pump #1	1	1999	1999	10	2009	2009	5	-10		$82,100
143	P-SEC-3	P30116	02P30116	Secondary Treatment	East WAS Pump #2	1	1999	1999	10	2009	2009	5	-10		$82,100
147	P-SEC-4	P30218	02P30218	Secondary Treatment	West WAS Pump #3	1	1999	1999	10	2009	2009	5	-10		$82,100
147	P-SEC-4	P30219	02P30219	Secondary Treatment	West WAS Pump #4	1	1999	2014	10	2009	2024	5	5		$82,100
139	P-SEC-5	P30215	02P30215	Secondary Treatment	West RAS pump #5	1	1978	1978	20	1998	1998	-6	-21		$120,390
139	P-SEC-5	P30216	02P30216	Secondary Treatment	West RAS pump #6	1	1978	1978	20	1998	1998	-6	-21		$120,390
139	P-SEC-5	P30217	02P30217	Secondary Treatment	West RAS pump #7	1	1978	1978	20	1998	1998	-6	-21		$120,390
206	P-SOL-1	P42121	02P42121	Solids	DAF Bulk Polymer Transfer Pump #1	1	1999	2017	8	2007	2025	3	6		$12,720
206	P-SOL-1	P42122	02P42122	Solids	DAF Bulk Polymer Transfer Pump #2	1	1999	2017	8	2007	2025	3	6		$12,720
210	P-SOL-2	P42111	02P42111	Solids	DAF Polymer Feeder #1	1	1990	1990	8	1998	1998	-6	-21		$110,280
210	P-SOL-2	P42112	02P42112	Solids	DAF Polymer Feeder #2	1	1990	1990	8	1998	1998	-6	-21		$110,280
210	P-SOL-2	P42113	02P42113	Solids	DAF Polymer Feeder #3	1	1990	1990	8	1998	1998	-6	-21		$110,280
216	P-SOL-3			Solids	OW Polymer Recirculation Pumps	1	2003	2003	8	2011	2011	7	-8		$12,720
217	P-SOL-4	MX41101	02MX41101	Solids	OW Polymer Feeders - Dynablend	1	2003	2003	8	2011	2011	7	-8		$110,280
217	P-SOL-4	MX41102	02MX41102	Solids	OW Polymer Feeders - Dynablend	1	2003	2003	8	2011	2011	7	-8		$110,280
217	P-SOL-4	MX41103	02MX41103	Solids	OW Polymer Feeders - Dynablend	1	2003	2003	8	2011	2011	7	-8		$110,280
224	P-SOL-5			Solids	DAF Recirculation Pumps	1	2003	2003	15	2018	2018	14	-1		$44,760
224	P-SOL-5	P42110	02P42110	Solids	DAF Recirculation Pumps	1	2003	2004	15	2018	2019	14	0		$44,760
224	P-SOL-5	P42120	02P42120	Solids	DAF Recirculation Pumps	1	2003	2004	15	2018	2019	14	0		$44,760
227	P-SOL-6	P42131	02P42131	Solids	TWAS Pump #1	1	2005	2005	8	2013	2013	9	-6		$134,280
227	P-SOL-6	P42132	02P42132	Solids	TWAS Pump #2	1	2005	2005	8	2013	2013	9	-6		$134,280
227	P-SOL-6	P42234	02P42234	Solids	TWAS Pump #3	1	2005	2005	8	2013	2013	9	-6		$134,280
227	P-SOL-6	P42235	02P42235	Solids	TWAS Pump #4	1	2005	2005	8	2013	2013	9	-6		$134,280
237	P-SOL-7	P61410	02P61410	Solids	Digester Circulation Pumps #1	1	2000	2002	15	2015	2017	11	-2		$68,340
237	P-SOL-7	P61420	02P61420	Solids	Digester Circulation Pumps #2	1	2000	2002	15	2015	2017	11	-2		$68,340
252	P-SOL-8	P62430	02P62430	Solids	Digester Circulation Pumps #3	1	1980	1980	15	1995	1995	-9	-24		$68,340
252	P-SOL-8	P62440	02P62440	Solids	Digester Circulation Pumps #4	1	1980	1980	15	1995	1995	-9	-24		$68,340
263	P-SOL-9	P63501	02P63501	Solids	Digester Sludge Pumps - Centrifuge Feed Pump #1	1	2003	2003	6	2009	2009	5	-10		$136,800
263	P-SOL-9	P63502	02P63502	Solids	Digester Sludge Pumps - Centrifuge Feed Pump #2	1	2003	2003	6	2009	2009	5	-10		$136,800
263	P-SOL-9	P63503	02P63503	Solids	Digester Sludge Pumps - Centrifuge Feed Pump #3	1	2003	2003	6	2009	2009	5	-10		$136,800
312	P-SW-1			Storm Water	Storm Water Pump Station Pump - Sump Pump	1	1993	2014	8	2001	2022	-3	3		$5,830
312	P-SW-1	P00230	02P00230	Storm Water	Storm Water Pump Station Pump	1	1993	1993	15	2008	2008	4	-11		$5,830
NEW	New	P21101	02P21101	Godwin Pump #1	Emegency Standby Pump #1	1	NA	2009	15	#VALUE!	2024	#VALUE!	5		$5,830
NEW	New	P21102	02P21102	Godwin Pump #2	Emegency Standby Pump #1	1	NA	2009	15	#VALUE!	2024	#VALUE!	5		$5,830
NEW	New	CV24010V1	02CV24010V1	Primary Hopper Valves	Primrry Tank #1 V1	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24010V2	02CV24010V2	Primary Hopper Valves	Primrry Tank #1 V2	1	2000	2014	5	2005	2019	1	0		
NEW	New	CV24020V3	02CV24020V3	Primary Hopper Valves	Primrry Tank #2 V1	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24020V4	02CV24020V4	Primary Hopper Valves	Primrry Tank #2 V2	1	2000	2014	5	2005	2019	1	0		
NEW	New	CV24030V5	02CV24030V5	Primary Hopper Valves	Primrry Tank #3 V1	1	2000	2000	5	2005	2005	1	-14		
NEW	New	CV24030V6	02CV24030V6	Primary Hopper Valves	Primrry Tank #3 V2	1	2000	2013	5	2005	2018	1	-1		
NEW	New	CV24040V7		Primary Hopper Valves	Primrry Tank #4 V1	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24040V8		Primary Hopper Valves	Primrry Tank #4 V2	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24050V9	02CV24050V9	Primary Hopper Valves	Primrry Tank #5 V1	1	2000	2016	5	2005	2021	1	2		
NEW	New	CV24050V10	02CV24050V10	Primary Hopper Valves	Primrry Tank #5 V2	1	2000	2014	5	2005	2019	1	0		
NEW	New	CV24060V11	02CV24060V11	Primary Hopper Valves	Primrry Tank #6 V1	1	2000	2013	5	2005	2018	1	-1		
NEW	New	CV24060V12	02CV24060V12	Primary Hopper Valves	Primrry Tank #6 V2	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24170V13	02CV24170V13	Primary Hopper Valves	Primrry Tank #7 V1	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24170V14	02CV24170V14	Primary Hopper Valves	Primrry Tank #7 V2	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24180V15	02CV24180V15	Primary Hopper Valves	Primrry Tank #8 V1	1	2000	2011	5	2005	2016	1	-3		
NEW	New	CV24180V16	02CV24180V16	Primary Hopper Valves	Primrry Tank #8 V2	1	2000	2017	5	2005	2022	1	3		
NEW	New	CV24190V17	02CV24190V17	Primary Hopper Valves	Primrry Tank #8 V1	1	2000	2016	5	2005	2021	1	2		
NEW	New	CV24190V18	02CV24190V18	Primary Hopper Valves	Primrry Tank #8 V2	1	2000	2015	5	2005	2020	1	1		
NEW	New	F21134	02F21134	Bldg 25	Supply Fan Plant 2 - Bldg #25 Roof Fan	1	1999	1999	15	2014	2014	10	-5		
NEW	New	F21210	02F21210	Bldg 20	Supply Fan Plant 1 - Bldg #20 Roof Fan	1	1998	1998	15	2013	2013	9	-6		
NEW	New	F35033	02F35033	Secondary	Inline Duct Fan	1	1998	1998	15	2013	2013	9	-6		
NEW	New	FI32023	02FI32023	Secondary	Aeration Tank Downflow Meter #3/Tank #2	1	1993	2016	5	1998	2021	-6	2		
NEW	New	HEX40110	02HEX40110	Cogen	Heat Exchanger (DGUE)	1	1984	2016	15	1999	2031	-5	12		
NEW	New	BNR00600	02BNR00600	Cogen	Digester Waste Gas Burner	1	1984	1984	15	1999	1999	-5	-20		
NEW	New	F31122	02F31122	Primary	Plant #1 Blower Room Exhaust Fan #2	1	2002	2002	15	2017	2017	13	-2		
NEW	New	F31123	02F31123	Primary	Plant #1 Blower Room Fresh Air Fan	1	2002	2002	15	2017	2017	13	-2		
NEW	New	FI74000	02FI74000	Effluent Management	Outfall Flow Meter	1	1993	1993	15	2008	2008	4	-11		
170	E-CL-1			Chlorine System	Chlorine Electrical	1	1971	1971	25	1996	1996	-8	-23		28880
182	E-EFF-1			Effluent Management	Effluent Pump Station Electrical	1	1993	1993	25	2018	2018	14	-1		34650
183	E-EFF-2			Effluent Management	MCC-M	1	1991	1991	20	2011	2011	7	-8		34564
184	E-EFF-3			Effluent Management	SC-1	1	1991	1991	20	2011	2011	7	-8		84320
294	E-EN-1			Energy	Energy Area Electrical	1	1987	1987	25	2012	2012	8	-7		46200

156	E-FC-1			Ferric Chloride System	Ferric Chloride Electrical	1	1988	1988	25	2013	2013	9	-6			10400
321	E-I-1			Instrumentation	PLC WRAS	1	1978	1978	4	1982	1982	-22	-37			34650
330	E-I-10			Instrumentation	PLC MasterCentrifuge	1	1978	1978	4	1982	1982	-22	-37			46200
322	E-I-2			Instrumentation	PLC WRSP	1	1978	1978	4	1982	1982	-22	-37			34650
323	E-I-3			Instrumentation	PLC WBB	1	1978	1978	4	1982	1982	-22	-37			65940
324	E-I-4			Instrumentation	PLCWPSP	1	1978	1978	4	1982	1982	-22	-37			34650
325	E-I-5			Instrumentation	PLCEPSP	1	1978	1978	4	1982	1982	-22	-37			34650
326	E-I-6			Instrumentation	PLCERSP	1	1978	1978	4	1982	1982	-22	-37			34650
327	E-I-7			Instrumentation	PLCEHW	1	1978	1978	4	1982	1982	-22	-37			34650
328	E-I-8			Instrumentation	PLC Digester 1/2	1	1978	1978	4	1982	1982	-22	-37			90240
329	E-I-9			Instrumentation	PLC Digester 3/4	1	1978	1978	4	1982	1982	-22	-37			34650
305	E-MS-1			Maintenace Shop	Electrical	1	1988	1988	25	2013	2013	9	-6			11550
283	E-OC-1			Odor Control	Odor control Scrubber No. 1 Electrical	1	1998	1998	20	2018	2018	14	-1			11550
286	E-OC-2			Odor Control	Odor control Scrubber No. 2 Electrical	1	2002	2002	20	2022	2022	18	3			6930
287	E-OC-3			Odor Control	MCC1&2	1	1985	1985	20	2005	2005	1	-14			312900
65	E-PRI-1			Primary Treatment	East Primary Sedimentation Basin Electrical	1	1988	1988	25	2013	2013	9	-6			75080
67	E-PRI-2			Primary Treatment	MCC-G	1	1971	1971	20	1991	1991	-13	-28			49120
82	E-PRI-3			Primary Treatment	West Primary Sedimentation Basin Electrical	1	1990	1990	25	2015	2015	11	-4			56600
6	E-PT-1			Primary Treatment	East Headworks Building Electrical	1	1999	1999	15	2014	2014	10	-5			51980
33	E-PT-10			Primary Treatment	West Headworks Building Electrical	1	1997	1997	15	2012	2012	8	-7			35810
34	E-PT-11	MCCJ1		Primary Treatment	MCC-J1	1	1996	1996	20	2016	2016	12	-3			56400
35	E-PT-12			Primary Treatment	Main Panel "MA"-4 MGD	1	1979	1979	20	1999	1999	-5	-20			374220
45	E-PT-13			Primary Treatment	West Grit Pump Electrical	1	1988	1988	25	2013	2013	9	-6			32340
46	E-PT-14			Primary Treatment	MCC-K	1	1997	1997	20	2017	2017	13	-2			65490
51	E-PT-15			Primary Treatment	West RSPS/Blower Building Electrical	1	1988	1988	25	2013	2013	9	-6			75080
52	E-PT-16			Primary Treatment	MCC-J1	1	1979	1979	30	2009	2009	5	-10			238310
53	E-PT-17			Primary Treatment	MCC-EMCC-J	1	1979	1979	30	2009	2009	5	-10			227400
56	E-PT-18			Primary Treatment	West Raw Sewage VFD's	1	1990	1990	5	1995	1995	-9	-24			162430
7	E-PT-2			Primary Treatment	Main Panel "MA"-9 MGD	1	2005	2005	20	2025	2025	21	6			437240
8	E-PT-3			Primary Treatment	MCC-EAI	1	1997	1997	20	2017	2017	13	-2			70950
19	E-PT-4			Primary Treatment	East Grit Electrical	1	2002	2002	25	2027	2027	23	8			42740
23	E-PT-5			Primary Treatment	East RSPS/Blower Building Air Electrical	1	1988	1988	25	2013	2013	9	-6			75080
24	E-PT-6			Primary Treatment	MCC-A	1	2007	2007	20	2027	2027	23	8			204660
25	E-PT-7			Primary Treatment	MCC-A-1	1	1997	1997	20	2017	2017	13	-2			70950
26	E-PT-8			Primary Treatment	EMCC-A	1	2007	2007	20	2027	2027	23	8			83910
29	E-PT-9			Primary Treatment	East Raw Sewage Pumps VFD	1	2007	2007	5	2012	2012	8	-7			194910
299	E-PW-2			Plant Water	Plant Water Pump Electrical	1	2004	2004	25	2029	2029	25	10			23100
300	E-PW-3			Plant Water	MCC-M	1	1988	1988	20	2008	2008	4	-11			156450
96	E-SEC-1			Secondary Treatment	East Aeration Basin Influent Electrical	1	1989	1989	25	2014	2014	10	-5			16170
106	E-SEC-2			Secondary Treatment	West Aeration Basin Influent Electrical	1	1989	1989	25	2014	2014	10	-5			13860
115	E-SEC-3			Secondary Treatment	MCC-DGU-1	1	1988	1988	20	2008	2008	4	-11			101880
124	E-SEC-4			Secondary Treatment	East Secondary Sedimentation Basin Electrical	1	1978	1978	25	2003	2003	-1	-16			54290
132	E-SEC-5			Secondary Treatment	West Secondary Sedimentation Basin Electrical	1	1978	1978	25	2003	2003	-1	-16			45050
136	E-SEC-6			Secondary Treatment	East RAS Pump Station Electrical	1	1971	1971	25	1996	1996	-8	-23			23100
141	E-SEC-7			Secondary Treatment	West RAS Pump Station Electrical	1	1979	1979	25	2004	2004	0	-15			13860
145	E-SEC-8			Secondary Treatment	East WAS Pumping Electrical	1	1998	1998	25	2023	2023	19	4			8090
150	E-SEC-9			Secondary Treatment	West WAS Pumping Electrical	1	1998	1998	25	2023	2023	19	4			5930
203	E-SOL-1			Solids	Energy Building Electrical	1	1987	1987	25	2012	2012	8	-7			259880
255	E-SOL-10			Solids	Digester Electrical (3 and 4)	1	2002	2002	25	2027	2027	23	8			46200
256	E-SOL-11			Solids	MCC-B	1	1971	1971	20	1991	1991	-13	-28			85500
259	E-SOL-12			Solids	Digester Control Building Electrical (3 and 4)	1	1990	1990	25	2015	2015	11	-4			17330
275	E-SOL-13			Solids	Dewatering System Electrical	1	1999	1999	25	2024	2024	20	5			11550
276	E-SOL-14			Solids	MCC-CF	1	2003	2003	20	2023	2023	19	4			87780
212	E-SOL-2			Solids	DAF Polymer Electrical	1	1990	1990	25	2015	2015	11	-4			12710
219	E-SOL-3			Solids	OW Polymer Electrical	1	2003	2003	25	2028	2028	24	9			12710
230	E-SOL-4			Solids	DAF Electrical	1	1995	1995	25	2020	2020	16	1			31190
231	E-SOL-5			Solids	MCC-D	1	2000	2000	20	2020	2020	16	1			110970
232	E-SOL-6			Solids	MCC-L	1	1979	1979	20	1999	1999	-5	-20			107520
240	E-SOL-7			Solids	Digester Electrical (1 and 2)	1	2005	2005	25	2030	2030	26	11			46200
241	E-SOL-8			Solids	MCC-F	1	2002	2002	20	2022	2022	18	3			74590
244	E-SOL-9			Solids	Digester Control Building (1 and 2) Electrical	1	1971	1971	25	1996	1996	-8	-23			24260
NEW	New	MME41010	02MME41010	Solids	Truck Scale #1	1	1999	1999	15	2014	2014	10	-5			
NEW	New	MME41020-M	02MME41020-M	Solids	Truck Scale #2	1	1999	1999	15	2014	2014	10	-5			
NEW	New	MME42111	02MME42111	Solids	DAF #1 Gear Box	1	2003	2003	15	2018	2018	14	-1			
NEW	New	MME42221	02MME42221	Solids	DAF #2 Gear Box	1	2003	2003	15	2018	2018	14	-1			
NEW	New	P00011	02P00011	Support	Gorman Rupp 4" Trash Pump	1	2003	2003	10	2013	2013	9	-6			
NEW	New	CP40101	02CP40101	Co-Gen	Instr. Air Compressor For Steuler	1	NA		10	#VALUE!		2026	#VALUE!			7
OS	OS	B31180	02B31180	Secondary Treatment	Aeration Blower #6	0	NA	NA	15	#VALUE!	#VALUE!	#VALUE!	#VALUE!			
OS	OS	B40110	02B40110	Co-Gen	Hy-Bon Compressor	0	NA	NA	10	#VALUE!	#VALUE!	#VALUE!	#VALUE!			
NEW	New	EG40110	02EG40110	Co-Gen	GE Jenbacher Engine	1	1984	2016	15	1999	2031	-5	12			
NEW	New	F31010	02F31010	Primary	Vent Fan #1 (Plant #1 Blower Room)	1	1993	1993	15	2008	2008	-4	-11			
NEW	New	F31020	02F31020	Primary	Vent Fan #3 (Plant #1 Blower Room)	1	1993	1993	30	2023	2023	19	4			
NEW	New	F31030	02F31030	Primary	Vent Fan #4 (Plant #1 Blower Room)	1	1993	1993	30	2023	2023	19	4			
NEW	New	F31110	02F31110	Primary	Vent Fan #1 (Plant #2 Blower Room)	1	1993	1993	30	2023	2023	19	4			
NEW	New	F31120	02F31120	Primary	Vent Fan #2 (Plant #2 Blower Room)	1	1993	1993	30	2023	2023	19	4			
NEW	New	F31121	02F31121	Primary	Plant #1 Blower Room Exhaust Fan #1	1	1993	1993	30	2023	2023	19	4			
NEW	New	F40101	02F40101	Co-Gen	Cogen Exhaust Fan	1	NA	2016	30	#VALUE!		2046	#VALUE!			27
NEW	New	F40131	02F40131	Co-Gen	Cogen Exhaust Fan #1 (V-Belt #4L370)	1	NA	2016	30	#VALUE!		2046	#VALUE!			27
NEW	New	F40132	02F40132	Co-Gen	Cogen Exhaust Fan #2 (V-Belt #4L370)	1	NA	2016	30	#VALUE!		2046	#VALUE!			27
NEW	New	F40137	02F40137	Co-Gen	Inline Duct Fan (Cogen)	1	NA	2016	30	#VALUE!		2046	#VALUE!			27
NEW	New	F61011	02F61011	Solids	Boiler Room Vent Fan #1	1	1993	1993	30	2023	2023	19	4			
NEW	New	CV00140	02CV00140	Influent	Plant #2 Influent Gate	1				0	0	-2004	-2019			
NEW	New	CV00190	02CV00190	Influent	Plant #1 Influent Gate	1				0	0	-2004	-2019			
NEW	New	DVG41501	02DVG41501	Solids	Centrifuge #1 Diverter Gate	1				0	0	-2004	-2019			
NEW	New	DVG41502	02DVG41502	Solids	Centrifuge #2 Diverter Gate	1				0	0	-2004	-2019			
NEW	New	DVG41503	02DVG41503	Solids	Centrifuge #3 Diverter Gate	1				0	0	-2004	-2019			
NEW	New	SLG25001	02SLG25001	Influent	4 Side Influent Slide Gate #1	1				0	0	-2004	-2019			
NEW	New	SLG25002	02SLG25002	Influent	4 Side Influent Slide Gate #2	1				0	0	-2004	-2019			
NEW	New	SLG25003	02SLG25003	Influent	4 Side Influent Slide Gate #3	1				0	0	-2004	-2019			
NEW	New	SLG25004	02SLG25004	Influent	4 Side Influent Slide Gate #4	1				0	0	-2004	-2019			
NEW	New	E10000	02E10000	Administration	JBL Administration Building Generator	1				0	0	-2004	-2019			
NEW	New	GDR30000	02GDR30000	Primary	Muffin Monster (9-Side Basement)					0	0	-2004	-2019			
NEW	New	GDR40000	02GDR40000	Primary	Muffin Monster (4-Side Basement)					0	0	-2004	-2019			
NEW	New	H31100	02H31100	Primary	Blower Room Hoist - Plant #1					0	0	-2004	-2019			
NEW	New	H31101	02H31101	Primary	Blower Room Hoist - Plant #2					0	0	-2004	-2019			
NEW	New	H41001	02H41001	Solids	Centrifuge Room - Hoist #1					0	0	-2004	-2019			
NEW	New	H41002	02H41002	Solids	Centrifuge Room - Hoist #2					0	0	-2004	-2019			
NEW	New	H72200	02H72200	Support	CL2 Storage Room Hoist					0	0	-2004	-2019			
NEW	New	AHU11028	02AHU11028	Support	Air Conditioner-4T											
NEW	New	AHU11029	02AHU11029	Support	Air Conditioner-2T											
NEW	New	AHU31061	02AHU31061	Support	Air Conditioner - 3T											
NEW	New	AHU40411	02AHU40411	Support	Maintenance Office Air Conditioner											
NEW	New	AHU40412	02AHU40412	Support	Electrical Office Air Conditioner											
NEW	New	AHU73028	02AHU73028	Support	Air Conditioner - 3T											
NEW	New	CTI42000	02CTI42000	Solids	Poly Tank Level Meter											
NEW	New	FI24094	02FI24094	Primary	Primary Sludge Total Meter											
NEW	New	FI30132	02FI30132	Primary	Primary Sludge Meter (Plant #1)											
NEW	New	FI30190	02FI30190	Secondary Treatment	RAS Totalizer Meter (Plant #1)											
NEW	New	FI30233	02FI30233	Primary	Primary Sludge Meter (Plant #2)											
NEW	New	FI30240	02FI30240	Secondary Treatment	RAS Totalizer Meter (Plant #2)											
NEW	New	FI3090	02FI3090	Secondary Treatment	Plant #1 RAS Flow Meter											
NEW	New	FI31090	02FI31090	Secondary Treatment	WAS Meter (Plant #1)											
NEW	New	FI31091	02FI31091	Support	Plant Air Meter (Plant #1)											
NEW	New	FI31140	02FI31140	Secondary Treatment	WAS Meter (Plant #2)											
NEW	New	FI31140-2	02FI31140-2	Secondary Treatment	WAS Meter (Plant #2)											
NEW	New	FI31141	02FI31141	Support	Plant Air Meter #1 (Plant #2)											
NEW	New	FI31142	02FI31142	Support	Plant Air Meter #2 (Plant #2)											
NEW	New	FI32011	02FI32011	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #1											
NEW	New	FI32012	02FI32012	Secondary Treatment	Aeration Tank Downflow Meter #2/Tank #1											
NEW	New	FI32013	02FI32013	Secondary Treatment	Aeration Tank Downflow Meter #3/Tank #1											
NEW	New	FI32021	02FI32021	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #2											
NEW	New	FI32022	02FI32022	Secondary Treatment	Aeration Tank Downflow Meter #2/Tank #2											
NEW	New	FI32031	02FI32031	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #3											
NEW	New	FI32032	02FI32032	Secondary Treatment	Aeration Tank Downflow Meter #2/Tank #3											
NEW	New	FI32033	02FI32033	Secondary Treatment	Aeration Tank Downflow Meter #3/Tank #3											
NEW	New	FI32041	02FI32041	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #4											
NEW	New	FI32042	02FI32042	Secondary Treatment	Aeration Tank Downflow Meter #2/Tank #4											
NEW	New	FI32043	02FI32043	Secondary Treatment	Aeration Tank Downflow Meter #3/Tank #4											
NEW	New	FI32151	02FI32151	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #5											
NEW	New	FI32152	02FI32152	Secondary Treatment	Aeration Tank Downflow Meter #2/Tank #5											
NEW	New	FI32153	02FI32153	Secondary Treatment	Aeration Tank Downflow Meter #3/Tank #5											
NEW	New	FI32161	02FI32161	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #6											
NEW	New	FI32162	02FI32162	Secondary Treatment	Aeration Tank Downflow Meter #2/Tank #6											
NEW	New	FI32163	02FI32163	Secondary Treatment	Aeration Tank Downflow Meter #3/Tank #6											
NEW	New	FI32171	02FI32171	Secondary Treatment	Aeration Tank Downflow Meter #1/Tank #7											
NEW	New	FI32172	02FI32172	Secondary Treatment	Aeration Tank Downflow Meter#2/Tank #7											
NEW	New	FI32173	02FI32173	Secondary Treatment	Aeration Tank Downflow Meter #3/Tank #7											
NEW	New	FI40100	02FI40100	Cogen	Cogen Air Meter											
NEW	New	FI40200	02FI40200	Cogen	Gas Meter											

NEW	New	FI41501	02FI41501	Solids	Centrifuge #1 Flow Meter											
NEW	New	FI41502	02FI41502	Solids	Centrifuge #2 Flow Meter											
NEW	New	FI41503	02FI41503	Solids	Centrifuge #3 Flow Meter											
NEW	New	FI42101	02FI42101	Solids	DAFT #1 Flow Meter											
NEW	New	FI42202	02FI42202	Solids	DAFT #2 Flow Meter											
NEW	New	FI61012	02FI61012	Solids	Digesters #1 & #2 Gas Meter	1	1993	2018	10	2003	2028	-1	9			
NEW	New	FI61013	02FI61013	Solids	Digesters #3 & #4 Gas Meter	1	1993	2018	10	2003	2028	-1	9			
NEW	New	FI73400	02FI73400	Effluent Management	Plant #2 Effluent Meter											
NEW	New	FI73400-2	02FI73400-2	Effluent Management	Plant #2 Effluent Meter											
NEW	New	FI73900	02FI73900	Effluent Management	Plant #1 Effluent Flow Meter											
NEW	New	FI73900-2	02FI73900-2	Effluent Management	Plant #1 Effluent Meter											
NEW	New	FI74001	02FI74001	Support	Data Flow RTU											
NEW	New	FI74002	02FI74002	Support	Data Flow RTU											
NEW	New	IND31000	02IND31000	Influent	Plant #1 Chart Recorder											
NEW	New	IND31100	02IND31100	Influent	Plant #2 Chart Recorder											
NEW	New	IND32013	02IND32013	Secondary Treatment	Aeration Tanks #1 & #3 Chart Recorder											
NEW	New	IND32046	02IND32046	Secondary Treatment	Aeration Tanks #4 & #6 Chart Recorders								-2019			
NEW	New	IND32170	02IND32170	Secondary Treatment	Aeration Tank #7 Chart Recorder								-2019			
NEW	New	IND73000	02IND73000	Effluent Management	Outfall Flow Meter Chart Recorder								-2019			
NEW	New	Unison40000		Cogen	Unison Skid	1	NA	2016	20	#VALUE!	2036	#VALUE!	17			
NEW	New	P00510	02P00510	Support	Potable Water Booster #1	1										
NEW	New	P00520	02P00520	Support	Potable Water Booster #2	1										
NEW	New	P00610	02P00610	Cogen	Sump Pump at Waste Gas Burner	1										
NEW	New	P23035	02P23035	Primary	Plant 1 Grit Station Sump Pump											
NEW	New	P26112	02P26112	Secondary	Scum Pump											
NEW	New	P30111	02P30111	Secondary	RAS #1											
NEW	New	P30130	02P30130	Support	Ground Water Pump											
NEW	New	P30190	02P30190	Primary	Plant #1 Pump Room Sump Pump											
NEW	New	P30240	02P30240	Primary	Plant #2 Pump Room Sump Pump											
NEW	New	P31090	02P31090	Secondary	Sample Pump RAS Wetwell (Plant #1)											
NEW	New	P31140	02P31140	Secondary	Sample Pump RAS Wetwell (Plant #2)											
NEW	New	P32136	02P32136	Primary	Plant #2 Grit Station Sump Pump											
NEW	New	P40110	02P40110	Cogen	Aux Waste Heat Pump											
NEW	New	P40201	02P40201	Cogen	Main Heat Loop Pump #1											
NEW	New	P40202	02P40202	Cogen	Main Heat Loop Pump #2											
NEW	New	P40220	02P40220	Cogen	Jacket Hot Water Pump											
NEW	New	P40420	02P40420	Cogen	Hot Water Pump											
NEW	New	P41201	02P41201	Solids	Poly Recirc Pump											
NEW	New	P42230	02P42230	Solids	DAFT Spare Recirc Pump											
NEW	New	SCR40000	02SCR40000	Cogen	SCR	1	NA	2016	20	#VALUE!	2036	#VALUE!	17			
NEW	New	AE21120	02AE21120	Primary	Methane Sensor											
NEW	New	AE31120	02AE31120	Primary	Methane Sensor											
NEW	New	ATI32011	02ATI32011	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32012	02ATI32012	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32021	02ATI32021	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32022	02ATI32022	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32031	02ATI32031	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32032	02ATI32032	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI-32041	02ATI-32041	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI-32042	02ATI-32042	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32051	02ATI32051	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32052	02ATI32052	Secondary Treatment	D.O. Analyzer											
NEW	New	ATI32061	02ATI32061	Secondary Treatment	D.O. Analyzer											
NEW	New	T21001	02T21001	Odor Control	Scrubber #1 Bleach Tank											
NEW	New	T21002	02T21002	Odor Control	Scrubber #2 Caustic Tank											
NEW	New	T40000	02T40000	Cogen	Waste Oil Tank											
NEW	New	T40100	02T40100	Cogen	Engine Waste Oil Tank											
NEW	New	T40101	02T40101	Support	Diesel Fuel Storage Tank											
NEW	New	T41000	02T41000	Solids	Centrifuge Polymer Tank											
NEW	New	T42001	02T42001	Solids	Polymer Storage Tank #1											
NEW	New	T42002	02T42002	Solids	Polymer Storage Tank #2											
NEW	New	T42003	02T42003	Odor Control	Scrubber #2 Bleach Tank											
NEW	New	T42004	02T42004	Odor Control	Scrubber #2 Caustic Tank											
NEW	New	T42111	02T42111	Solids	Polymer Mixing Tank #1											
NEW	New	T42112	02T42112	Solids	Polymer Mixing Tank #2											
NEW	New	T73000	02T73000	Support	Bleach Tank											
NEW	New	CV24040V8	02CV24040V8	Primary	Primary Hopper Valves											
NEW	New	CV40110	02CV40110	Primary	3-Way Valve											
NEW	New	CV4040V7	02CV4040V7	Primary	Primary Hopper Valves											
NEW	New	CV61030	02CV61030	Primary	3-Way Valve											
NEW	New	CV62030	02CV62030	Primary	3-Way Valve											
NEW	New	CV73000	02CV73000	Effluent Management	EPS Control Valve											
NEW	New	CV73400	02CV73400	Effluent Management	Plant #2 Outfall Valve											
NEW	New	CV73900	02CV73900	Effluent Management	Plant #1 Outfall Valve											
NEW	New	CV74100	02CV74100	Effluent Management	Surge Tower											
NEW	New	V23101	02V23101	Primary	Plant #2 Grit Tank/Bypass											
NEW	New	V23102	02V23102	Primary	Plant #2 Grit Tank/Bypass											
NEW	New	V42011	02V42011	Solids	Centrifuge Centrate Valve #1											
NEW	New	V42012	02V42012	Solids	Centrifuge Centrate Valve #2											
NEW			02VEH14		2011 Chev. Impala (Lic #1363462)											
NEW			02VEH22		2001 Ford F-250 (Lic #1101587)											
NEW			02VEH72		2012 Ford Escape (Lic #1406404)											
NEW			02VEH73		2013 Ford F-150 (Lic #1396589)											
NEW			02VEH38		1999 Ford Ranger (Lic #1017482)											
NEW			02MME00214		Flood Control Backflow Preventer											
NEW			02MEE10001		Control Room Emergemcy Light											
NEW			02MME14000		Fire Sprinkler System											
NEW			02MME14015		Admin Bldg Backflow Preventer											
NEW			02MME14016		Admin Bldg Backflow Preventer											
NEW			02MME14017		Admin Bldg Backflow Preventer											
NEW			02MME14018		Admin Bldg Backflow Preventer											
NEW			02MCC-C		MCC-C											
NEW			02MEE11001		Laboratory Emergency light #1											
NEW			02MEE11002		Laboratory Emergency Light #2											
NEW			02MLE11010		Laboratory Eyewash #1											
NEW			02MLE11020		Laboratory Eyewash #2											
NEW			02MLE11030		Laboratory Eyewash #3											
NEW			02MCC-EA1		MCC-EA1											
NEW			02MEE20002		Plant #1 Headworks Emergency Light											
NEW			02MME60002		Ferric Delivery Eyewash #2											
NEW			02MCC-J1		MCC-J1											
NEW			02MEE25001		Plant #2 Headworks Emergency Light											
NEW			02-00312		Inside Headworks Bldg 25											
NEW			02MCC-A		MCC-A											
NEW			02MCC-A-1		MCC-A-1											
NEW			02MCC-EMCCA		EMCC-A											
NEW			02MEE30001		Plant #1 Blower Bldg Emergency Light											
NEW			02MCC-EMCCJ		MCC EMCC-J											
NEW			02MCC-J		MCC-J											
NEW			02MCC-K		MCC-K											
NEW			02MEE35001		Plant #2 Blower Bldg Emergency Light											
NEW			02MCC-1		MCC-1											
NEW			02MCC-2		MCC-2											
NEW			02MCC-CF		MCC-CF											
NEW			02MCC-DGU1		Mcc-DGU-1											
NEW			02MEE41001		Maintenanoe Shop Emergency Light											
NEW			02MEE41002		Truck Bay Emergency Light #1											
NEW			02MEE41003		Truck Bay Emergency Light #2											
NEW			02MEE41004		Engine Room Emergency Light											
NEW			02MEE42001		Fan Room Emergency Light											
NEW			02MEE42002		Centrifuge Room Emergency Light #1											
NEW			02MEE42003		Centrifuge Room Emergency Light #2											
NEW			02MEE50001		Maint Warehouse Emegency Light											
NEW			02MCC-F		MCC-F											
NEW			02MCC-B		MCC-B											
NEW			02MME72010		Cl2 Bldg Eyewash #1											
NEW			02MME72020		Cl2 Bldg Eyewash #2											
NEW			02MME72030		Cle Bldg Eyewash #3											
NEW			02MCC-M		MCC-M											
NEW			02MCC-M1		MCC-M1											
NEW			02MEE90001		Eff.Pump Station Emergency Light #1											
NEW			02MEE90002		Eff.Pump Station Emergency Light #2											
NEW			02MME73001		Bleach Area Eyewash #1											
NEW			02MME73002		Bleach Area Eyewash #2											
NEW			02MCC-G		MCC-G											
NEW			02D64110		Digester #1											
NEW			02D64210		Digester #2											
NEW			02D64310		Digester #3											
NEW			02D64410		Digester #4											

NEW			02-105		Cogen - JBL									
NEW			02VEH1		2006 Peterbilt Tractor (Lic #1216212)									
NEW			02VEH109		2018 Ford F-250									
NEW			02VEH15		2006 Travis Trailer (Lic #1216076)									
NEW			02VEH23		2002 Ford F-250 (Lic #1137532)									
NEW			02VEH58		2003 Ford F150 P/U (Lic #1174484)									
NEW			02MCC-PNLMA		Main Panel "MA"									
NEW			02MISC		Miscellaneous									
NEW			02MME00100		Public Address System									
NEW			02VEH18		2004 Ford Ranger (Lic #E1190323)									
NEW			02VEH19		2005 Ford Ranger (Lic #1212983)									
NEW			02VEH3		1986 East Trailer									
NEW			02VEH39		2006 Travis Trailer									
NEW			02VEH4		1986 East Trailer									
NEW			02VEH46		Portable Air Compressor G/S 175									
NEW			02VEH5		1986 East Trailer									
NEW			02VEH52		Forklift									
NEW			02VEH6		1985 Ford (WECO) Lic #495479									
NEW			02T24010		Primary Tank #1									
NEW			02T24020		Primary Tank #2									
NEW			02T24030		Primary Tank #3									
NEW			02T24040		Primary Tank #4									
NEW			02T24050		Primary Tank #5									
NEW			02T24060		Primary Tank #6									
NEW			02T24170		Primary Tank #7									
NEW			02T24180		Primary Tank #8									
NEW			02T24190		Primary Tank #9									
NEW			02MCC-D		MCC-D									
NEW			02MCC-L		MCC-L									
NEW			02F42000		Odor Scrubber #2 Fan									
NEW			02MME42010		Scrubber #2 Eyewash #1									
NEW			02MME42020		Scrubber #2 Eyewash #2									
NEW			02SCBA1		SCBA #1 (11553300S367)									
NEW			02SCBA2		SCBA #2 (11553300S372)									
NEW			02VEH110		2021 F-350 Ford Truck P/U									
NEW			02VEH100		2017 Ford Escape (Lic #1402272)									
NEW			02VEH103		2017 Ford Transit (Lic #1402273)									
NEW			02VEH105		2018 Ford Escape									
NEW			02VEH36		2007 Ford Ranger (Lic #1241869)									
NEW			02VEH41		2005 Ford Ranger (Lic #1208729)									
NEW			02VEH99		2016 F-150 Super Cab (Lic #1334300)									
NEW			02-00241		Misc			NA						
NEW			02-00341		Misc			NA						
NEW			02T32001		Aeration Tank #1			NA						
NEW			02T32002		Aeration Tank #2			NA						
NEW			02T32003		Aeration Tank #3			NA						
NEW			02T32004		Aeration Tank #4			NA						
NEW			02T32105		Aeration Tank #5			NA						
NEW			02T32106		Aeration Tank #6			NA						
NEW			02T32107		Aeration Tank #7			NA						
NEW			02-012		Flood Control Station Bldg 00			NA						
NEW			02-0121		Misc			NA						
NEW			02-0171		Misc			NA						
NEW			02-0131		Misc			NA						
NEW			02MEE14000		Weather Monitor II			NA						
NEW			02SCADA		JBL SCADA SYSTEM			NA						
NEW			02-009		Old Lab Bldg 11			NA						
NEW			02-0091		Misc			NA						
NEW			02-00211		Misc			NA						
NEW			02-500		Headworks Misc - Bldg 20			NA						
NEW			02-5001		Misc			NA						
NEW			02-00311		Misc			NA						
NEW			02-008		Plant 1 Blower Bldg 30			NA						
NEW			02-00271		Misc			NA						
NEW			02-0081		Misc			NA						
NEW			02-005		Plant 2 Blower Bldg 35			NA						
NEW			02-00371		Misc			NA						
NEW			02-0051		Misc			NA						
NEW			02-004		Solids Bldg 40			NA						
NEW			02-01511		Misc			NA						
NEW			02-01521		Misc			NA						
NEW			02-01531		Misc			NA						
NEW			02GCS45000		Unison Skid			NA						
NEW			02MME40110		Cogen Gas Dryer			NA						
NEW			025EP40116		Exhaust Attenuator/Steam Separator			NA						
NEW			02-011		Boiler Room #1 Bldg 60			NA						
NEW			02-0111		Misc			NA						
NEW			02-01421		Misc			NA						
NEW			02MME61000		Boiler #1 Flame Arrestor			NA						
NEW			------		Digester Hot Water Pumps and Valves			NA						
NEW			02-010		Boiler Room #2 Bldg 65			NA						
NEW			02-0101		Misc			NA						
NEW			02-01431		Misc			NA						
NEW			02-007		Old Chlorine Storage Bldg 70			NA						
NEW			02-0071		Misc			NA						
NEW			02-006		Effluent Pump Station Bldg 90			NA						
NEW			02-0061		Misc			NA						
NEW			02-1001		Misc			NA						
NEW			02-00251		Misc			NA						
NEW			02-0151		Misc			NA						
NEW			02-00261		Misc			NA						
NEW			02MME64112		Digester #1Press. and Vacuum Relief			NA						
NEW			02MME64113		Digester #1 Press. and Vacuum Relief			NA						
NEW			02MME64114		Digester #1 Vertical Flame Arrester			NA						
NEW			02MME64115		Digester #1 Vertical Flame Arrester			NA						
NEW			02MME64116		Digester #1 Thermal Shutoff Valve			NA						
NEW			02MME64117		Digester #1 Thermal Shutoff Valve			NA						
NEW			02MME64212		Digester #2 Press. and Vacuum Relief			NA						
NEW			02MME64213		Digester #2 Press. and Vacuum Relief			NA						
NEW			02MME64214		Digester #2 Vertical Flame Arrester			NA						
NEW			02MME64215		Digester #2 Vertical Flame Arrester			NA						
NEW			02MME64216		Digester #2 Thermal Shutoff Valve			NA						
NEW			02MME64217		Digaster #2 Thermal Shutoff Valve			NA						
NEW			02-01411		Misc			NA						
NEW			02-01441		Misc			NA						
NEW			02-01451		Misc			NA						
NEW			02-01461		Misc			NA						
NEW			02-01471		Misc			NA						
NEW			02T23000		Grit Tank #1 (9 MGD)			NA						
NEW			02T23100		Grit Tank #2 (4 MGD)			NA						
NEW			02-013		Administration & Support Buildings			NA						
NEW			02-101		Engineering Support			NA						
NEW			02-102		Engineering Meeting			NA						
NEW			02-103		Engineering Project			NA						
NEW			02-104		Elec - JBL			NA						
NEW			02-106		Maint - JBL			NA						
NEW			02-107		Ops - JBL			NA						
NEW			02-108		Ops/Maint - JBL			NA						
NEW			02-110		SCADA			NA						
NEW			02-PNLP1VAPEX		VAPEX Unit			NA						
NEW			02-109		Safety - JBL			NA						
NEW			02MME11040		Admin Bldg. Entry Gate			NA						
NEW			02MME63010		Eyewash			NA						
NEW			02-00221		Misc			NA						
NEW			02-00321		Misc			NA						
NEW			02-0161		Misc			NA						
NEW			02-00231		Misc			NA						
NEW			02-00331		Misc			NA						
NEW			02-00351		Misc			NA						
NEW			02-01811		Misc			NA						
NEW			02-01821		Misc			NA						
NEW			02-01831		Misc			NA						
NEW			02WWTP10100001		9-Side Treatment Plant			NA						
NEW			02WWTP10200001		4-SideTreatment Plant			NA						
NEW			02WWTP10300001		JB Latham Treatment Plant			NA						

October 26, 2022

David Gibson
California Regional Water Quality Control Board
San Diego Region
2375 Northside Dr. Suite 100
San Diego, CA. 92108

SUBJECT: Aliso Creek Ocean Outfall Order No. R9-2022-0006 Asset Management Plan

Dear Mr. Gibson:

Transmitted for your review is the Asset Management Plan for the Aliso Creek Ocean Outfall in compliance with NPDES Sections 6.2.5.7 and 6.3.5.7. Should you have any questions or comments, please feel free to contact me at 949-234-5409 or via email at abaylor@socwa.com.

"I certify under penalty of law that this document and all attachments under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR 122.22(d))

Very truly yours,

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Amber Baylor
Director of Environmental Compliance

cc: SOCWA PC24 Members

ALISO CREEK OCEAN OUTFALL ASSET MANAGEMENT PLAN

NPDES No. CA0107611, Order R9-2022-0006

Abstract

In conformance with NPDES Section 6.2.5.7, SOCWA and SOCWA Member Agencies developed this Asset Management Plan for proper operation, engineering and financial management, and Board level oversight of the permitted facilities. This AMP also complies with Section 6.3.5.7.

SOCWA

October 2022

SOCWA
South Orange County Wastewater Authority

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List of Tables

Acronyms and Abbreviations

Acronym or Abbreviation	Meaning
ACOO	Aliso Creek Ocean Outfall
ACWRF	Aliso Creek Water Reclamation Facility
AM	Asset Management
AMP	Asset Management Plan
CIP	Capital Improvement Project
CMMS	Computerized Maintenance and Management System
ETWD	El Toro Water District
IDP	Irvine Desalter Project
IRWD	Irvine Ranch Water District
MNWD	Moulton Niguel Water District
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
RUL	Remaining Useful Life
SCWD	South Coast Water District
SDRWQCB	San Diego Regional Water Quality Control Board
SGU	Shallow Groundwater Unit
SJCOO	San Juan Creek Ocean Outfall
SMWD	Santa Margarita Water District
SOCWA	South Orange County Wastewater Authority
WRP	Water Reclamation Plant

Executive Summary

Asset Management Purpose, Objective, & Findings

Purpose:

To comply with the ACOO NPDES Permit as stated in the NPDES permit: "Asset management planning provides a framework for setting and operating quality assurance procedures and ensuring the Dischargers have sufficient financial and technical resources to continually maintain a targeted level of service and the operational integrity of the POTWs. Asset management requirements have been established in this Order to ensure compliance with Standard Provision 1.4 in Attachment D of this Order and the requirements of 40 CFR section 122.41(e)."

Objectives:

This Asset Management Plan (AMP) presents a proactive approach utilized by SOCWA member agencies to repair, rehabilitate, and replace assets so those assets are reliable and operating when needed. This AMP provides the structure by which SOCWA member agencies minimize unplanned outages, manage risks associated with asset or service impairment through asset performance optimization, develop cost-effective management strategies in the long-term, and strive for continual improvement of asset management (AM) practices.

Organization:

The Aliso Creek Ocean Outfall (SJCOO) AMP is organized into four parts which accompany NPDES Section numbers to provide the Regional Board and interested parties with a roadmap that permittees used to comply with the ACOO NPDES requirements. The ACOO AMP starts with Part 1 to provide an overview of the facilities covered in this AMP in compliance with §6.3.5.7.3. Part 2 provides the reader with an overview of the maintenance programs and funding to accomplish rehabilitation and needed repair of the permitted facilities. Part 2 complies with §6.3.5.7.1., §6.3.5.7.2., and §6.3.5.7.6. Part 3 includes funding sources, capital program management and system projections for each facility in compliance with §6.3.5.7.4. and §6.3.5.7.5. Part 4 provides a general overview of the findings in this AMP.

Findings:

All agencies are in various stages of their asset management program implementations. Agencies are properly planning, maintaining, and replacing small capital and large capital in conformance with the ACOO NPDES requirements. Through inspections conducted by SDRWQCB staff after the adoption of the NPDES permit, there were no material deficiencies found. Agencies are taking proper care and maintenance of their facilities as required by the NPDES permit.

Part 1: Introduction

Asset Management Organization

There are nine permitted facilities under the ACOO permit as described in Table 1 below. The table below provides the reference point for each named discharge facility, the discharger, and the permitted description of the facility in compliance with the AMP requirement for inclusion. Each section of this AMP refers to the discharger to organize the list of facilities that the agency has direct oversight over, through contracted agreements, or through direct oversight as part of their organizational structure. The dischargers are listed in alphabetical order throughout the AMP for consistency and clarity throughout the document.

Discharge Location	Facility Name	**Discharger**	**Permitted Description NPDES Section in Attachment F**
M-001	SOCWA Aliso Creek Ocean Outfall (ACOO)	SOCWA	2.2
M-001A	SOCWA Regional Treatment Plant (RTP)	SOCWA	2.1.1.
M-001B	SOCWA Coastal Treatment Plant (CTP)	SOCWA	2.1.2.
M-001C	IRWD Los Alisos Water Reclamation Plant (IRWD LAWRP)	IRWD	2.1.3.
M-001D	El Toro Water District Water Reclamation Plant (ETWD WRP)	ETWD	2.1.4.
M-001E	Irvine Desalter Project Portable Water Treatment System (IRWD IDP)	IRWD	2.1.5.
M-001F	Irvine Desalter Project Shallow Groundwater Unit (IRWD SGU)	IRWD	2.1.6.
M-001G	SCWD Aliso Creek Water Reclamation Facility (SCWD ACWRF)	SCWD	2.1.7.
M-001H	IRWD Combined Desalter, SGU, and Los Alisos Discharge	IRWD	2.1.8.

Table 1: ACOO permitted discharge location, facility name, and discharger

ACOO Discharge Facility Infrastructure in Compliance with § 6.3.5.7.3

The NPDES permit requires that the AMP require a map of the wastewater treatment plant that "shall incorporate assets from the asset management inventory." Each agency provided maps related to this requirement which are included in Appendix A with descriptions of how the agencies interpreted this requirement and responded with materials available that were previously provided.

Part 2: Program Monitoring and Improvements – In Compliance with NPDES Section 6.3.5.7.1

Compliance with NPDES Sections §6.3.5.7.1., §6.3.5.7.2., and §6.3.5.7.6

Each agency includes a robust system of rehabilitation and replacement plans that are tied to their operational planning through their respective operational structures. Computerized maintenance and management systems (CMMS) are the main operational management software system(s) that agencies utilize for maintenance planning and scheduling of replacement maintenance activities. Management structure with personnel in charge of direct oversight to accomplish the preventative maintenance and other rehabilitation activities in the primary mechanism for completion of the permit compliance requirements. The San Diego Regional Water Quality Control Board (SDRWQCB) completes compliance evaluation inspections to review the rehabilitation and preventative maintenance requirements with a metric scoring system to identify whether the activity levels are unacceptable or not. In April 2022, the SDRWQCB staff performed CEIs at all of the facilities, with no facility receiving an unacceptable rating that would be out of compliance with these permit requirements.

Rehabilitation and Replacement Plan in Compliance with NPDES § 6.3.5.7.1

The ACOO NPDES permit states: "Each agency includes a robust system of rehabilitation and replacement plans that are tied into their capital spending and budgeting processes." Detailed in this section is how each agency is meeting this permit requirement. Each agency provided remaining useful life estimates for each of their facilities which are included in each section below.

ETWD

The tables below include the current remaining use life values for ETWD's WRP. ETWD Engineering staff developed a color-coded system to provide a visual indication of the tiers of remaining useful life as shown in Figure 1 below. The color-coded system is carried through to Tables 2-16 to classify RUL to asset category in each of the major WRP component system.

Figure 1: Remaining Useful Life Asset Classification System

HEADWORKS

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Bar Screen Rake	Eurodrive	1.5	Constant	2008	2021	1	N/A	N/A	N/A	N/A	N/A		
Grit Auger	Baldor	1	Constant	2012	None	10	N/A	N/A	N/A	N/A	N/A		
Rotary Screen No. 1, 3, 5	Eurodrive	0.4	Constant	1980	2017-2021	1-year/4-years	N/A	N/A	N/A	N/A	N/A		
Rotary Screen No. 2, 4, 6	Eurodrive	0.4	Constant	1980	2016-2019	2-years/5-years	N/A	N/A	N/A	N/A	N/A		The District has intiated a Headworks Rehabilitation Study that will evaluate all Headworks equipment and develop a plan for rehabilitation and replacement.
Belt Conveyor No. 1	Reliance	3	Soft Start	1997	2021	1	N/A	N/A	N/A	N/A	N/A		
Belt Conveyor No. 2	Reliance	3	Soft Start	1997	2017	5	N/A	N/A	N/A	N/A	N/A		
Dimminutor	Aevane	3	Constant	2015	2019	3	N/A	N/A	N/A	N/A	N/A		
Sump Pump	Reliance	2	Constant	2010	2017	5	New Essco	Submersible	2017	None	5		
Grit Tank Blower		25	Soft Start	2011	None	11	N/A	N/A	N/A	N/A	N/A		

Table 2: ETWD WRP Headworks RUL Table

EQUALIZATION BASINS

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Mixing Pump No. 1	KSB	12.8	Soft Start	1997	2021	1	KSB	Submersible	1997	2021	1		
Mixing Pump No. 2	KSB	12.8	Soft Start	1997	2020	2	KSB	Submersible	1997	2020	2		The District rebuilds these pumps at least every 4 years and recently replaced all the power cables for each.
Mixing Pump No. 3	KSB	12.8	Soft Start	1997	2022	0	KSB	Submersible	1997	2022	0		
Mixing Pump No. 4	KSB	12.8	Soft Start	1997	2019	3	KSB	Submersible	1997	2019	3		

Table 3: ETWD Equalization Basins RUL Table

INFLUENT PUMP STATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Pump No. 1	KSB	34	VFD	2000	None	22	KSB	Submersible	2000	None	22		Will rebuild within the next 5 years.
Pump No. 2	KSB	34	VFD	2000	2020	2	KSB	Submersible	2000	2020	2		Rebuilt recently.
Pump No. 3	KSB	34	VFD	2000	None	22	KSB	Submersible	2000	None	22		Planning to rebuild this year.
Pump No. 4	KSB	34	VFD	2000	None	22	KSB	Submersible	2000	None	22		Will rebuild within the next 5 years.

Table 4: ETWD WRP Influent Pump Station RUL Table

AERATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Aeration Blower No. 1	U.S. Motors	300	Constant	1997	2007	15	N/A	N/A	N/A	N/A	N/A		These blowers are only used as standby. Plans to replace one to match the new Sulzer blower and server as a more efficient standby within the next 5 years.
Aeration Blower No. 2	U.S. Motors	300	Constant	1997	2009	13	N/A	N/A	N/A	N/A	N/A		
Sulzer Turbo Blower	Sulzer	400	VFD	2016	None	6	N/A	N/A	N/A	N/A	N/A		
Plant Air Blower No. 1	Neuros	75	VFD	2011	None	11	N/A	N/A	N/A	N/A	N/A		
Exhaust Fan No. 1	U.S. Motors	1.5	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		
Exhaust Fan No. 2	U.S. Motors	1.5	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		Maintenance covered on an ongoing basis through HVAC subcontractor. Some of the motors have been replaced recently.
Exhaust Fan No. 3	U.S. Motors	1.5	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		
Exhaust Fan No. 4	U.S. Motors	1.5	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		
Exhaust Fan No. 5	U.S. Motors	1.5	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		

Table 5: ETWD WRP Aeration System RUL Table

CLARIFIERS

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Clarifier No. 1	U.S. Motors	0.75	Constant	1960	2007	15	N/A	N/A	N/A	N/A	N/A		The District plans to rehabilitate these clarifier components within 5 years.
Clarifier No. 3	U.S. Motors	0.75	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		
Clarifier No. 4	U.S. Motors	0.75	Constant	1997	None	25	N/A	N/A	N/A	N/A	N/A		

Table 6: ETWD WRP Clarifiers RUL Table

RETURN ACTIVATED SLUDGE

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
RAS Pump No. 1	U.E. Electric	20	VFD	1997	None	25	Fairbanks Morse	Centrifugal	1997	2009	13		Replacing VFD this year.
RAS Pump No. 2	U.E. Electric	20	VFD	1997	None	25	Fairbanks Morse	Centrifugal	1997	2009	13		Spare motor, not installed (because Secondary Clarifier No. 2 does not exist). Swapped between pumps for use.
RAS Pump No. 3	U.E. Electric	20	VFD	1997	2008	14	Fairbanks Morse	Centrifugal	1997	2009	13		
RAS Pump No. 4	U.E. Electric	20	VFD	1997	None	25	Fairbanks Morse	Centrifugal	1997	2009	13		

Table 7: ETWD WRP Return Activated Sludge RUL Table

D.A.F.

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
DAF Feed Pump	Reliance	7.5	Constant	2021	None	1	Essco	Submersible	2007	2021	1		
DAF No. 1 Recirculation	G.E.	40	Constant	2015	None	7	Nikuni	Centrifugal	2015	2015	7		
DAF No. 2 Recirculation	Nikuni	25	Constant	2010	None	12	Nikuni	Centrifugal	2010	2010	12		Plans to replace within the next 5 years.

D.A.F.

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
DAF Feed Pump	Reliance	7.5	Constant	2021	None	1	Essco	Submersible	2007	2021	1		
DAF No. 1 Recirculation	G.E.	40	Constant	2015	None	7	Nikuni	Centrifugal	2015	2015	7		
DAF No. 2 Recirculation	Nikuni	25	Constant	2010	None	12	Nikuni	Centrifugal	2010	2010	12		Plans to replace within the next 5 years.

Table 8: ETWD WRP Dissolved Air Flotation (DAF) RUL Table

OCEAN OUTFALL PUMP STATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Air Compressor (Misc.)	Ingersol Rand	15	Constant	2005	None	17	N/A	N/A	N/A	N/A	N/A		
Air Compressor (Surge Tank)	Ingersol Rand	3	Constant	1980	None	42	N/A	N/A	N/A	N/A	N/A		Replacement occuring this year.
Pump No. 1	U.S. Motors	160	VFD	2006	None	16	Sulzer Bingham	M.S.T	2006	None	16		Installed guide vanes to ameliorate vibration issues,
Pump No. 2	U.S. Motors	160	VFD	2006	None	16	Sulzer Bingham	M.S.T	2006	None	16		Installed guide vanes to ameliorate vibration issues. Will replace to improve efficiency within the next 5 years.
Pump No. 3	U.S. Motors	160	VFD	2006	None	16	Sulzer Bingham	M.S.T	2006	None	16		Installed guide vanes to ameliorate vibration issues. Currently experiencing VFD issues so in the process of replacing.

Table 9: ETWD WRP Ocean Outfall Pump Station RUL Table

CLOTH MEDIA DISK FILTERS

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Filter No. 1 Backwash	Baldor	3	Constant	2014	None	8	Gorman Rupp	Centrifugal	2014	None	8		
Filter No. 2 Backwash	Baldor	3	Constant	2014	None	8	Gorman Rupp	Centrifugal	2014	None	8		

Table 10: ETWD WRP Cloth Media Filter RUL Table

TERTIARY EFFLUENT TO STORAGE TANK

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Transfer Pump No. 1	G.E.	25	VFD	2014	None	8	Peerless	M.S.T	2014	None	8		
Transfer Pump No. 2	G.E.	25	VFD	2014	None	8	Peerless	M.S.T	2014	2022	0		
Transfer Pump No. 3	G.E.	25	VFD	2014	None	8	Peerless	M.S.T	2014	2022	0		

Table 11: ETWD WRP Tertiary Effluent to Storage Tank RUL Table

RECYCLED WATER PUMP STATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Pump No. 1	G.E.	125	VFD	2014	2018	4	Peerless	M.S.T	2014	2018	4		
Pump No. 2	G.E.	250	VFD	2014	2019	3	Peerless	M.S.T	2014	None	8		
Pump No. 3	G.E.	250	VFD	2014	2022	0	Peerless	M.S.T	2014	None	8		
Pump No. 4	G.E.	250	VFD	2014	2020	2	Peerless	M.S.T	2014	None	8		

Table 12: ETWD Recycled Water Pump Station RUL Table

EFFLUENT PUMP STATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Pump No. 1	Induction	60	VFD	1990	None	32	Fairbanks Morse	Centrifugal	1990	None	32		Currently in the process of replacing by 2023
Pump No. 2	U.S. Motor	60	VFD	1988	None	34	Fairbanks Morse	Centrifugal	1982	None	40		

Table 13: ETWD Effluent Pump Station RUL Table

EFFLUENT PUMP STATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Pump No. 1	Induction	60	VFD	1990	None	32	Fairbanks Morse	Centrifugal	1990	None	32		Currently in the process of replacing by 2023
Pump No. 2	U.S. Motor	60	VFD	1988	None	34	Fairbanks Morse	Centrifugal	1982	None	40		

Table 14: ETWD WRP Effluent Pump Station RUL Table

AIR GAP PUMP STATION

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Pump	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Pump No. 1	U.S. Motor	10	Constant	2017	None	5	Jacuzzi	Centrifugal	2008	None	14		
Pump No. 2	Century	10	Constant	2013	None	9	Jacuzzi	Centrifugal	2013	None	9		

Table 15: ETWD WRP Air Gap Pump Station RUL Table

ODOR CONTROL

Purpose	Motor	H.P.	Speed	Year Installed	Last Rewind	Motor Age	Fan	Type	Year Installed	Year Rebuilt	Pump Age	RUL	Notes
Fan No. 1			Constant	1997	2019	3			1997	2019	3		
Fan No. 2			Constant	1997	2019	3			1997	2019	3		

Table 16: ETWD WRP Odor Control RUL Table

IRWD

IDP Shallow Groundwater Unit: IRWD's IDP SGU is undergoing a significant retrofit project to add the ability to treat PFAS. All the major treatment components are being upgraded. This project will address all electrical, mechanical, civil, and structural aspects of the plant. The Remaining Useful Lives of major components are shown in the summary table below. Ongoing operational, CIP Asset Management, and funding are handled as described above. Table 17 provides the RUL (years) based on engineering asset class: civil, electrical, instrumentation, mechanical, and structural and major component system.

IDP SGU	RUL (Years)
Brine Pumping	
Civil	48
Electrical	15
Instrumentation	20
Mechanical	5
Structural	27
Distribution Pumping	
Civil	48
Electrical	15
Instrumentation	20
Mechanical	15
Structural	27
GAC Treatment System	
Civil	63
Electrical	30
Instrumentation	20
Mechanical	25
Structural	42
General	
Civil	48
Electrical	40
Mechanical	32
Structural	50

Table 17: IRWD SGU RUL Table

IDP Potable Treatment Plant: IRWD's IDP Potable Treatment Plant was constructed in 2006. Similar to the IDP SGU, ongoing operational, CIP Asset Management, and funding are handled as described above. The Remaining Useful Lives of major components are shown in the summary table below. Table 18 provides the RUL (years) based on engineering asset class: civil, electrical, instrumentation, mechanical, and structural and major component system.

IDP PTP	RUL (Years)
A-General	
Electrical	12
Emergency Power	9
Mechanical	22
Site	31
Structure	19
B-Green Sand Filter System	
Electrical	12
Instrumentation and Controls	19
Mechanical	22
Structure	19
C-Raw Water Pretreatment	
Electrical	12
Instrumentation and Controls	19
Mechanical	22
Structure	19
D-RO Filtration	
Electrical	12
Instrumentation and Controls	19
Mechanical	22
Structure	19
E-Decarbonator System	
Electrical	12
Instrumentation and Controls	19
Mechanical	22
Structure	19
F-Product Water Pump Station	
Electrical	12
Instrumentation and Controls	19
Mechanical	22
Structure	19
G-Chemicals	
Electrical	12
Instrumentation and Controls	19
Mechanical	22
Structure	19

Table 18: IRWD SGU RUL Table

Los Alisos Water Recycling Plant (LAWRP): LAWRP has been operating since 1964 and has had ongoing operational maintenance and capital improvements. Most recently, in 2007, the plant underwent a major renovation, and the Remaining Useful Life table (See below) reflects this work. IRWD anticipates upgrades within the next five years to keep the plant running and is currently evaluating long-term alternatives that include potentially completely rebuilding the plant. Table 19 provides the RUL (years) based on engineering asset class: civil, electrical, instrumentation, mechanical, and structural and major component system.

LAWRP	RUL (Years)
A-General	
Electrical	16
Emergency Power	8
Instrumentation and Controls	23
Mechanical	23
Site	30
Structure	23
B-Headworks	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	23
C-Pond #1	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	27
D-Pond #2	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	27
E-Pond #3	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	27
F-Pond #4	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	27
G-Pond #5	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	27
H-Pond #5 Pump Station	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	23
I-Clarifier/Media Filters	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	23
J-Biosolids	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	23
K-Chlorine Contact Tanks	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	23
L-Chemicals	
Electrical	16
Instrumentation and Controls	23
Mechanical	23
Structure	23

Table 19: IRWD LAWRP RUL Table

MNWD

Moulton Niguel Water District is the sole agency responsible for the flow to the Regional Treatment Plant and provided the following narrative as a response to Section 6.3.5.7.1 compliance requirement.

System reliability is paramount. Moulton Niguel Water District maintains more than $2 billion worth of water and wastewater infrastructure assets.

Moulton Niguel's 10-year Capital Improvement Program (CIP) contains $623M of identified projects for primarily the rehabilitation of: the District's 3A wastewater treatment plant, lift stations, pump stations, reservoirs, transmission mains, valve replacements, and other identified infrastructure. Attached is Appendix A from the District's FY2022-23 approved budget. This

document summarizes all of the currently identified projects in the District's 10-year CIP, including the approximate timeframe for implementation. The District's capital financing plan accounts for unexpected cost impacts, such as updated condition assessments, delayed project starts, and municipal permitting requirements. Significant projects in the 10-year CIP include: a pipeline replacement program, reliability investments in vertical assets, such as pump and lift stations, reservoir management system replacements, electrical system improvements, as well as a comprehensive rehabilitation and replacement plan for the 3A wastewater treatment plant.

Vertical Asset Rehabilitation and Replacement Program

The District operates and maintains over 50 pump stations, lift stations, take-outs, and flow-control facilities for potable water, recycled water, and wastewater services throughout its service area. As part of its CIP, Moulton Niguel has implemented a program to comprehensively rehabilitate each vertical asset facility as part of an $82.6M Vertical Asset Rehabilitation and Replacement Program. Each project will include a comprehensive assessment of all aspects of the facility, including sitework, structures, mechanical systems, electrical, and instrumentation, and will complete all necessary improvements as a single project. The early stages of design are underway for the complete reconstruction of the North Aliso Lift Station and the comprehensive rehabilitation of the Aliso Creek Lift Station. Construction of each of these projects is anticipated to begin in FY2023-24 with overall project budgets of approximately $6.0M and $3.9M, respectively.

Pipeline Rehabilitation and Replacement Program

The District operates and maintains approximately 1,400 miles of buried pipelines for potable water, recycled water, and wastewater services throughout its service area. As part of its CIP, Moulton Niguel has implemented a program to systematically replace pipelines as part of a $108M Pipeline Rehabilitation and Replacement Program. The program was established using a risk-based prioritization process to rank pipelines based on a variety of factors including age, materials, leak history, CCTV observations, number of services or hydrants out of service, soil corrosivity, adjacent land uses, and proximity to water bodies as applicable. These rankings are updated annually as part of the CIP budget development process and then utilized to prioritize pipelines for condition assessment, rehabilitation, and replacement. Design is nearly completed for the Regional Force Main Replacement Project and Crown Valley Pipelines Replacement Project (comprised of the Lower Salada Lift Station Force Main Replacement, Crown Valley Parkway Transmission Main Lower Reach Replacement, and I.D. No. 1 Master Meter Replacement). Construction of each of these projects is anticipated to begin in FY2023-24 with overall project budgets of approximately $19.2M and $17.3M, respectively.

SCWD

The SCWD plans on spending ~$545,000 on the Aliso Creek Water Harvesting Facility. A portion of the chart that shows the spending levels is included on p.11 of the SCWD's FY23 Budget. The SCWD budget can be found on the SCWD website here:
https://www.scwd.org/open_government/financials/budget.php

SCWD also participates in and funds operational projects for the CTP through participation in the SOCWA Engineering Committee, SOCWA Finance Committee, and the SOCWA Board.

SOCWA

In FY 2021-22, SOCWA Operational and Maintenance staff completed 52 Small Capital projects at a value of $2.08 million (estimated 80% spent). Goods on order for installation are $1.08 million, which has delayed small capital projects due to supply chain issues. The SOCWA O&M budget can be found here: http://www.socwa.com/wp-content/uploads/2022/07/FY-2022-23-BOD-Approved-Budget-1.pdf

Maintenance Planning and Asset System Summaries in Compliance with NPDES § 6.3.5.7.2 and § 6.3.5.7.6

ETWD

All planning activities for maintenance activities are handled in the Excel based CMMS. In April 2022, Joann Lim of the SDRWQCB conducted a Compliance Evaluation Inspection (CEI) of the agency facilities, which reviewed the computer maintenance and management system software used to track assets used in the maintenance and capital spending projects. A review of the preventative maintenance activities was conducted, and no deficiencies were found, as described in the CEI letter received from Ms. Lim in May 2022.

IRWD

IRWD has a long-term approach to operational and capital asset management. Operational asset management and preventative maintenance use Maximo as the primary Computer Maintenance and Management System (CMMS). Larger capital replacement projects identified during routine preventative maintenance are prioritized by IRWD's Operations Support Engineering and Operational Maintenance teams. Recently, IRWD updated its long-term Replacement Planning Model (RPM) financial projections for all treatment plants, and funding is available through IRWD's enterprise Replacement Funding Policy. IRWD's risk-based Capital Improvement Program Asset Management is being expanded to include treatment plants as well. These three programs, Maximo, RPM, and CIP Asset Management, address near-term, long-term financial planning, and capital improvements.

MNWD

In response to § 6.3.5.7.2:

The Collections, Electrical/Instrumentation, Facilities Maintenance, and Wastewater Treatment departments of Moulton Niguel Water District each have extensive preventive maintenance (PM) programs in place. These PMs are scheduled within the District's recently implemented computerized maintenance management system (CMMS) of record, NEXGEN. NEXGEN is an advanced CMMS that provides customizable, easy to use modules and allows for expeditious/timely data exports as well as complex performance reporting for a variety of metrics. The preventive maintenance module in NEXGEN allows for a variety of frequency options, customizable checklists, and attachments to be added to the work orders, such as photographs, standard operating procedures, and reference materials. The tables below represent a summary

of the preventive maintenance activities and frequencies for wastewater collection, pumping, and treatment systems by department. The total cost of these preventative maintenance activities is approximately $1.4M annually.

Collections PMs			
Main Task	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Early Enhanced Cleaning (30 routes)	Semi-annual	416	$37,274
Enhanced Cleaning (123 routes)	Semi-annual	1908	$262,541
Routine Cleaning (64 routes)	Annual	3636	$325,786
CCTV	Annual	1584	$116,899
Total		**7544**	**$742,500**

Table 20: MNWD Collections Preventative Maintenance Activities

Electrical/Instrumentation PMs				
Main Task	**PM Details**	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Critical Quarterly Checks (22 facilities)	Inspect, clean, and test alarms, PLC, MCC, SMC, & VFD	Quarterly	312	$25,555
3A PLC Maintenance	Inspect and clean PLC panels	Annual	12	$4,670
Aeration Blower System	Inspect, clean, and test	Annual	12	$4,670
AWT Pumping System	Inspect, clean, and test	Annual	20	$7,783
Bar Screen Maintenance	Inspect, clean, and test	Annual	8	$3,113
Centrifuge and Conveyor System	Inspect, clean, and test	Annual	20	$7,783
Compactor System	Inspect, clean, and test	Annual	8	$3,113
Digester Pump Blower System	Inspect, clean, and test	Annual	20	$7,783
Gas Monitoring	Inspect and calibrate	Quarterly	16	$6,226
Grit Pumping System	Inspect, clean, and test	Annual	12	$4,670
HVAC Systems	Inspect, clean, and test	Annual	20	$7,783
Main Switchboard		Annual	60	$23,348
ORT Pump Blower System	Inspect, clean, and test	Annual	20	$7,783
Primary Sedimentation Tank Skim & Sludge Collection System	Inspect, clean, and test	Annual	20	$7,783
Primary Sludge Pumping System	Inspect, clean, and test	Annual	16	$6,226
Raw Sewage Pump System	Inspect, clean, and test	Annual	20	$7,783
Returned Activated Sludge System	Inspect, clean, and test	Annual	20	$7,783

Roto Screen (Compactor) System	Inspect, clean, and test	Annual	20	$7,783
Secondary Sedimentation Tank Skim & Sludge Collection System	Inspect, clean, and test	Annual	20	$7,783
Waste Activated Sludge System	Inspect, clean, and test	Annual	8	$3,113
Total			**644**	**$154,747**

Table 21: MNWD Electrical/Instrumentation Preventative Maintenance Activities

Facilities Maintenance PMs				
Main Task	**PM Details**	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Air Conditioning Service	Assist contractor	Quarterly	6	$415
Facility/Location Checks	Inspect site surroundings. Listen for unusual sounds from pumps, fans, compressors, valves, and panels. Check pumps, packing adjustment or seal water weep, vibration, leaking, and bearing temperature. Check PLC lights for active alarms.	Daily	1464	$101,250
Generator/Auxiliary Testing	Check fluids. Test auxiliary and ATS switch. Test alarms. Clean probes, weep bowls, and sump pits	Monthly	840	$58,094
Hoist/Crane Inspection	Inspect hook, chain/cable, brake test, stops, and operation	Quarterly	120	$8,299
Logging/Inspection	Checking various assets within station	Weekly	1560	$107,890
Oxygen Generation System Service	Assist contractor	Quarterly	20	$1,383
Pump Inspection/Maintenance	Overall inspection, check coupling, and check vibration	Quarterly	120	$8,299
Quarterly Safety Inspection Procedure	Condition assessment of switches and controls, cat walks, railings, stairs, guards, warning signs, floor grates, fire extinguishers, hoists, and eyewashes.	Quarterly	20	$1,383
Surge Tank Maintenance and Inspection	Visual inspection on tank and water	Annual	3	$207

Valve Exercising	Operate valves	Semi-annual	100	$6,916
Wet Well Inspection and Maintenance	Inspect wet well for thickness and clean out if necessary.	Monthly	84	$6,918
Plant-Aeration Blower Inspection	Grease, check temperature and vibration.	Quarterly	32	$2,213
Plant-Air Compressor Maintenance	Check belt, air filter, change oil, clean exterior air filter, change oil filter if needed.	Quarterly	112	$7,746
Plant-Bar Screen Inspections	Replace greasers, gearbox oil change, check pins, sprockets, teeth, and screen in channel.	Annual	3	$207
Plant-Boiler System Inspection and Maintenance	Tune up, emissions, and inspect recirculating and heat loop pumps for leaks.	Quarterly/Annual	86	$5,948
Plant-Compactor Inspection and Maintenance	Grease, gearbox oil change, and replace brushes as needed.	Annual	3	$207
Plant-Digester System Inspection and Maintenance	Visual inspection, check belts and change oil on blowers.	Annual	24	$1,660
Plant-Grit Classifier Inspections	Grease and check bearings.	Quarterly	32	$2,213
Plant-Primary and Scum Collector Inspection	Visual inspection, change oil, check clutch and drive chain.	Annual	8	$553
Plant-Pump Inspection and Maintenance	Visual inspection, clean out and inspect teeth on grinders, change oil in pump and check belts,	Quarterly	114	$7,884
Plant-Secondary Clarifier Inspection	Confined space entry to check inside of tank and inspect internal equipment.	Annual	9	$622
Plant-Tank Inspection	Visual inspection on external tank and equipment, Confined space entry for visual inspection inside tanks.	Annual	16	$1,107
Plant-Wet Well Inspections	Inspect and clean out as needed.	Annual	6	$494
Total			**4779**	**$331,908**

Table 22: MNWD Facilities Maintenance Preventative Maintenance Activities

Wastewater Treatment Operations PMs				
Main Task	**PM Details**	**Schedule Type**	**Annual Labor Hours**	**Total Annual Cost**
Plant Rounds		Daily	1095	$80,674
Safety Equipment Checks	Gas detectors, fire extinguishers, eyewash stations, lights, confined space equipment, and ladder systems.	Weekly	104	$7,662
Equipment Rotations	2W pumps, bar screens, compactors, grit chambers, primary tanks, aeration blowers, RAS pumps, AWT applied pumps, AWT filter pumps, sodium hypochlorite pumps, polymer pumps, ferric chloride pumps, centrifuges, ORT recirculation pumps, and other equipment.	Monthly	240	$17,682
Aeration Basin Cleaning	Inspect and clean basins	Annually	80	$5,894
Sump Pump Checks		Monthly	24	$1,768
Dissolved Oxygen Profiles	Aeration tanks 1 & 2	Weekly	208	$15,324
Alarm Testing	Informational, critical, and dialer testing	Bi-weekly	26	$1,916
Sampler Checks	Inspect, clean, and test	Daily	365	$26,873
Bar Screen Maintenance	Inspect and replace greasers	Annually	8	$589
Total			**1785**	**$158,382**

Table 23: MNWD Wastewater Treatment Preventative Maintenance Activities

In response to § 6.3.5.7.6:

Moulton Niguel Water District has an extensive history of utilizing asset management (AM) software to track and manage operational workflows and preventative maintenance schedules of its assets.

In 2017, the District began leveraging its GIS software, Microsoft Excel, and GIS-based asset data to determine prioritization scores for its pipelines. Using criteria including age, materials, soil corrosivity, CCTV observations, adjacent land uses, and proximity to water bodies, we calculated Probability of Failure and Consequence of Failure scores, enabling the District to rank pipelines by overall priority. These rankings were then utilized to establish and prioritize upcoming capital projects and forecast capital funding needs.

Historically, the District's primary AM software was "Tabware" by AssetPoint. Starting in the spring of 2021, the District implemented a new AM software to more effectively manage and enhance the maintenance of the District's vertical assets and infrastructure. This new software, "Nexgen", provides a comprehensive, cloud-based AM software solution and Computer Maintenance Management System (CMMS) for the District moving forward. The software provides the following benefits:

- Provides management visibility and operational execution and allows for consistent data for analysis and reporting.
- Enables mobile work orders, automatic email alerts and review/approve requests through smartphones or tablets.
- Tracks staff workflow data to assign the right work tasks to the right people at the right time, minimizing unplanned downtime and improving efficiency.
- Sends automatic email alerts when review or approval is needed to keep workflows moving.
- Use the workorder history data, and time/material data, to develop asset lifecycle cost information. That, along with developed remaining useful life and costing data, will be utilized to inform a comprehensive asset management program that leverages data into actionable asset decision-making on system maintenance and rehabilitation projects.
- Increased Inventory Control

As of August 2022, the Nexgen implementation has been completed with nearly all workgroups within the Operations, Engineering, and Customer Service divisions. This implementation established routine preventative maintenance and reactive workorders, software and systems configuration, and initial development of an asset register, along with integrations with our geographic information system ("Geocortex"), timesheet management, fuel management, underground service alert process, collection system CCTV database, and our enterprise resource planning software ("JDEdwards). Additional planned implementations will include enhanced development of the asset registry data (including useful life values, cost values, and the refinement of risk analysis scores), and

the development of more robust asset management reporting. A sample of the asset details has been attached for reference.

SCWD

All planning activities for maintenance activities are handled in the Maintenance Connection CMMS. In April 2022, Joann Lim of the SDRWQCB conducted a Compliance Evaluation Inspection (CEI) of the agency facilities, which reviewed the computer maintenance and management system software used to track assets used in the maintenance and capital spending projects. A review of the preventative maintenance activities was conducted, and no deficiencies were found, as described in the CEI letter received from Ms. Lim in May 2022.

SOCWA

SOCWA uses Tabware by Aptean. Tabware by Aptean is a computerized maintenance management system or CMMS software that centralizes maintenance information and facilitates the processes of maintenance operations. It helps optimize the utilization and availability of physical equipment like vehicles, machinery, communications, plant infrastructures, and other assets.

The core of the CMMS is the database. It has a data model that organizes information about the assets needed for maintaining the equipment, materials, and other resources management by SOCWA.

The information in the CMMS database supports various functions of the system, which enable the following capabilities:

Resource and labor management:

- Track available employees
- Assign specific tasks
- Schedule projects requiring multiple crafts and/or Departments

Asset registry: Store, access, and share asset information such as:

- Manufacturer, model, serial number and equipment class, and type
- Associated costs and codes
- Location and position
- Performance and downtime statistics
- Associated documentation, video, images such as repair manuals, safety procedures, and warranty information

Work order management: Typically viewed as the main function of CMMS, work order management includes information such as:

- Work order number
- Description and priority
- Order type (repair, replace, scheduled)
- Cause and remedy codes
- Personnel assigned and materials used
- Backlog reports

Work order management also includes capabilities to:

- Automate work order generation
- Schedule and assign employees
- Review status and track downtime
- Record planned and actual costs
- Attach associated documentation, repair, safety information, equipment nameplate data (manufacturer, model, serial number, sizing, etc.), specifications, location and criticality information, documents and video files, user-defined data fields, hierarchy of components, assemblies, sub-assemblies and parts, maintenance and cost history, parts ordering information

Preventive maintenance:

- Automate work order initiation based on time, usage, and triggered events.
- Tabware allows staff to sequence and schedule preventive work orders.

Reporting, analysis, and auditing:

- Generate reports across maintenance categories such as asset availability, materials usage, and labor.
- Tabware also allows viewing equipment assemblies, sub-assemblies, components, and parts to maximize asset performance and improve technician wrench time by eliminating time spent searching for parts.

Information stored in Aptean EAM's Equipment Module is integrated throughout other Aptean EAM modules to help maximize asset performance. For example, inventory items listed on the hierarchy are integrated with the Aptean EAM Inventory Module.

Key features include:

- Reach any function with just 2 mouse clicks
- Aptean EAM's Query Wizard provides quick access to equipment and easy reporting
- Specify multiple meters for equipment to drive preventive maintenance
- Hierarchy view identifies plants, areas, systems, equipment, assemblies, parts, etc.
- Create work orders and requisitions directly from the equipment hierarchy
- Link any type of document to equipment and classes of equipment
- Specify components by equipment and equipment class for failure reporting and analysis
- Move equipment from one location to another directly from the equipment hierarchy

SOCWA staff reports key performance indicators related to Tabware CMMS to the SOCWA Board on a monthly and quarterly basis.

Part 3: Budgetary Considerations

Funding in compliance with §6.3.5.7.4.

NPDES §6.3.5.7.4 states that: "The AMP shall create an accounting of current and projected funding sources, relevant expenses, and financial reserves. Expenses may include operational, administrative, interest, or capital expenses. Funding sources may consist of federal, State, local or private grants, loans, or bonds, as well as connection and user fees.

System Projections in compliance with §6.3.5.7.5

Each agency identifies service area vulnerabilities and population water access needs through rate setting projects and Urban Water Management Plans, which are referenced and provided in the narrative for each agency below. In addition, NPDES §6.3.4.4 requires dischargers to develop a climate change plan as described here: "The Facilities shall be protected against regional impacts of changing climate conditions (e.g., rising sea levels, flooding, higher storm surges, and changing hydrography, including more intense atmospheric rivers). Compliance with this requirement shall be implemented through the development and implementation of applicable measures identified in the Climate Change Action Plan, which must be submitted within three years of the effective date of this Order pursuant to section 6.1 of the MRP (Attachment E)."

ETWD

The El Toro Water District provides water and sewer service to approximately 50,000 customers spread across approximately 5,350 acres in South Orange County. The District contracted with RBF Consulting to provide the District with a Water and Sewer Master Plan Report which:

- Identified existing water demand and sewer flow conditions
- Develops future water demand and sewer flow projections
- Establishes design and planning criteria
- Develops a hydraulic model of the water and sewer system
- Analyzes the existing systems, identifies system deficiencies, and recommends operational efficiencies
- Reviews the current Capital Facility Restoration & Replacement Program (CFRRP) and recommends modifications

The Water and Sewer Master Plan can be found here: https://etwd.com/wp-content/uploads/2019/09/2004MasterPlan.pdf. ETWD is currently in the process of developing a Water and Sewer Master Plan update, which will be publicly available in the first quarter of 2023.

ETWD includes wastewater treatment and capital replacement and refurbishment in the annual budget, which can be found here: https://etwd.com/wp-content/uploads/2022/07/2022-23-Budget-Document.pdf

IRWD

IRWD approved a two-year budget process for FY 22-23 that can be found here: https://www.irwd.com/images/pdf/about-us/Finance/irwd_fy21-23_capital_budget_final_adopted.pdf

MNWD

In response to § 6.3.5.7.4:

As the District transitions its focus from developing new infrastructure to maintaining and replacing existing infrastructure, the Long Range Financial Plan (LRFP), in conjunction with other long-term planning efforts, provides a roadmap for future resource needs and actions. Currently, the District is implementing a 10-Year Capital Improvement Plan containing $623 million in identified projects.

The availability of funds required to finance the capital improvement program and day-to-day operations of the District is tracked through the LFRP model. Capital typically spans across a long-time horizon; hence, a 10-year plan enables the District to plan out the financing needs for future capital expenditures through internal reserves, grants, state loans, property tax and rate revenues, or proceeds from bond issuances. Consistent with best practice, the District conservatively does not include any grant revenues in its financial projections; however, District staff aggressively pursue grant opportunities for qualified projects, ultimately securing over $10 million in grant funding since FY 2014-15. The long-range financial plan identifies the projected rate revenue adjustments and bond issuances needed to maintain the long-term financial health of the District.

The District maintains a capital financing plan to better account for the difference between actual expenses and projected costs for future capital projects. This approach aligns with best practices to account for the unexpected impacts to the timing of capital projects such as condition assessments identifying assets that may have more remaining useful life than expected or permitting delays to ensure a more accurate projection of cash needs for the near future. Staff conducts monthly cashflow projections on a project-by-project basis and revise these annual capital spending projections based on new asset data and current trends.

The District's Operations and Engineering staff annually develop the 10-year CIP based on prioritization of needed projects and potential replacement costs for large projects over the 10-year planning horizon. Potential future projects are identified by remaining useful asset life and consequence of failure; however, actual costs will vary based on condition assessments and better data. Recognizing that actual costs will differ from projections, the District's Finance staff and Engineering staff work collaboratively to develop a Capital Financing Plan which identifies funding amounts for future years based on historical trends of capital budgets to actuals and expectations of future project costs. The 10-year capital financing plan total of $434.1 million is utilized in the 10-year cashflow modeling to forecast revenue requirements in the future. Of the total $434.1 million, approximately $158 million (36%) is expected to be bond financed with the remaining $276.1 million (64%) being funded on a Pay-Go basis through a mix of operating and non-operating revenues.

The District has adopted reserves to mitigate potential revenue and expense volatility and reduce the risk of requiring unplanned, large rate adjustments. These funds have been designated for response to a range of risks, from meeting potential cashflow shortfalls due to the difference in timing between revenue and expenditures to the possibility of asset failures due to natural disaster. In particular, the Emergency Reserve enables the District to promptly address repairs to critical assets in the event of a natural disaster or facility failure. The target balance of the Emergency Reserve is equal to two percent of the replacement costs of the District's assets as outlined in current guidelines from the Federal Emergency Management Agency.

The District has historically maintained a strong financial position based upon conservative planning and budgeting, maintenance of adequate cash balances, and solid debt service coverage. A major objective of the LRFP is to ensure that this strong performance continues through timely and thoughtful financial analysis, budgeting, and planning. The District's debt obligations were recently reaffirmed at "AAA" by Fitch Ratings and remain "AAA" by Standard & Poor's, each with a "Stable" Rating Outlook.

In response to § 6.3.5.7.5:

Service Area

Moulton Niguel Water District has grown tremendously since its formation; initially formed by local ranchers to provide water service to eight accounts, the District now provides water, recycled water, and wastewater service to more than 170,000 customers within a 37 square mile service area covering portions of six cities in southern Orange County. The District service area is largely built-out and includes the cities of Aliso Viejo and Laguna Niguel along with portions of the cities of Laguna Hills, Mission Viejo, San Juan Capistrano, and Dana Point. In 2020 within the District's service area there were 67,091 homes, of which approximately 50 percent are single-family. While its operations have evolved along with the growth of its service area, the District's primary focus has remained largely unchanged: ensuring ratepayers have a reliable, sustainable, and economical water supply for the future.

Service Area Population

Population growth between 2000 and 2020 averaged 670 residents per year or an average annual growth rate of 0.41 percent. However, during the period 2004 to 2006 the annual average growth declined by 668 residents per year or 0.41 percent over those three years. As there are fewer and fewer areas to develop within the District's service area, population growth will primarily come from redevelopment and infill activities and is anticipated to be on average 2 percent over the next 10 years. Beginning in 2035, population is expected to decrease in the service area by approximately 1 percent through 2045. Forecast population for the District from 2020 to 2045 was provided by the Center for Demographic Research at California State University Fullerton (CDR). Table below shows the population projections in five-year increments to the year 2045.

Population - Current and Projected

Population Served	2020	2025	2030	2035	2040	2045
	170,236	172,134	174,202	174,241	174,169	172,802
Notes: Data provided by Center for Demographics.						

Table 24: MNWD Current and Future Projected Population

System Vulnerabilities

With increased temperatures and higher intensity storms in recent years, the importance of identifying and mitigating inflow and infiltration (I&I) in wastewater collection systems has been brought to the forefront of the water and wastewater industries. As part of its ongoing efforts to identify and mitigate vulnerabilities in the wastewater collection systems, the District has implemented several strategies to evaluate potential I&I issues within its collections system. The intent behind these components is to take a focused and strategic approach to identify locations prone to I&I, review and determine the cause of I&I, and implement improvements to mitigate or eliminate identified I&I into the collection system. These strategies include:

1. Utilize the flow data for the identified wastewater sub-basins within the District's service area to determine areas that are experiencing higher peaking factors during rain events;
2. Identify areas within the collection system that may be subject to I&I, such as sewer mains that run parallel to or cross existing creeks;
3. Perform video inspection of higher risk sewer mains, including inspections of sewer siphons;
4. Revise procedure for annual manhole condition assessments to incorporate location of manholes relative to street drainage systems, i.e. ribbon gutters or curb & gutter;
5. Coordinate with the responsible city within the identified sub-basin to identify designated pool constructions that were connected to the sewer system.

Since 2019, the District has deployed flow measurement devices and rain gauges to continuously refine the targeted investigation of I&I within the collection systems. This information, in combination with CCTV and manhole assessment data, is incorporated into the collection system rehabilitation prioritization shown in the maps included as part of the response to Section 6.3.5.7.3.

Overall, the effect of climate change in the western United States and more specifically the Orange County region has shown itself in increased temperatures and less overall rainfall while occurring in increased intensity. This has resulted in significant water conservation over the past several years, which has led to corresponding decreases in wastewater flows. Although increases in the overall capacity of the wastewater collection system have been realized because of the reduction in wastewater flows, other challenges have manifested themselves, particularly to the lift stations. As the District completes the comprehensive rehabilitation of each facility in the wastewater system, particular effort is expended to 'right-size' the infrastructure to the current and future demands of the facility. Each rehabilitation of these facilities is prioritized based on age, condition, and overall risk.

SCWD

The SCWD budget can be found here:
https://cms9files.revize.com/scoastwaterdist/SCWD_FY22_BudgetBook_final.pdf

The Appendix to the budget contains the breakdown in spending for SCWD's facilities. Page 24 of the SCWD budget includes the breakdown of costs for CIP spending.

SOCWA

SOCWA prioritizes capital spending based on remaining useful life (RUL) for individual components of the facility with direction from the SOCWA Engineering Committee. The RTP and CTP facility RUL breakdown is included in Appendix B. Large Capital Funds held on Account continued to be spent at RTP and CTP. Close of Fiscal Year (6/30/2022) with expected $11.86 million in capital construction currently underway, including work for:

- CTP Aeration Diffusers Construction
- CTP Export Sludge Mitigation
- CTP Personnel Building Reconstruction
- CTP Fiber Installation to Alicia Parkway
- CTP Foul Air Scrubber Replacement Project
- RTP MCC A, C, G, & H Construction
- RTP Aeration Diffusers Construction
- RTP AWT #2 Reconstruction • Effluent Transmission Main (ETM) Air Valves D and E
- Effluent Transmission Main (ETM) Trail Bridge Crossing Protection
- Aliso Creek Ocean Outfall (ACOO) Internal Seal Replacement
- Continue to work on SOCWA's Large Capital Improvement Reporting
- Continue quarterly Capital Program Invoicing to collect funding only when due to be expended

The Large Capital Improvements budget is submitted for approval of the Board with one year of additional detail prepared for future planning purposes through Fiscal Year 2023-2024 (2 Years). The CIP and SOCWA budget can be found here: http://www.socwa.com/wp-content/uploads/2022/07/FY-2022-23-BOD-Approved-Budget-1.pdf

Part 4: Findings

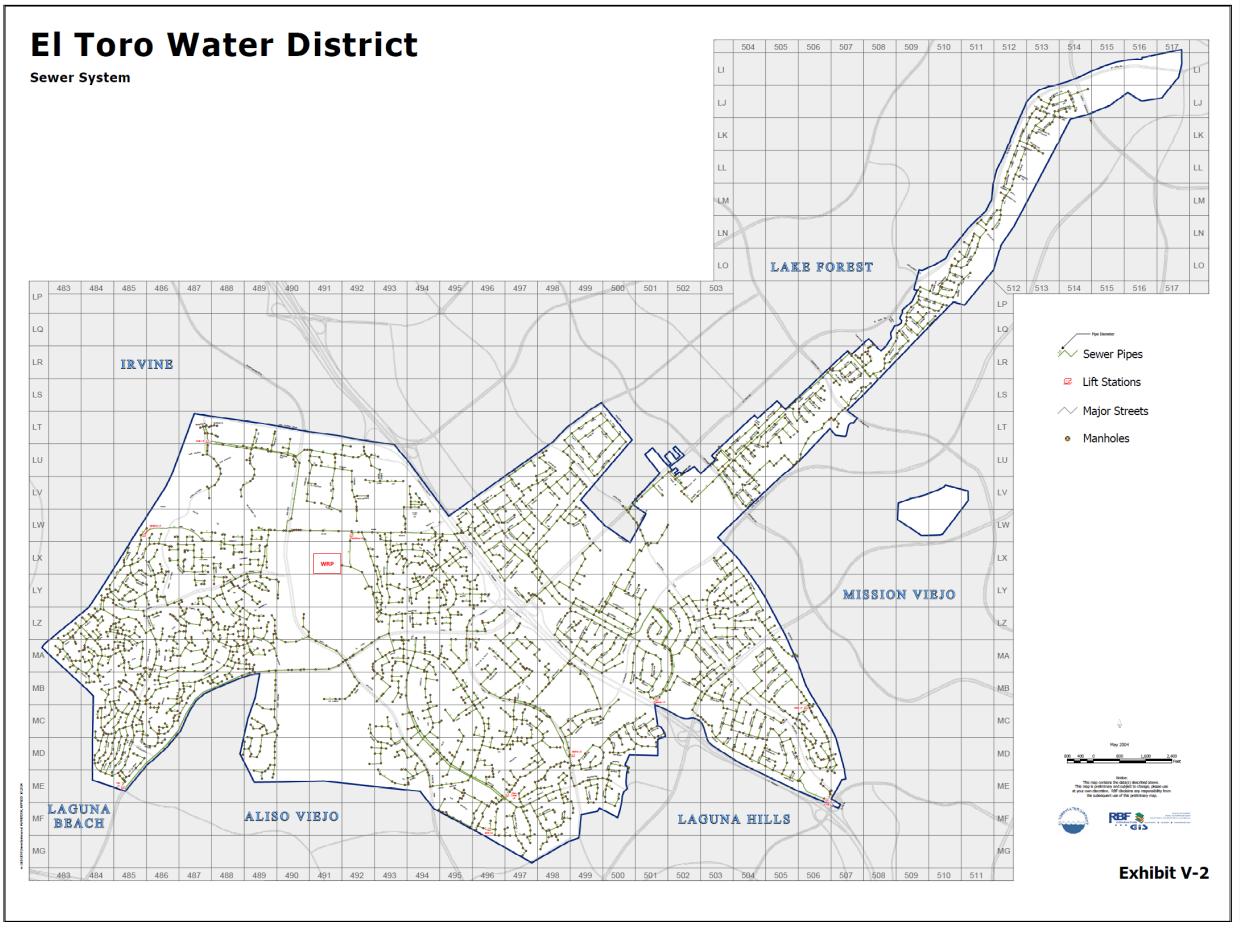
All agencies are in various stages of their asset management program implementations. Agencies are properly planning, maintaining, and replacing small capital and large capital in conformance with these NPDES requirements. Through inspections conducted by SDRWQCB staff after the adoption of the NPDES permit, there were no deficiencies found. This concludes that agencies are taking proper care and maintenance of their facilities as required by the NPDES permit

Appendices

Included in this section are appendices to provide additional details based on narratives in the main body of this report.

Appendix A - Overview of ACOO Discharge Facility Infrastructure in Compliance with § 6.3.5.7.3.

ETWD Master Plan Maps:



El Toro Water District

Sewer Model

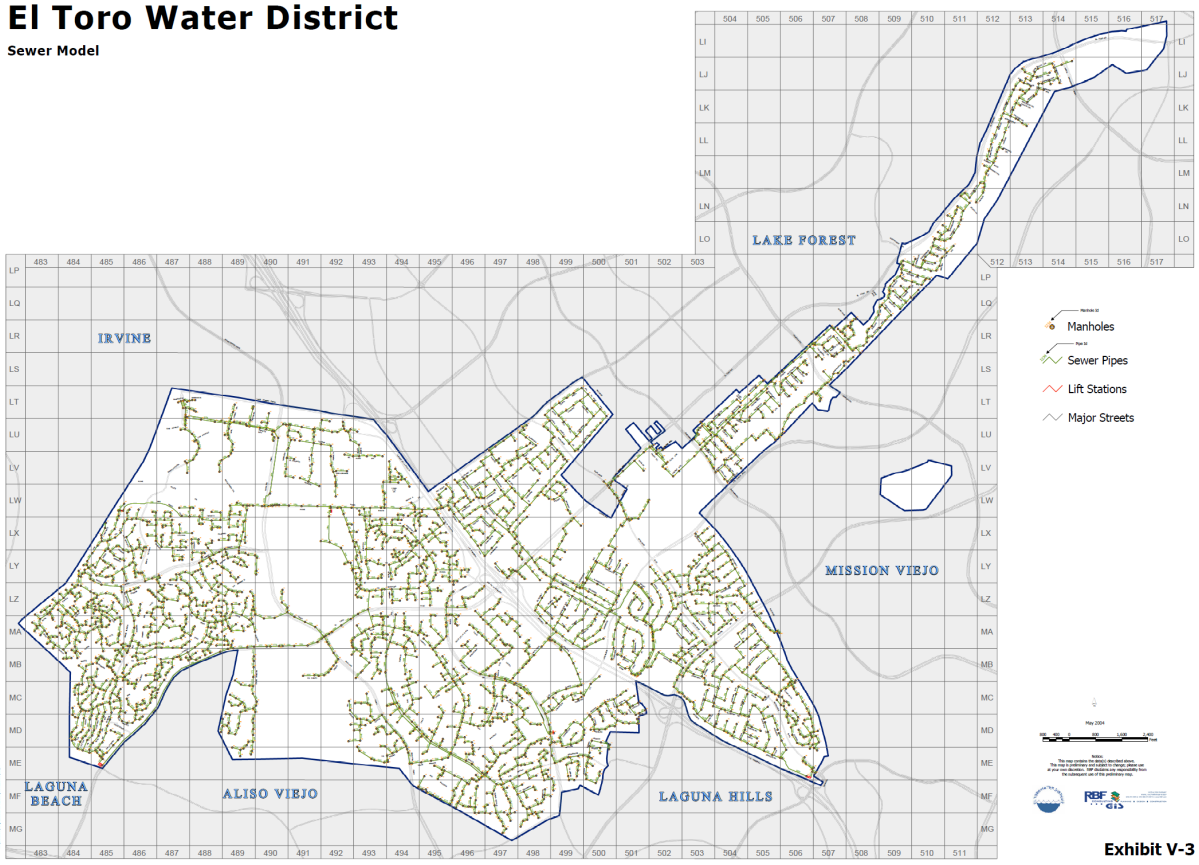
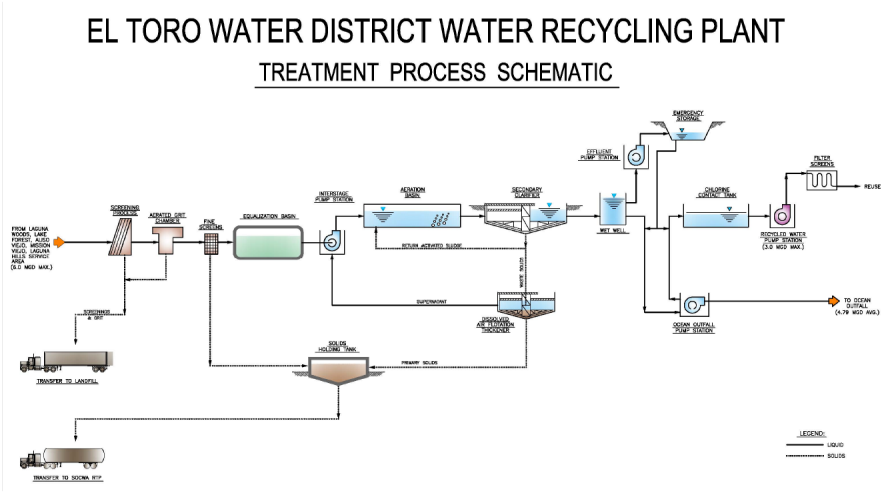


Exhibit V-3

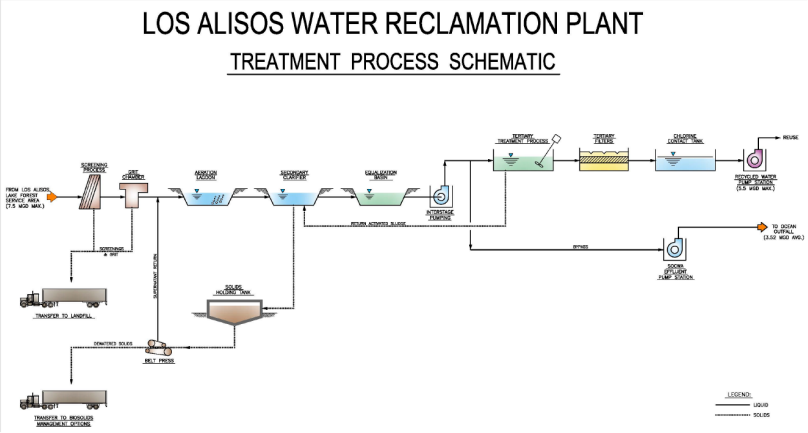
Flow Schematic 4 – El Toro Water District Water Recycling Plant



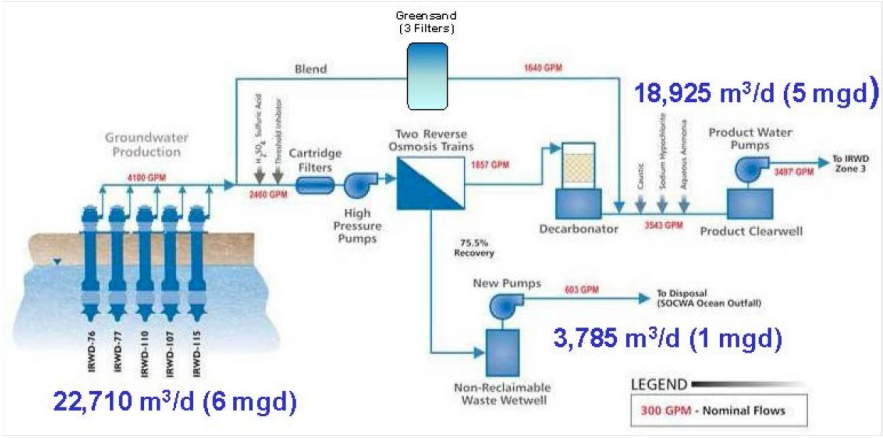
IRWD

The following treatment plant schematics are included below for the LAWRP, IDP, and SGU, which are contained in the NPDES permit, Attachment C. The IRWD sewer collections system map is also included in this section below.

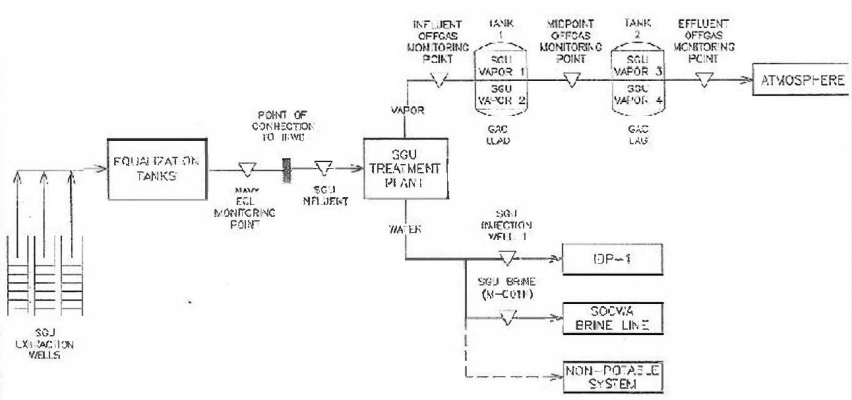
Flow Schematic 3 – Los Alisos Water Reclamation Plant

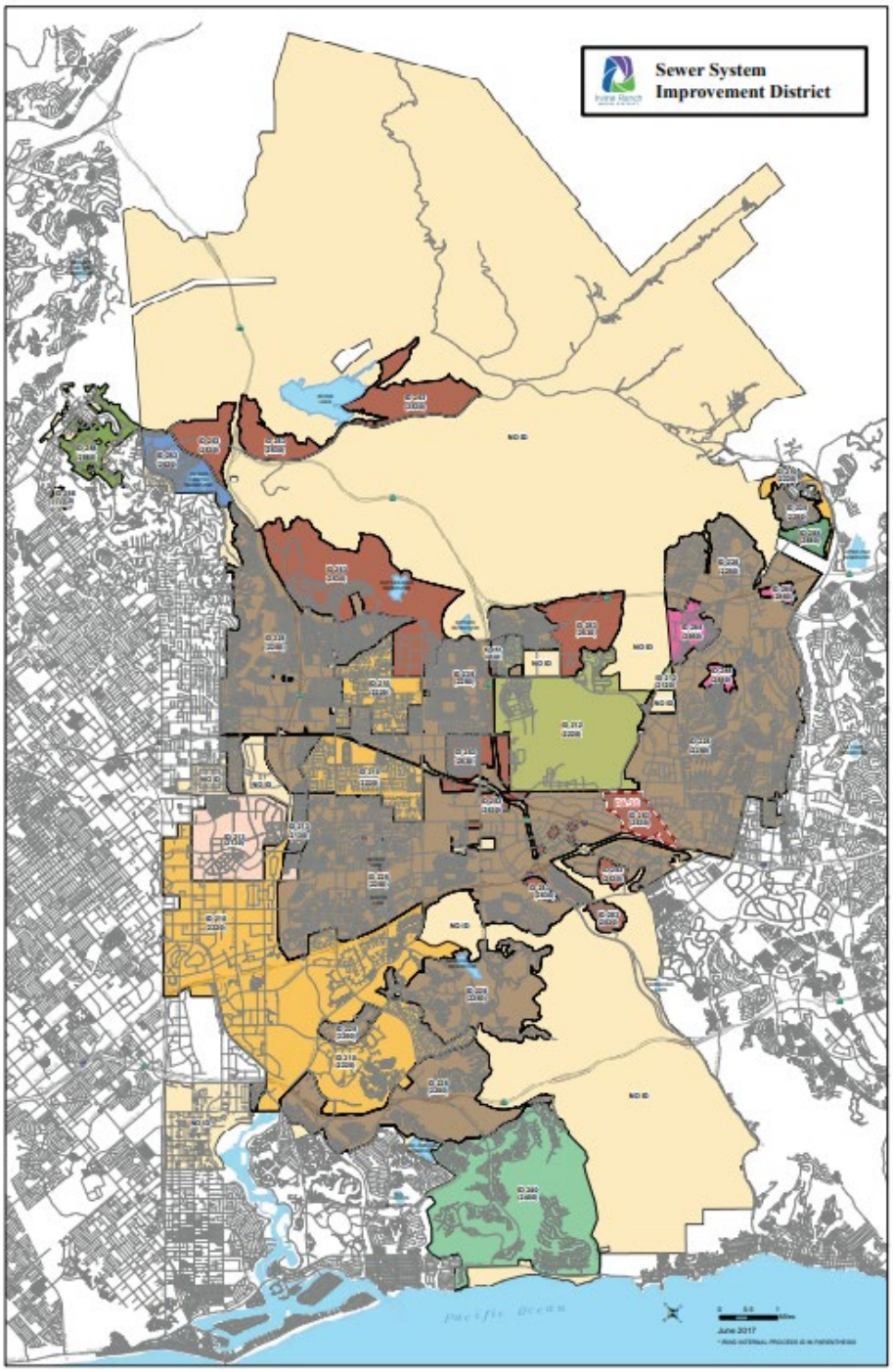


Flow Schematic 5 – Irvine Desalter Project Portable Water Treatment System



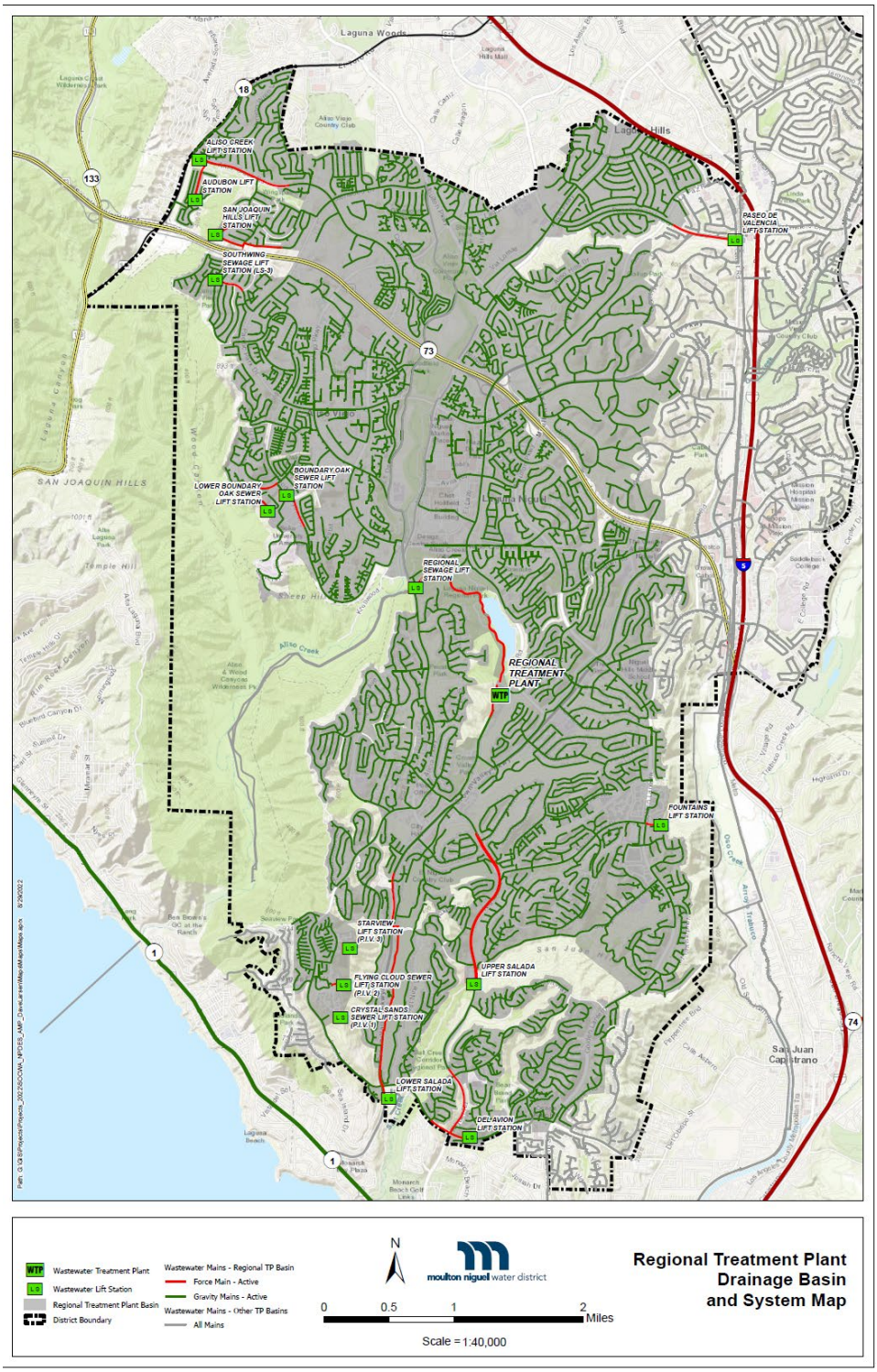
Flow Schematic 6 – Irvine Desalter Project Shallow Groundwater Unit

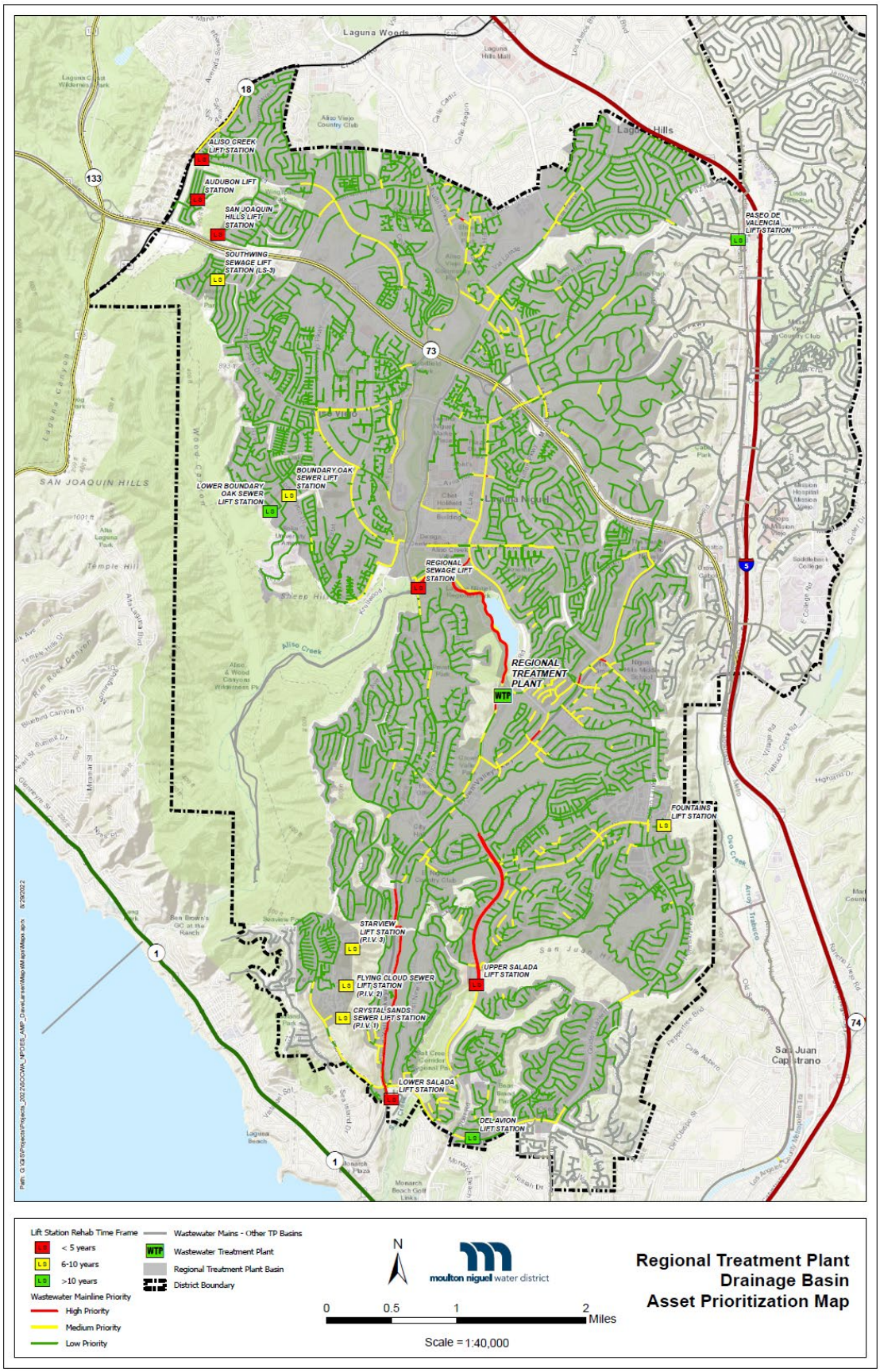



Sewer System
Improvement District
pacific ocean
June 2017

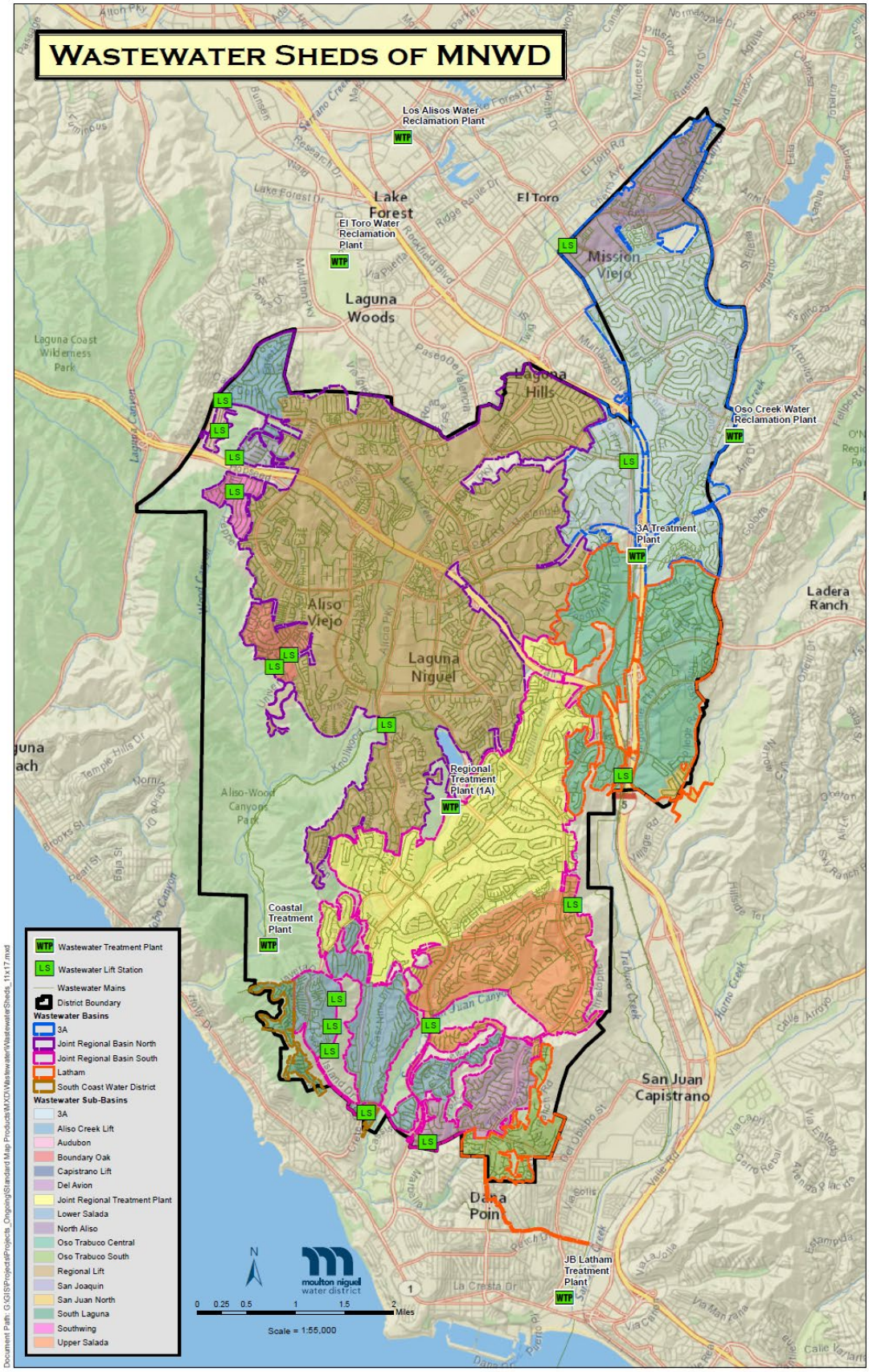
MNWD

The Regional Treatment Plant's Drainage Basin System map, asset priortization map, and wastewater sheds are included below.





SOCWA
South Orange County Wastewater Authority

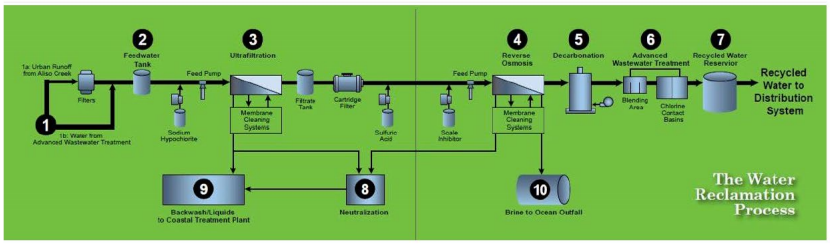


SOCWA
South Orange County Wastewater Authority

SCWD

SCWD's facility descriptions and maps are articulated in the SOCWA map below and can be found in the SJCOO NPDES permit. The Sewer Management Plan and supplemental materials can be found here:
https://www.scwd.org/your_water/wastewater_sewage/sewer_management_plan.php#outer-93

Flow Schematic 7 - South Coast Water District Aliso Creek Water Reclamation Facility

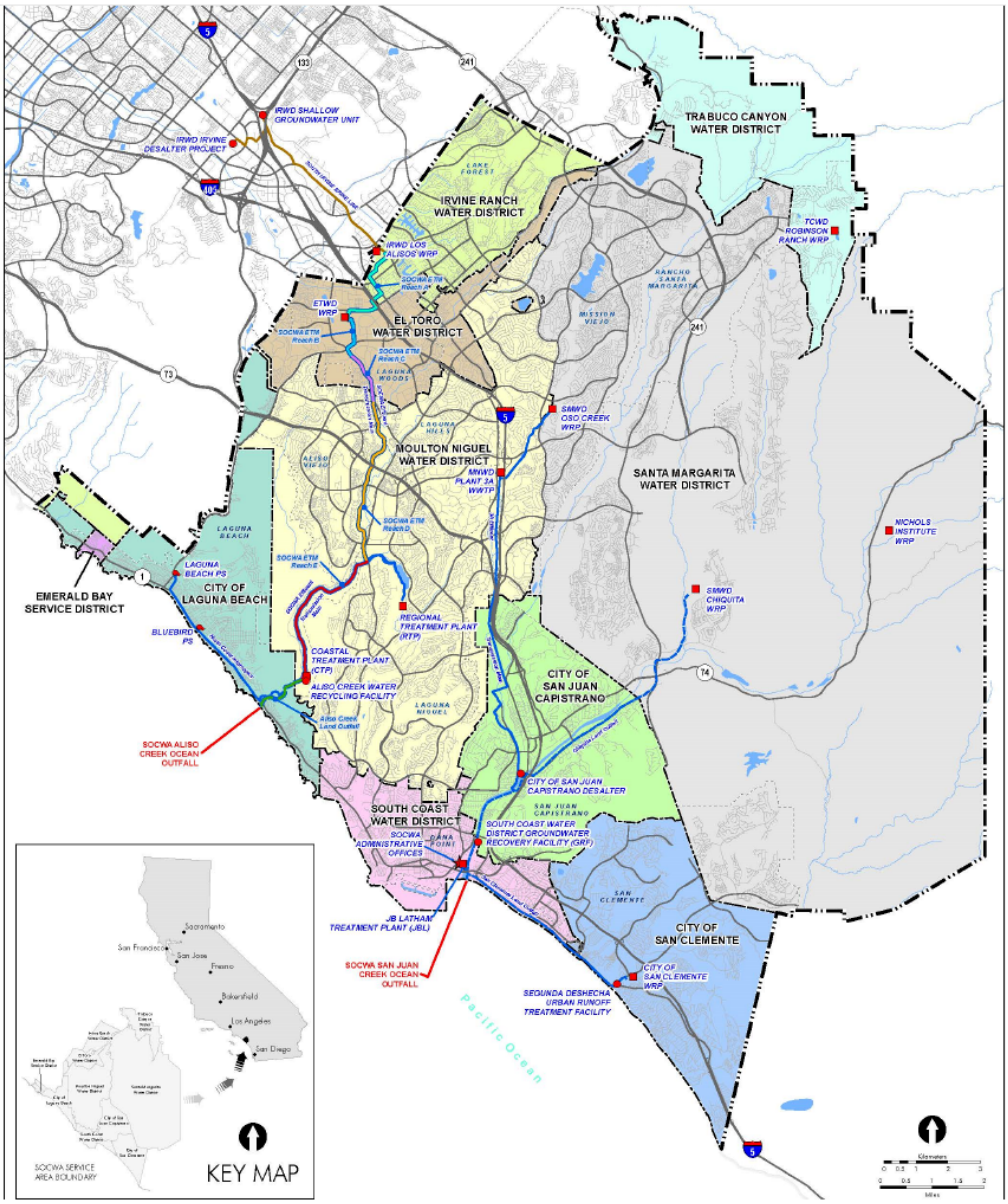


SOCWA

Please note that SOCWA does not oversee or maintain any collection systems within the sewersheds to the JB Latham Treatment Plant in compliance with Statewide Sanitary Sewer System Waste Discharge Requirements. Please see the map below of the SOCWA service area below, which is also included in the SJCOO NPDES, Attachment B-1.

ATTACHMENT B – MAP

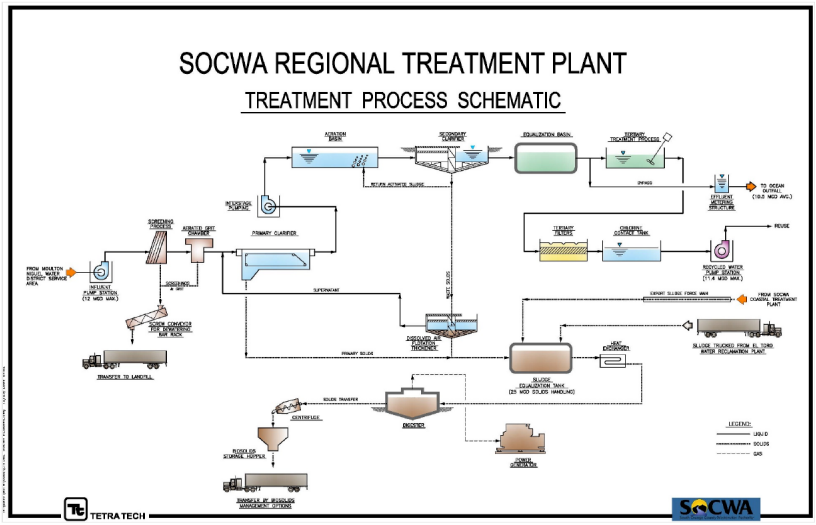
Map 1 - SOCWA Facilities[3] and Service Area



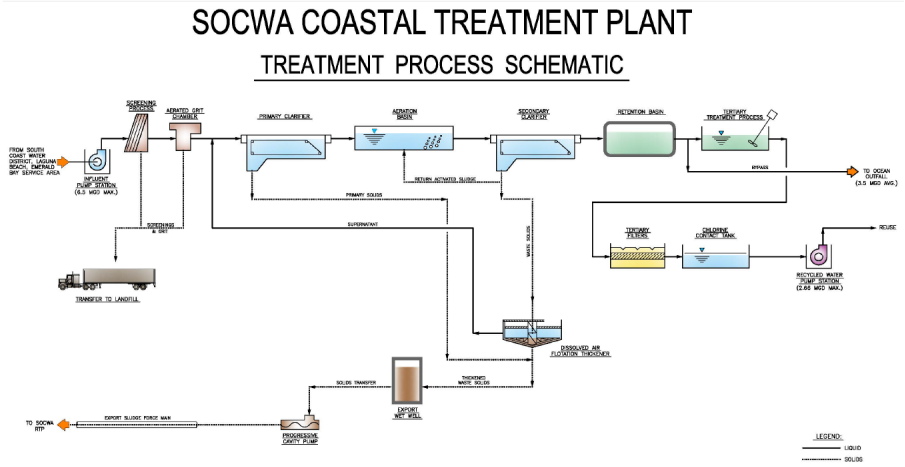
[3] The South Orange County Wastewater Authority (SOCWA) Regional Treatment Plant (SOCWA RTP), SOCWA Coastal Treatment Plant (SOCWA CTP), Irvine Ranch Water District Los Alisos Water Reclamation Plant (WRP), El Toro Water District WRP, Irvine Desalter Project Portable Water Treatment System (PWTS), Irvine Desalter Project Shallow Groundwater Unit (SGU), South Coast Water District Aliso Creek Water Reclamation Facility (WRF), the associated land outfalls, and Aliso Creek Ocean Outfall (ACOO).

ATTACHMENT C – FLOW SCHEMATICS

Flow Schematic 1 – SOCWA Regional Treatment Plant



Flow Schematic 2 – SOCWA Coastal Treatment Plant



Appendix B – Detail of Asset Spending and RUL with § 6.3.5.7.5.

SOCWA

Regional Treatment Plant – Please note that due to the over 1000 assets that are being tracked, the table below provides a snapshot of the remaining useful life. The full tables are available upon request.

ItemNo.	Key No.	Equipment Tag #	New tag # (2021)	Area	Asset Category	Size/Type Description	Quantity	Start-up Date (Year) 2004	Start-up Date (Year) 2019	Useful Life (Years)	Replace Date (Year) 2004	Replace Date (Year) 2019	Remaining life in 2004	Remaining life in 2019	Refurb Date (Year)	Estimated Replacement Cost	Estimated Refurbishment Cost
183	A-AWT2-1	B83122	17B83122	Advanced Treatment / AWT No.2	AWT No.2 Low Pressure Blower #1	250/390 scfm flow range @ 190/210 IW;C;regenerative type	1	1997	1997	15	2012	2012	8	-7	2019	$ 21,000.00	$ 7,000.00
183	A-AWT2-1	B83123	17B83123	Advanced Treatment / AWT No.2	AWT No.2 Low Pressure Blower #2	250/390 scfm flow range @ 190/210 IW;C;regenerative type	1	1997	2011	15	2012	2026	8	7	2019	$ 21,000.00	$ 7,000.00
184	A-AWT2-2			Advanced Treatment / AWT No.2	AWT No.2 Surge Tank Air Compressor	15 scfm @ 150 psi reciprocating air compressor	1	1997	1997	15	2012	2012	8	-7		$ 6,000.00	
185	A-AWT2-3	B73122	17B73122	Advanced Treatment / AWT No.2	AWT No.2 High Pressure Air Compressor	9.8 scfm @ 80 psi reciprocating air compressor.	1	1997	1997	15	2012	2012	8	-7		$ 3,800.00	
311	A-EN-1	CP41461	17CP41461	Energy	Air Compressor Equipment	33 scfm @ 250 psi; reciprocating type, starting air comoressor.	1	1983	2015	15	1998	2030	-6	11		$ 22,540.00	
311	A-EN-1	CP41462	17CP41462	Energy	Air Compressor Equipment	33 scfm @ 250 psi; reciprocating type, starting air comoressor.	1	1983	2015	15	1998	2030	-6	11		$ 22,540.00	
318	A-EN-4	F40161	17F40161	Energy	Engine Room Exhaust Fan 1		1	1983	1983	15	1998	1998	-6	-21		$ 55,800.00	
318	A-EN-4	F40162	17F40162	Energy	Engine Room Exhaust Fan 2		1	1983	1983	15	1998	1998	-6	-21		$ 55,800.00	
318	A-EN-4	F40163	17F40163	Energy	Engine Room Exhaust Fan 3		1	1983	1983	15	1998	1998	-6	-21		$ 55,800.00	
319	A-EN-5	F40164	17F40164	Energy	Engine Room Exhaust Fan 4		1	1983	1983	10	1993	1993	-11	-26		$ 25,600.00	
319	A-EN-5	F40165	17F40165	Energy	Engine Room Exhaust Fan 5		1	1983	1983	10	1993	1993	-11	-26		$ 25,600.00	
320	A-EN-6	AHU41361	17AHU41361	Energy	Ventilation Room Air Handling Unit		1	1984	1984	15	1999	1999	-6	-20		$ 15,910.00	
321	A-EN-7	F30330	17F30330	Energy	Ventilation Room Blower Room Exhaust Fan		1	1983	1983	10	1993	1993	-11	-26		$ 18,450.00	
322	A-EN-8	F41362	17F41362	Energy	Ventilation Room Transfer Fan		1	1983	1983	10	1993	1993	-11	-26		$ 8,340.00	
323	A-EN-9	F41301	17F41301	Energy	Generator Room Supply Fan 1		1	1983	1983	10	1993	1993	-11	-26		$ 60,400.00	
323	A-EN-9	F41302	17F41302	Energy	Generator Room Supply Fan 2		1	1983	1983	10	1993	1993	-11	-26		$ 60,400.00	
291	A-OC-1	F41511	17F41511	Odor Control	ORT Transfer Fan from Solids Dewatering - Size 1	3000 scfm-inline centrifugalfan	1	1998	1998	10	2008	2008	4	-11		$ 10,120.00	
291	A-OC-1	F41512	17F41512	Odor Control	ORT Transfer Fan from Solids Dewatering - Size 1	3000 scfm-inline centrifugalfan	1	1998	1998	10	2008	2008	4	-11		$ 10,120.00	
292	A-OC-2	F41513	17F41513	Odor Control	ORT Transfer Fan from Solids Dewatering - Size 2	4000 scfm-inline centrifugalfan	1	1998	1998	10	2008	2008	4	-11		$ 13,400.00	
292	A-OC-2	F41514	17F41514	Odor Control	ORT Transfer Fan from Solids Dewatering - Size 2	4000 scfm-inline centrifugalfan	1	1998	1998	10	2008	2008	4	-11		$ 13,400.00	
293	A-OC-3	F41516	17F41516	OdorContml	ORT Transfer Fan from Solids Dewatering - Size 3	8200 scfm-inline centrifugalfan	1	1998	1998	10	2008	2008	4	-11		$ 28,580.00	
293	A-OC-3	F41517	17F41517	OdorContml	ORT Transfer Fan from Solids Dewatering - Size 3	8200 scfm-inline centrifugalfan	1	1998	1998	10	2008	2008	4	-11		$ 28,580.00	

Coastal Treatment Plant – Similar to RTP above, CTP has over 600 assets that are being tracked. The table below provides a snapshot of the remaining useful life from a limited number of assets. The full tables are available upon request.

Item No.	Key No.	Equipment Tag #	New tag # (2021)	Area	Asset Category	Discussion	Size/Type Description	Quantity	Start-up Date (Year) 2004	Start-up Date (Year) 2019	Useful Life (Years)	Replace Date (Year) 2004	Replace Date (Year) 2019	Remaining life in 2004	Remaining life in 2019	Refurb Date (Year)	Estimated Replacement Cost	Estimated Refurbishment Cost
70	A,BEC-3	B31001	16B31001	Secondary Treatment	Multistage Blowers	Aeration Blower #1	Centrifugal,Gardner Denver; with air filter,Siemens TEFC; Electric Motor; 150HP; 3 ph;3600 rpm;Class F insulation-located in Blower Building;Designated Blower 1,2&3 Blower 3 has Oil Pump motor; US Motors;FVT Type;TEFC; 3 ph, 3625 rpm, 460V,Class F insulation	1	2004	2004	20	2024	2024	20	5	2011	$623,690	$130,898
70	A,BEC-3	B31002	16B31002	Secondary Treatment	Multistage Blowers	Aeration Blower #2	Centrifugal,Gardner Denver; with air filter,Siemens TEFC; Electric Motor; 150HP; 3 ph;3600 rpm;Class F insulation-located in Blower Building;Designated Blower 1,2&3 Blower 3 has Oil Pump motor; US Motors;FVT Type;TEFC; 3 ph, 3625 rpm, 460V,Class F insulation	1	2004	2004	20	2024	2024	20	5	2011	$623,690	$130,898
70	A,BEC-3	B31003	16B31003	Secondary Treatment	Multistage Blowers	Aeration Blower #3	Centrifugal,Gardner Denver; with air filter,Siemens TEFC; Electric Motor; 150HP; 3 ph;3600 rpm;Class F insulation-located in Blower Building;Designated Blower 1,2&3 Blower 3 has Oil Pump motor; US Motors;FVT Type;TEFC; 3 ph, 3625 rpm, 460V,Class F insulation	1	2004	2004	20	2024	2024	20	5	2011	$623,690	$130,898
187	A,SOL-1	CP32101	15CP32101	Solids	DAF #1 Compressor / North	Size Unknown. Per RD, this ar	Dual-Head Reciprocating Compressor; Curtis. Motor - Baldor; 1.5 HP, 3 ph; 1760 rpm; located in DAF Thickener Area-designated Compressor -- N&S	1	2004	2004	15	2019	2019	15	0		$16,560	
187	A,SOL-1	CP32102	15CP32102	Solids	DAF #2 Compressor / South	Size Unknown. Per RD, this ar	Dual-Head Reciprocating Compressor; Curtis. Motor - Baldor; 1.5 HP, 3 ph; 1760 rpm; located in DAF Thickener Area-designated Compressor -- N&S	1	2004	2004	15	2019	2019	15	0		$16,560	
216	A-BB2-1	CP31000	15CP31000	Blower Building No.2	Instrument Air System	Size Unknown	Includes: 2R: eciprocating type Compressors;Ingersoll-Rand;Baldor;5.0 HP;3 ph; 1735 rpm; 460V;Class F insulation - designated N&S Compressors-for AWT Instrument Air	1	1995	1995	10	1995	1995	-9	-24		$84,060	
217	A-BB2-2	CP25103	15CP25103	Blower Building No.2	Service Air Compressor	Size Unknown	Rotary Screw Compressor; Sullair;30 HP;3 ph motor, 1755 rpm;460V;Class F insulation	1	1995	1995	10	1995	1995	-9	-24		$5,310	
218	A-BB2-3	B25101	15B25101	Blower Building No.2	Plant Blowers	Per RD,these blowers are not used very often;they are used for channeler.	Reciprocating;Gaty-Fuller Co.TCE type US Motors;7.5 HP;3 ph;1735 rpm; 460V; Class F insulation -designated N&S Blowers for plant air.	1	1985	1985	15	2000	2000	-4	-19	2014	$28,040	$7,010
218	A-BB2-3	B25102	15B25102	Blower Building No.2	Plant Blowers	Per RD,these blowers are not used very often;they are used for channeler.	Reciprocating;Gaty-Fuller Co.TCE type US Motors;7.5 HP;3 ph;1735 rpm; 460V; Class F insulation -designated N&S Blowers for plant air.	1	1985	1985	15	2000	2000	-4	-19	2014	$28,040	$7,010
209	A-OC-2 / P11100	P11100	15F11100	Odor Control	Odor Control Scrubber Fans	Assume 2002 start-up date. Per RD,the odor control system is about 3 yrs old,and is in good condition.	UNK	1	2002	2016	15	2017	2031	13	12		$10,020	
NEW	P01110	P01110	15P01110	Bldg.18	Fan	DP3 Exhaust Fan	assumed with scrubber project	1	2001	2001	15	2016	2016	12	-3		$10,020	
NEW	P11100	P11100	15F11100	Bldg 1	Fan	Odor Scrubber Supply Fan / In	assumed with scrubber project	1	2001	2001	15	2016	2016	12	-3		$10,020	
NEW	F11304	F11304	15F11304	Bldg 1	Fan	Screenings/Grit Room Fan	assumed with scrubber project	1	2001	2001	15	2016	2016	12	-3		$10,020	

Capital Program Year-End Budget Summary

Fiscal Year 2021-2022

September 8, 2022

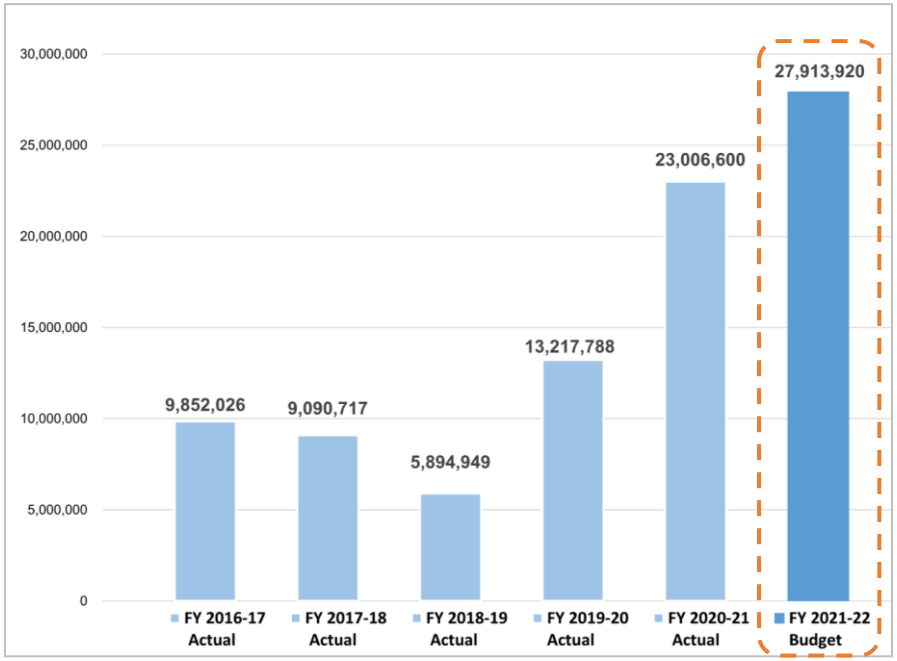
South Orange County Wastewater Authority

SOCWA Budget Basics

BUDGET	• Set FY Budget in May/June, Board approves • Budget allocated by PC and project
COLLECT	• Quarterly collections from PC members • Collection amount based on forecast of funds needed per project • Uncollected budget is “forfeited”
SPEND	• Issue PO for each contractor/consultant and project • Spending based on invoices and accruals • Unspent collections carry over to next year

FY 2021/22 Budget Recap

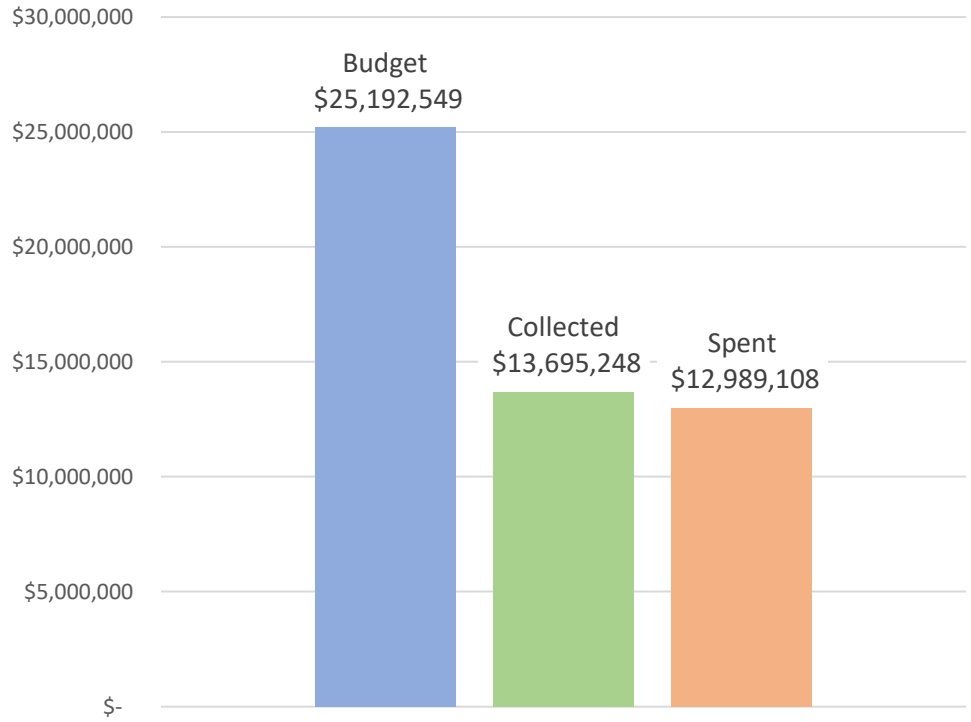
- Large Capital Budget - $25.2 MM
  - PC 2 - $8.15 MM
  - PC 15 - $8.46 MM
  - PC 17 - $6.85 MM
  - PC 21 - $1.5 MM
  - PC 24 - $0.22 MM
- Non-Capital - $0.7 MM
- Small Capital - $2.1 MM



South Orange County Wastewater Authority

Budget vs. Actuals*

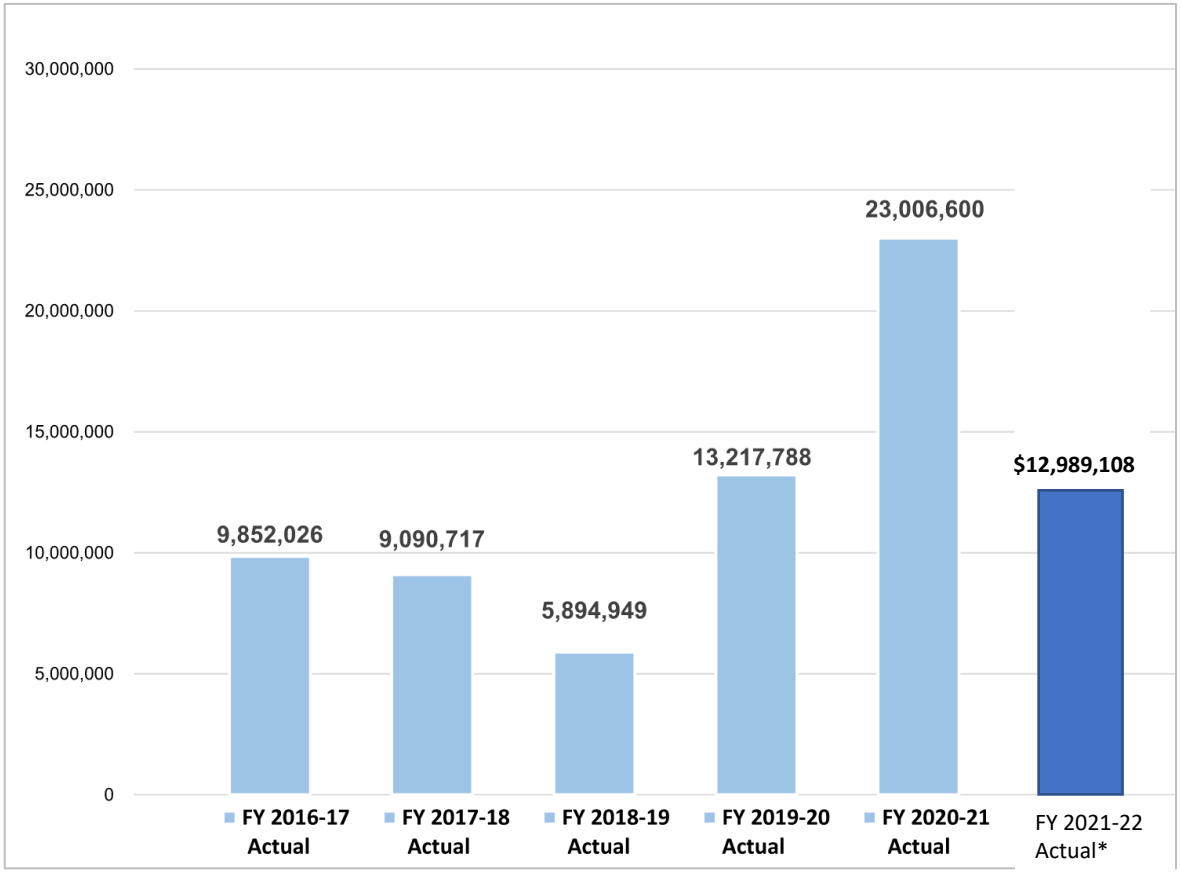
- Large Cap Budget: $25.2 MM
- Collected: $13.7 MM
  - 54% of budget
- Spent: $13.0 MM
  - 95% of collected
  - 52% of budget



*Actual values as of 8/18/22. Values are preliminary until Use Audit is completed.

South Orange County Wastewater Authority

Historical Actuals

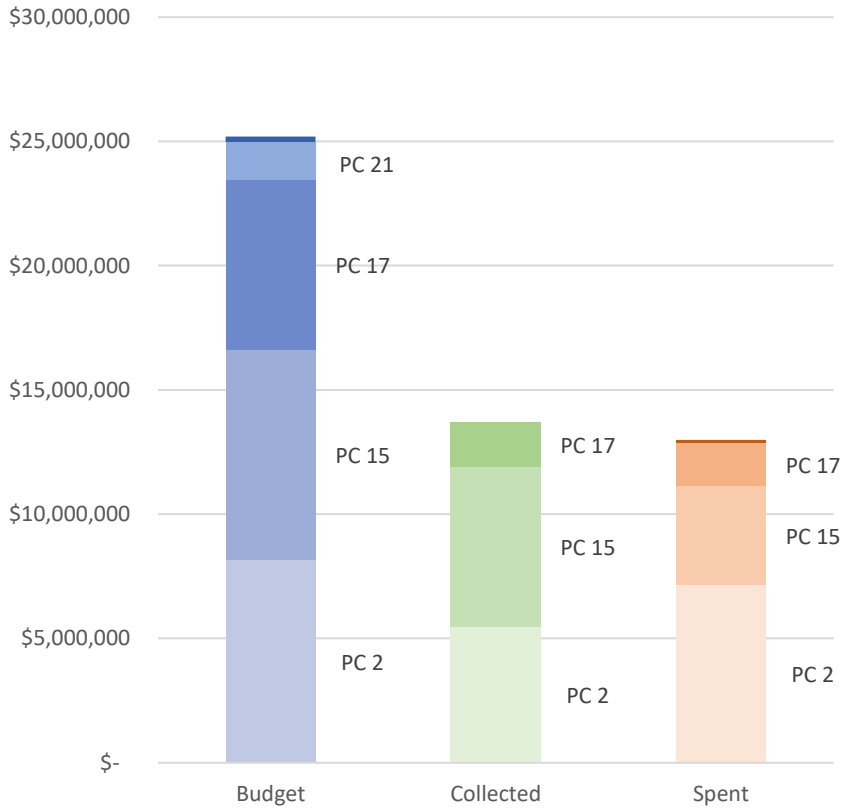


*Actual values as of 8/18/22. Values are preliminary until Use Audit is completed.

South Orange County Wastewater Authority

Budget vs. Actuals by PC

PC	Budget	Collected	Spent	% Collected
PC 2	8,153,937	5,452,000	7,136,820	67%
PC 15	8,464,653	6,454,999	3,950,237	76%
PC 17	6,851,959	1,788,249	1,768,441	26%
PC 21	1,502,000	-	95,127	0%
PC 24	220,000	-	1,525	0%
PC 5	-	-	7,904	0%



*Actual values as of 8/18/22. Values are preliminary until Use Audit is completed.

South Orange County Wastewater Authority

Where Was Budget Spent

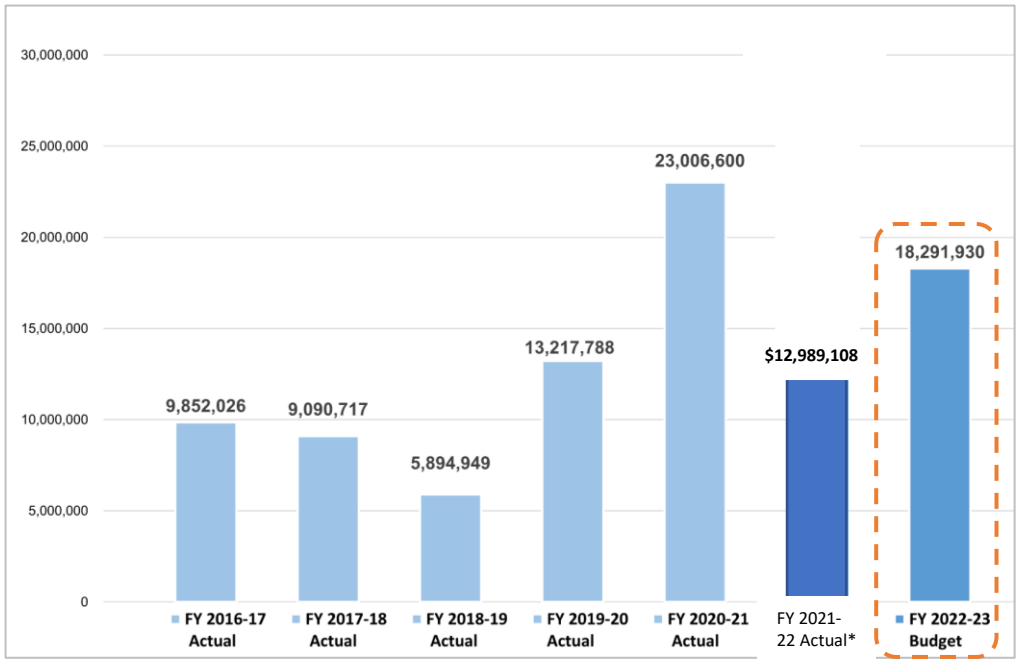
- $6.98 MM = JBL Package B Construction
- $2.83 MM = CTP Export Sludge Construction
- $1.32 MM = RTP Aeration Diffusers Construction
- $1.00 MM = CTP Facility Improvements Construction
- $0.86 MM =
  - RTP AWT No. 2 Design
  - RTP MCCs Design
  - ETM Trail Bridge Crossing Permitting
  - CTP Aeration Diffusers Design

Uncollected Budget

- $2.6 MM = RTP AWT No. 2 Reconstruction
- $1.6 MM = JBL Energy Building Upgrades Construction
- $850 k = ETM Air Valve Replacements
- $750 k = RTP Aeration System Upgrades Design
- $380 k = RTP SCADA Upgrades
- $375 k = JBL Effluent Pump Station Upgrades
- $290 k = RTP Cogen Engine Modifications
- $250 k = RTP Effluent Pond Gates

Looking Forward

- FY 2022/23 Budget = $18.3 MM
- Ongoing construction @ JBL and RTP
- Unlikely to spend the full budget
  - Staffing & resources
  - Rebuilding project pipeline
- Plan to revise budget outlook in January
- Budgeting is hard, but we can do better



South Orange County Wastewater Authority

Questions?

JB Latham Package B Project

Construction Update

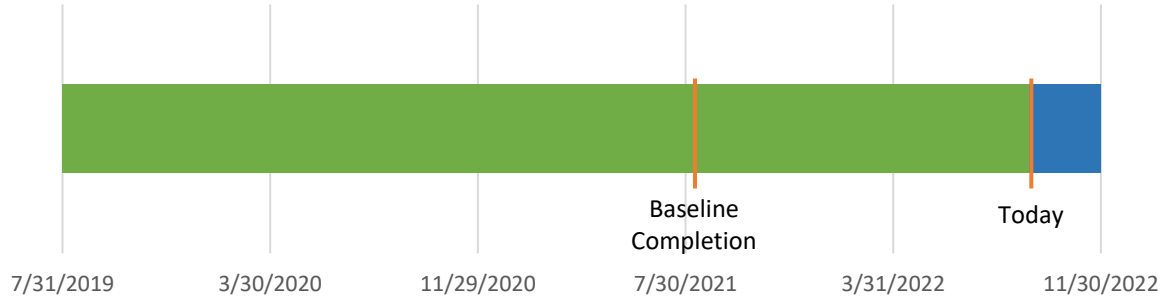
September 8, 2022

South Orange County Wastewater Authority

Construction Schedule Update

Schedule Completion	**95%**
Started	July 2019
Baseline Schedule Completion	August 2021
Estimated Substantial Completion	November 2022*

**Pending boiler delivery*



South Orange County Wastewater Authority

Schedule and Budget Update

Contractor Budget Completion	89%
Original Contract Value	$17,325,000
Contractor Change Orders	$1,803,612
Removed Scope	-$911,574
Revised Contract Value	$18,217,038
Invoiced	$16,171,947

Total Project Budget Completion	87%
Original Contracts	$19,617,636
Contingency	$2,302,248
Invoiced	$19,213,824
Contingency Used	$1,840,368
Contract Remaining	$2,963,853
Contingency Remaining	$461,880

Schedule as of August update
Budget as of Invoice 36 and Change Order 60

South Orange County Wastewater Authority

Construction Status Update

Scope	Status	Est. % Complete
Digester 4 Improvements	Completed	100%
Digesters 1 & 3 Improvements	Completed	100%
MCC Upgrades	Completed	100%
Fiber Loop	Startup	99%
Plant 1 and 2 Primary and Secondary Basins Rehabilitations	Punchlist	99%
Safety Improvements (Liquids and Solids)	Ongoing	95%
DAFT & TWAS Upgrades	Ongoing	80%
Digester 2 Improvements	Ongoing	80%
Laboratory Demolition	Ongoing	10%
Boiler System & Building 65 Roof	Ongoing	10%
Effluent Pump Station Improvements	Removed	
Energy Building Structural Improvements	Removed	

DAFT and TWAS Area

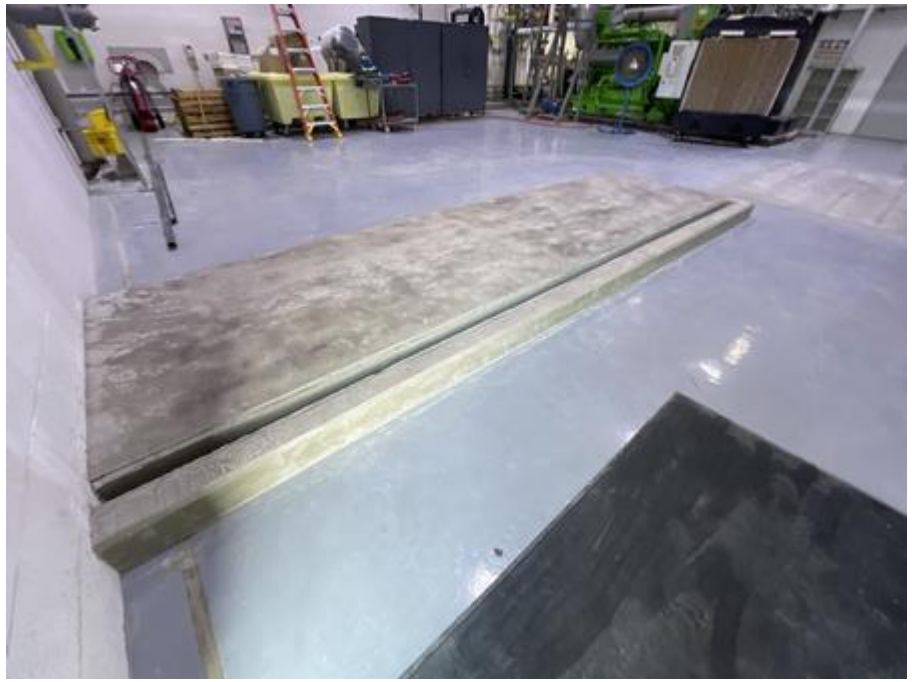
- Completed
  - TWAS Pump Station
  - DAFT 2
  - DAFT 1 mechanical equipment
- Still to complete
  - DAFT 1 cover
  - Compressor and pressurization system
  - Electrical
  - Startup

Digester 2

- Completed
  - Mixing pump
- Still to complete
  - Piping and valves
  - Startup

Boiler System and Building 65 Roof

- Completed
  - Boiler ordered
  - Boiler pad poured
- Still to complete
  - Boiler delivery, installation, startup
  - Demo old boiler in Building 65
  - Replace Building 65 roof



Project Outlook

- Contractor to continue with Digester 2, DAFT 1 and Boiler System Improvements
  - Boiler is driving the critical path
- Substantial completion estimated for end of November
- Deductive Change Orders agreed upon for the Effluent Pump Station and Energy Building Improvements
- Time extension and cost analysis are under review

Questions?

JB Latham Package B Project

Liquids Contingency Increase

September 8, 2022

South Orange County Wastewater Authority

Contingency History

- Original Contingency – 8% construction contract value ($17,325,000)
- Increase 1 – Solids (July 2021)
- Increase 2 – Liquids (October 2021)
- Increase 3 – Solids (April 2022)
- Increase 4 – Liquids, Solids and Common (June 2022)

Area	Original Contingency	Increase 1	Increase 2	Increase 3	Increase 4	Revised Contingency
Solids (3287-000)	$672,400	$985,000		$200,000	$250,000	$2,107,400
Liquids (3220-000)	$616,800		$300,000		$415,000	$1,331,800
Common (3231-000)	$96,800				$25,000	$121,800
Total	**$1,386,000**	**$985,000**	**$300,000**	**$200,000**	**$690,000**	**$3,561,000**

South Orange County Wastewater Authority

Liquids Contingency

- 54% of the Liquids contingency is allocated for construction change orders
- The rest is allocated to consultants and construction management

	Liquids Contingency Value	% of Contingency
Olsson	$719,679	54%
Butier	$294,125	22%
Carollo	$305,696	23%
Ninyo & Moore	$12,300	1%
Revised Contingency Total	**$1,331,800**	

Summary of Liquids Change Orders

Construction Contingency	$719,679	
Contingency Spent	$669,492	93%
Contingency Remaining	$50,187	7%

- Plant 1 Primary Clarifier and Channel Unforeseen Conditions = $350,000
- Plant 1 Secondary Clarifier Concrete and Metal Repair = $95,000
- Plant 1 Primary Clarifier Skimmer Electrical Modifications = $92,000
- Telescoping Valve Changes = $41,000
- Plant 2 Primary Clarifier Unforeseen Conditions = $28,000

Potential Liquids Change Orders

- Plant 1 Primary Basins and Channels additional cleaning, solids removal and crack injection = $138,489
- Plant 2 Telescoping Valve Rework = $27,884 (Received $30,000 credit from Carollo for design error)
- Bypass Pumping Change = $74,227

- Total Potential Change Orders = $240,600

- Remaining Contingency = $50,187
- **Liquids work is complete or in punch list stage**

Recommended Action

- Staff requests that the Engineering Committee recommend to the PC-2 Board of Directors to approve the addition of $250,000 of contingency to the J.B. Latham Package B Liquids Improvements

Original Liquids Construction Contract		$7,710,000
Original Liquids Contingency	8%	$616,800
Previous Construction Contingency Increases	1%	$102,879
Current Construction Increase Request	3%	$250,000
Total Construction Contingency	**13%**	**$969,679**

Questions?

MINUTES OF REGULAR MEETING
OF THE
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

Engineering Committee

DRAFT

October 13, 2022

The Regular Meeting of the South Orange County Wastewater Authority (SOCWA) Engineering Committee Meeting was held on October 13, 2022, at 8:30 a.m. via teleconferencing from the Administrative Offices located at 34156 Del Obispo Street, Dana Point, California. The following members of the Engineering Committee were present via Zoom Meeting:

DAVID SHISSLER	City of Laguna Beach
DAVE REBENSDORF	City of San Clemente
MIKE DUNBAR	Emerald Bay Service District
KEVIN BURTON	Irvine Ranch Water District
HANNAH FORD	El Toro Water District
DAVE LARSEN	Moulton Niguel Water District
DON BUNTS	Santa Margarita Water District
LORRIE LAUSTEN	Trabuco Canyon Water District

Absent:

MARC SERNA	South Coast Water District

Staff Present:

DAVID BARANOWSKI	Director of Engineering
JIM BURROR	Director of Operations
RONI YOUNG	Associate Engineer
MARY CAREY	Finance Controller
DINA ASH	HR Administrator
KONSTANTIN SHILKOV	Senior Accountant
NADYN KIM	Accountant
MATT CLARKE	IT Administrator
DANITA HIRSH	Executive Assistant

Also Present:

KEVIN DAVIS	Procopio Law
SHERRY WANNINGER	Moulton Niguel Water District
JESUS GARIBAY	Moulton Niguel Water District
CHRIS NEWTON	South Coast Water District

1. Call Meeting to Order

   Mr. David Baranowski, Director of Engineering, called the meeting to order at 8:31 a.m.

2. Public Comments

   None.

3. Approval of Minutes

   a. Engineering Committee Meeting of August 11, 2022

Mr. Bunts noted a correction to the Minutes for agenda item 5 to add another "0" to reflect the "per dry ton for full loads (40,000+ dry tons).

ACTION TAKEN
Motion was made by Mr. Bunts and seconded by Mr. Dunbar to approve subject Minutes as corrected.

Motion carried:	Aye 8, Nay 0, Abstained 0, Absent 1	
	Director Shissler	Aye
	Director Rebensdorf	Aye
	Director Dunbar	Aye
	Director Ford	Aye
	Director Burton	Aye
	Director Larsen	Aye
	Director Serna	Absent
	Director Bunts	Aye
	Director Lausten	Aye

4. Operations Report

Mr. Burror, Director of Operations, noted there were currently no specific items to report.

This was an information item; no action was taken.

5. JB Latham Salt Loading Model [Project Committee 2]

On behalf of Ms. Baylor, Director of Environmental Compliance, Mr. Baranowski updated the Committee on the status of the JB Latham Salt Loading Model study by Carollo Engineers. He stated Ms. Baylor requested the following report be read to the Committee:

Ms. Baylor "wanted to thank Carollo Engineers who put together the model and the report in a quick turnaround to be able to respond to all these items that we had gotten. She also wants to thank SOCWA maintenance and lab staff who constructed the batch reactor over the last two weeks to help with this modeling work. First, she wants to speak to the modeling results, and then summarize the batch reactor results. Note that the requests for salt loadings were broken down by scenario and then partitioned into Plant 1 and Plant 2 and then also combined into single effluent and its effects on the TDS loading. In response to Don's comment from the September meeting, we pushed for full treatment of the Lake Mission Viejo facility to the permitted value of 300,000 gallons per day, represented in scenario one. I would direct the Engineering Committee members to scenario five, page nine of the report, which combines all requests received to date for the maximum allowable limit for NPDES compliance at the JB Latham facility. Model results indicate that addition of the Harbor Project could push the TDS for Plant 2 to almost 4,000 parts per million TDS, which could result in a loss of BOD removal effectiveness, thus potentially violating the permit conditions for removal across the facility. The Harbor Project to Plant 2 is buffered by the dilution effect from Plant 1 for combined outfall compliance. The report also concludes water quality summaries would be beneficial to speciate TDS for treatment plant effectiveness. Please note, that SOCWA has requested more information from the Harbor Project to aid in further evaluation to ensure the compliance with the NPDES permit. Next, SOCWA lab staff completed the Sequencing Batch Reactor experiment mirroring the Alipour protocol referenced in the Carollo report for TDS ranging from 1,420 milligrams per liter (the control where no salt is added) all the way up to 22,800 milligrams per liter (the highest concentration of 15 grams per liter.) At one gram per liter of NaCl added, the reactor TDS was 2,840 milligrams per liter and cBOD exceeded monthly average permit limits. At two milligrams per liter of salt added, the reactor TDS was

4,180 milligrams per liter with monthly average cBOD and TSS exceedances. When three milligrams per liter of salt was added, the TDS was 5,310 milligrams per liter with weekly cBOD exceedances, TSS monthly exceedances, and violation of cBOD removal. SOCWA staff can distribute summary tables for the Batch Reactor Experiment if the PC 2 Engineering Committee members would like to have them for reference." An open discussion ensued.

There was no action taken on this item.

6. Asset Management Plans for San Juan Creek Ocean Outfall (SJCOO) and Aliso Creek Ocean Outfall (ACOO) Permit Compliance

On behalf of Ms. Baylor, Mr. Baranowski reported Ms. Baylor provided links to the latest versions of AMP template, noting it's a live document that will allow you to input your comments directly or you may download the document and send a copy to Ms. Baylor. All comments, verbal or written, must be sent by October 24. The deadline for getting all comments to the Regional Board is October 28, 2022.

There was no action taken on this item.

7. Capital Improvement Construction Projects Progress and Change Order Report (October) [Project Committees 2, 15, & 17]

ACTION TAKEN
Motion was made by Mr. Bunts and seconded by Mr. Larsen to approve Olsson Construction Change Orders 61 and 62, including 0 additional days for a total amount of $156,706.17, and a revised contract value of $18,373,744.14 for the J.B. Latham Package B Project.

Motion carried:	Aye 2, Nay 0, Abstained 0, Absent 1	
	Director Larsen	Aye
	Director Serna	Absent
	Director Bunts	Aye

8. JB Latham Treatment Plant Electrical System Upgrades Bidding and Engineering Services during Construction [Project Committee 12]

Staff pulled this agenda item and will bring back to the Engineering Committee for consideration at a future meeting.

9. Coastal Treatment Plant (CTP) Export Sludge Force Main Replacement Project Update [Project Committee 15]

Mr. Baranowski gave a presentation on the Export Force Main pressure changes over time. (*Presentation attached herein.*) An open discussion ensued.

This was an information item; no action was taken.

10. Regional Treatment Plant (RTP) AWT No. 2 Upgrades Update [Project Committee 17]

Mr. Baranowski updated the Committee on the status of the AWT No. 2 Upgrades project. An open discussion ensued.

This was an information item; no action was taken.

Adjournment

There being no further business, Mr. Baranowski adjourned the meeting at 9:31 a.m.

I HEREBY CERTIFY that the foregoing Minutes are a true and accurate copy of the Minutes of the Special Meeting of the South Orange County Wastewater Authority Engineering Committee of October 13, 2022, and approved by the Engineering Committee and received and filed by the Board of Directors of the South Orange County Wastewater Authority.

_____

Betty Burnett, General Manager/Secretary
SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

South Orange County Wastewater Authority

JBLTP SALT STUDY

FINAL | October 2022

carollo

South Orange County Wastewater Authority

JBLTP SALT STUDY

FINAL | October 2022

Contents

Tables

Abbreviations

BOD	biochemical oxygen demand
COD	chemical oxygen demand
g/L	grams per liter
gpd	gallons per day
JBLTP	J. B. Latham Treatment Plant
M/D	monovalent to divalent cation ratio
mEq/L	milliequivalents per liter
mg/L	milligrams per liter
mgd	millions of gallons per day
MMADF	maximum month average daily flow
MWDSC	Metropolitan Water District of Southern California
NPDES	National Pollutant Discharge Elimination System
OUR	oxygen uptake rate
ppd	pounds per day
RAS	return activated sludge
RO	reverse osmosis
SOCWA	South Orange County Wastewater Agency
SRT	solids retention time
SVI	sludge volume index
TDS	total dissolved solids
TM	technical memorandum
TOC	total organic carbon
TSS	total suspended solids

Section 1

PURPOSE AND BACKGROUND

1.1 Purpose

The purpose of this report is to document our understanding of the current total dissolved solids (TDS) loads from the J. B. Latham Treatment Plant (JBLTP) and the estimated impact of potential new sources of TDS loads on the JBLTP effluent and operations.

1.2 Background

The JBLTP is a wastewater treatment facility located in Dana Point, California, that is operated by the South Orange County Wastewater Authority (SOCWA) on behalf of three member agencies. The treatment facility utilizes a conventional activated sludge system, separated as two individual liquid treatment trains that have combined plant effluent: Plant 1, originally constructed in 1964, and Plant 2, originally constructed in 1978. Plant 1 has a permit capacity of 9.0 million of gallons per day (mgd) max month average daily flow (MMADF), while Plant 2 has a permit capacity of 4.0 mgd MMADF.

Each plant contains similar liquid treatment systems: bar screening, aerated grit removal, primary sedimentation, aeration, and secondary sedimentation. Auxiliary systems for these systems include influent pumps, primary sludge pumps, aeration blowers, return activated sludge (RAS) and waste activated sludge (WAS) pumps. Effluent from both plants is sent to a common effluent pump station where it is conveyed offsite through an ocean outfall pipe. The WAS from Plants 1 and 2 are combined and thickened with dissolved air flotation. The thickened WAS is combined with the primary sludge from Plants 1 and 2 and sent to anaerobic digestion followed by centrifuge dewatering.

Section 2

LITERATURE REVIEW

This section summarizes the impact found from five separate literature sources of salt additions on wastewater treatment biological process.

2.1 Yu et al. (2002) "The impact of seawater flushing on the nitrification – denitrification activated sludge sewage treatment process"

In 1995, seawater began to be used for toilet flushing in the catchment area for the Tai Po sewage treatment works in Hong Kong. The introduction of seawater for toilet flushing increased the chloride concentration from less than 500 milligrams per liter (mg/L) to 5000 mg/L and effluent total suspended solids (TSS) concentrations increased by 25 percent. The authors noted that the increase in TSS concentration could have been due to increased ferric addition

that was required to control the sulfides from the seawater. The Tai Po sewage treatment works eventually became acclimated to the high saline influent and performance improved. However, the authors noted that the plant still experienced periods of high effluent ammonia concentrations and issues with foaming. This study used the experience from the Tai Po sewage treatment works and bench scale reactors to measure the kinetic parameters for the autotrophs (ammonia oxidizing bacteria) and heterotrophs and found that the high salinity significantly inhibited the kinetic coefficients for both populations. The findings from this paper suggest that treatment plants can acclimate to high TDS concentrations of around 8,000 mg/L. However, even after acclimation, the secondary treatment process could be operating at a decreased rate which could be more of a concern for short solids retention time (SRT) plants like JBLTP.

2.2 Wang et al. (2005) "Effect of Salinity Variations on the Performance of Activated Sludge System"

Wang et al. investigated how shock changes in salinity affect activated sludge performance as was measured by total organic carbon (TOC) removal and oxygen uptake rates (OUR). This experiment was conducted in batch at bench-scale. Sodium chloride was dosed at concentrations between 0.1 to 20 grams per liter (g/L) to a mixture of activated sludge and raw wastewater. This study found that shock loads of 2.0 g/L and less of sodium chloride did not significantly affect the removal of TOC or the OUR. Shock loads of 5.0 g/L sodium chloride decreased TOC removal by 30 percent while loads as high as 20 g/L decreased TOC removal by 72 percent. Shock loads of 10 g/L sodium chloride decreased OURs by 35 percent while shock loads of 20 g/L of sodium chloride decreased OURs by 37 percent. The findings from this paper suggest that shock loads of TDS in the form of sodium chloride of around 5,000 mg/L can significantly decrease the removal efficiency of the secondary treatment process and may lead to periods of higher effluent biochemical oxygen demand (BOD) concentrations.

2.3 Kara et al. (2005) "Monovalent Cations and their influence on activated sludge floc chemistry, structure and physical characteristics"

Kara et al. (2008) documented how monovalent cations in the form of sodium and potassium can affect activated sludge floc. In this test, potassium chloride and sodium chloride were added into the feed of a semi-continuous activated sludge pilot reactor operated with an SRT of 8 days. Potassium and sodium were added in concentrations ranging from 0.5 to 20 mq/L which provided a monovalent to divalent cation ratio (M/D) of between 0.83 to 17.08, sodium concentrations ranging from 11.5 mg/L to 460 mg/L and potassium concentrations ranging from 19.5 mg/L to 780 mg/L.

The results showed that increasing sodium concentrations decreased the hydrophobicity of the floc with decreases noted for sodium concentrations as low as 5 milliequivalents per liter (mEq/L). Much less impact on floc hydrophobicity was observed with potassium addition. The decrease in hydrophobicity is projected to lead to less bioflocculation and poorer dewaterability and increased polymer consumption. Additionally, this paper documented the impact of sodium and potassium addition on floc strength and found that floc strength decreased for potassium additions of 10 mEq/L (corresponding to a M/D of 8.75) and for sodium additions as low as 5 mEq/L (corresponding to a M/D of 4.58). This paper found that sodium and potassium addition also resulted in an increase in the sludge volume index (SVI) which measures the flocs ability to settle. Higher SVI's indicate a floc that settles more slowly. Potassium addition

between 5.0 to 20 mEq/L and sodium addition of 5.0 mEq/L was found to moderately increase SVI while sodium addition of 10 to 20 mEq/L was found to significantly increase the SVI.

The findings from this paper suggest that TDS loads that increase the M/D ratios and/or include significant concentrations of sodium can lead to decreased floc strength which can yield higher SVIs along with increased polymer demand and lower cake solids.

2.4 Alipour et al. (2016) "Determining the salt tolerance threshold for biological treatment of salty wastewater"

Alipour et al. (2016), conducted a bench-scale test where activated sludge was diluted 1:1 with wastewater and between approximately 2,000 to 8,500 mg/L of TDS (added as sodium chloride). After the addition of the salt, the wastewater was aerated for six hours and then allowed to settle for two hours. This paper found that BOD, chemical oxygen demand (COD), TSS and turbidity removal were all negatively impacted by the addition of salt above 4,000 mg/L and significant impacts observed for salt concentrations above 8,000 mg/L.

2.5 Berde and Jolis (2020) "Effect of saltwater intrusion on activated sludge flocculation"

Berde and Jolis (2020) focused on how the M/D ratios can affect floc settleability. This study was based on the Divalent Cation Bridging theory (Sobeck & Higgins, 2002) that hypothesizes that the bridging of divalent cations with the negatively charged functional groups of the extracellular polymeric substances enhance the formation of stable flocs. The study was conducted with a sequencing batch reactor that simulated the activated sludge process. The reactor was operated at a 1.5-to-2-day SRT and tests were run for between 10 and 18 days. The experiment was conducted in two phases. In the first phase seawater was added to the reactors, increasing the chloride concentration in the reactors from 577 mg/L to 711 mg/L and increasing the M/D ratio from 3.32 to 3.5. This round of testing found the increase in seawater caused an increase in SVI from 85 mL/g to 126 mL/g. In the second round of testing, the impact of calcium chloride to counter the impact of the sodium ion from the seawater was tested. In these tests, the chloride concentration ranged from 585 mg/L to 653 mg/L with M/D ratios of between 2.7 to 2.9. This round of testing found the best SVI for the lowest M/D ratio (2.7) and that SVI increased when either less calcium was added or if more sodium was added. These authors concluded that monitoring both M/D ratio and the concentration of the individual cations in the primary effluent was an important process tool for the San Francisco's Southeast Treatment Plant.

This paper found that the addition of TDS in the form of seawater yielded poorer SVIs but that this impact could be reversed to some extent by the addition of divalent cations. For JBLTP perspective, this paper stresses the importance of understanding of the ions present in the TDS.

2.6 Comparison

These papers found that higher monovalent salt loads negatively impact process performance. Yu et al. (2002) documented the long-term impact of highly saline (5000 mg/L chloride) wastewater on treatment performance finding initial deterioration in performance followed by a recovery due to acclimation. However, even after the process recovered, daily variations in salinity were reported which led to poor effluent ammonia concentrations and foaming. This process instability could be due to the significant inhibition they reported in both the autotrophic and heterotrophic populations. Kara et al. (2008) found that at sodium concentration of 11.5 mg/L and M/D ratios of 4.58, floc are less dense and less hydrophobic which could result in poorer dewaterability and increased SVI. Wang et al. (2005) found that salt concentrations of 2000 mg/L resulted in a deterioration of TOC removal while Alipour et al. (2016) found that the addition of sodium chloride to increase the TDS to concentrations above 4000 mg/L resulted in a reduction in BOD, COD, TSS and turbidity removal. Berge and Jolis (2020) found that the addition of seawater to increase the chloride concentration above the baseline of 577 mg/L resulted elevated SVIs. Table 1 summarizes the findings of the papers evaluated.

The range of TDS concentration where impact was noted ranges from a low of 600 mg/L for Kara et al. (2008) when dosing with sodium to a high of 5,000 mg/L for Wang et al. (2005). While the concentration of inhibition found by Kara et al. (2008) are significantly lower than the other papers cited, the M/D ratios observed in this study are also significantly higher. Although Yu et al. (2002) noted impacts at higher TDS concentrations of 8,000 mg/L, this paper did not investigate any other concentrations of salts. In addition to simply the effects of TDS concentrations, the Kara et al. (2008) and Berde and Jolis (2020) papers noted that the TDS constituents are also important. The Kara et al. (2008) paper noted that sodium has a larger impact than potassium while the Berge and Jolis (2020) paper found that the addition of calcium (a divalent cation) could partially counteract the negative impacts of sodium.

Table 1 Comparison of TDS Concentrations Found to Cause Process Impacts

Study	Critical TDS	Impact Noted
Yu et al. (2002)	5,000 mg/L Cl- (~8,000 mg/L TDS(1))	Only studied one concentration. Found reduction in autotrophic and heterotrophic growth rates.
Wang et al. (2005)	5,000 mg/L NaCl dose(2) (~5,000 mg/L TDS dose)	30% reduction in TOC removal.
Kara et al. (2008)	Na+:5 mEq/L dose (~600 mg/L TDS) and M/D of 4.6 K+: 10 mEq/L dose (~1,100 mg/L TDS) and M/D of 8.8	Decrease in hydrophobicity (poorer dewaterability), increase in SVI.
Alipour et al. (2016)	4,000 mg/L TDS	Decrease in BOD, COD, TSS and turbidity removal.
Berde and Jolis (2020)	~700 mg/L Cl- (~1,200 mg/L TDS(1))	Moderate increase in SVI.

Notes:
(1) Only chloride concentrations were reported in this study. An equivalent molar concentration of sodium was assumed to balance the ions and these two ions (Na^+ and Cl^-) were used to calculate the TDS concentration.
(2) No information was provided in the paper regarding the TDS concentration of the wastewater used as a seed source.

Section 3

CURRENT JBLTP SALT LOADS

SOCWA provided the combined JBLTP Plant 1 and Plant 2 effluent flow and TDS concentrations for June through September 2022. Since the individual Plant 1 and Plant 2 effluent TDS concentrations were not available for this time period, these concentrations were estimated based assuming that the ratio of the current Plant 1 and Plant 2 TDS concentrations from technical memorandum (TM) 1 Liquid Treatment Train Analysis (Carollo Engineers, Inc., March 2017) of 1,100 mg/L for Plant 1 and 2,000 mg/L for Plant 2 is still true.

Table 2 summarizes the measured TDS concentration and loads for the combined effluent along with the estimated effluent TDS concentration and loads for Plant 1 and 2 individually.

Table 2 Estimated Plant 1 and Plant 2 Effluent Flow and TDS Loading

Location	Flow (mgd)	TDS (mg/L)	TDS (ppd)
Plant 1 + Plant 2 Effluent	7.2	1,350	80,670
Plant 1 Effluent	6.3(1)	1,230(2)	64,340
Plant 2 Effluent	0.9(1)	2,230(2)	16,330

Notes:
(1) The Plant 1 and Plant 2 effluent flows were estimated based the ratio of influent flows (excluding the recycles to Plant 1) measured for the same time period.
(2) Plant 1 and Plant 2 effluent TDS concentrations estimated based on the ratio of TDS concentrations estimated for Plant 1 and Plant 2 from TM1, Carollo 2017.
Abbreviations: ppd - pounds per day.

Section 4

POTENTIAL ADDITIONAL SALT LOADS

SOCWA is investigating whether they should accept additional salt loadings from the following sources:

- Lake Mission Viejo
- Mission Viejo Country Club
- El Niguel Country Club
- Dana Point

This section summarizes the anticipated flow, TDS concentration and loads from these sources.

4.1 Lake Mission Viejo

Lake Mission Viejo flows and loads were provided by Santa Margarita Water District for the last three years from the Lake Mission Viejo Reverse Osmosis (RO) Facility which currently discharges brine to the Plant 1 influent of JBLTP. Although the maximum brine flow that is allowed is 300,000 gallons per day (gpd), the average flow to sewer is 109,000 gpd. There is a possibility that in the future Lake Mission Viejo may be treating up to its permitted amount so the potential increase above the current average TDS load is shown in Table 3.

Table 3 Lake Mission Viejo Brine TDS Concentrations and Loads

Condition	Flow (gpd)	TDS (mg/L)	TDS (ppd)
Current Average	109,000	5,100	4,640
Permitted	300,000	5,100	12,770
Potential Increase	191,000	5,100	8,130

4.2 Mission Viejo Country Club

Brine flows from the Mission Viejo Country Club were estimated based on the following assumptions:

- The water purification facility would treat flows of 200 acre-foot/year.
- TDS concentrations into the water purification facility will be approximately 600 mg/L based on Metropolitan Water District of Southern California (MWDSC) Consumer Confidence Report for 2021.
- The brine flow from the water purification facility will include 99 percent of the influent TDS load along with 20 percent of the influent flow.

Table 4 summarizes the estimated brine flows and TDS loads from the Mission Viejo Country Club.

Table 4 Estimated Mission Viejo Country Club Brine TDS Concentrations and Loads

	Flow (gpd)	TDS (mg/L)	TDS (ppd)
Flow into RO facility	178,500	600	893
Estimated Brine Flow	35,700	2,970	885

4.3 El Niguel Country Club

The El Niguel Country Club permit states that 300,000 gpd is produced as permeate and 60,000 gpd is sent to sewer as RO reject brine. The brine flows and TDS loads were estimated based on the following assumptions:

- TDS concentrations into the water purification facility will be approximately 1,107 mg/L based on a report for the 3 stage RO process at the Moulton Regional Plant.
- The brine flow from the RO facility will include 99 percent of the influent TDS load along with 20 percent of the influent flow.

Table 5 summarizes the estimated brine flows and TDS loads from the El Niguel Country Club.

Table 5 Estimated El Niguel Country Club Brine TDS Concentration and Loads

	Flow (gpd)	TDS (mg/L)	Load (ppd)
Flow into RO facility	360,000	1,107	3,320
Estimated Brine Flow	60,000	6,580	3,290

4.4 Dana Point Construction Groundwater Dewatering

Burnham-Ward Properties LLC has submitted a special wastewater discharge permit for average flows of 720,000 gpd from construction groundwater dewatering to the sewer. Water quality data reported by SOCWA reported that the average TDS concentration of the groundwater is 5,600 mg/L and contains significant concentrations of iron, manganese, boron, chloride and sulfate. Table 6 summarizes the estimated TDS load for this source.

Table 6 Dana Point TDS Concentration and Load

	Flow (gpd)	TDS (mg/L)	Load (ppd)
Average	720,000	5,600	33,630

Section 5

ESTIMATED IMPACT OF POTENTIAL LOADS ON JBL

Potential impacts on JBL from the increased influent TDS is summarized in the following sections.

5.1 Scenario 1 - Plant 1: Lake Mission Viejo

The first scenario covers the result of adding the Lake Mission Viejo flows to Plant 1. Currently Lake Mission Viejo flows to the Oso Trabuco sewer which flows into Plant 1. This scenario will evaluate the effects Lake Mission Viejo increasing their discharge up to their permitted flow of 300,000 gpd. As shown in Table 7, the addition of Lake Mission Viejo brine to Plant 1 would increase the estimated Plant 1 TDS concentration by 9.0 percent and the combined effluent TDS concentration by 7.0 percent.

Table 6 Estimated Impact of Scenario 1

	Flow (mgd)		TDS (mg/L)		TDS (ppd)	
	Before	After	Before	After	Before	After
Plant 1	6.3	6.5	1,230	1,340	64,340	72,470
Combined Effluent	7.2	7.4	1,350	1,450	80,670	88,800

5.2 Scenario 2 - Plant 1: Mission Viejo Country Club

Scenario 2 includes the addition of Mission Viejo Country Club brine flows and loads to Plant 1. As shown in Table 8, the addition of Lake Mission Viejo Country Club brine to Plant 1 would increase the estimated Plant 1 TDS concentration by 1.0 percent and the combined effluent TDS concentration by 1.0 percent.

Table 7 Estimated Impact of Scenario 2

	Flow (mgd)		TDS (mg/L)		TDS (ppd)	
	Before	After	Before	After	Before	After
Plant 1	6.3	6.3	1,230	1,240	64,340	65,220
Combined Effluent	7.2	7.3	1,350	1,360	80,670	81,560

5.3 Scenario 3 - Plant 1: El Niguel Country Club

Scenario 3 includes the El Niguel Country Club brine flows and loads to Plant 1. As shown in Table 9, the addition of Lake Mission Viejo Country Club brine to Plant 1 would increase the estimated Plant 1 TDS concentration by 4.0 percent and the combined effluent TDS concentration by 3.0 percent.

Table 8 Estimated Impact of Scenario 3

	Flow (mgd)		TDS (mg/L)		TDS (ppd)	
	Before	After	Before	After	Before	After
Plant 1	6.3	6.3	1,230	1,280	64,340	67,630
Combined Effluent	7.2	7.2	1,350	1,390	80,670	83,960

5.4 Scenario 4 - Plant 2: Dana Point

Scenario 4 includes the addition of the Dana Point groundwater dewatering flows and loads to Plant 2. The Dana Point groundwater flows and loads are significant before entering Plant 2, so the flow and TDS concentration and load all increase significantly. The estimated impact of Scenario 4 is summarized in Table 10. The addition of the Dana Point groundwater dewatering flow could nearly double the flow and TDS load to Plant 2 and increase the Plant 2 TDS concentration by about 70 percent. This load could also increase the combined effluent TDS concentration by approximately 30 percent.

Table 9 Estimated Impact of Scenario 4

	Flow (mgd)		TDS (mg/L)		TDS (ppd)	
	Before	After	Before	After	Before	After
Plant 2	0.9	1.6	2,230	3,750	16,330	49,960
Combined Effluent	7.2	7.9	1,350	1,740	80,670	114,300

5.5 Scenario 5 - Plant 1: Lake Mission Viejo + Mission Viejo Country Club + El Niguel Country Club + Plant 2: Dana Point

Scenario 5 combines the flows and loads from all the new sources. The results are summarized in Table 11 below. In this scenario, the Plant 1 TDS concentration is increased by 14 percent, the Plant 2 by 68 percent and the combined effluent by 38 percent.

Table 10 Estimated Impact of Scenario 5

	Flow (mgd)		TDS (mg/L)		Load (ppd)	
	Before	After	Before	After	Before	After
Plant 1	6.3	6.6	1,230	1,400	64,340	76,640
Plant 2	0.9	1.6	2,230	3,750	16,330	49,960
Combined Effluent	7.2	8.2	1,350	1,860	80,670	126,600

Section 6

CONCLUSIONS

Although the JBLTP does not have a National Pollutant Discharge Elimination System (NPDES) permit limit for TDS, the plant needs to comply with the California Ocean Plan (revised in 2019) which requires dischargers that accept seawater dewatering brine to not increase the salinity concentration of the receiving water by more than 2 parts per thousand. For Scenario 5, the combined effluent TDS concentration is estimated to increase from 1,350 mg/L to 1,860 mg/L. While this represents an increase of 38 percent in the effluent TDS concentration, this concentration is still below the allowable salinity under the California Ocean Plan.

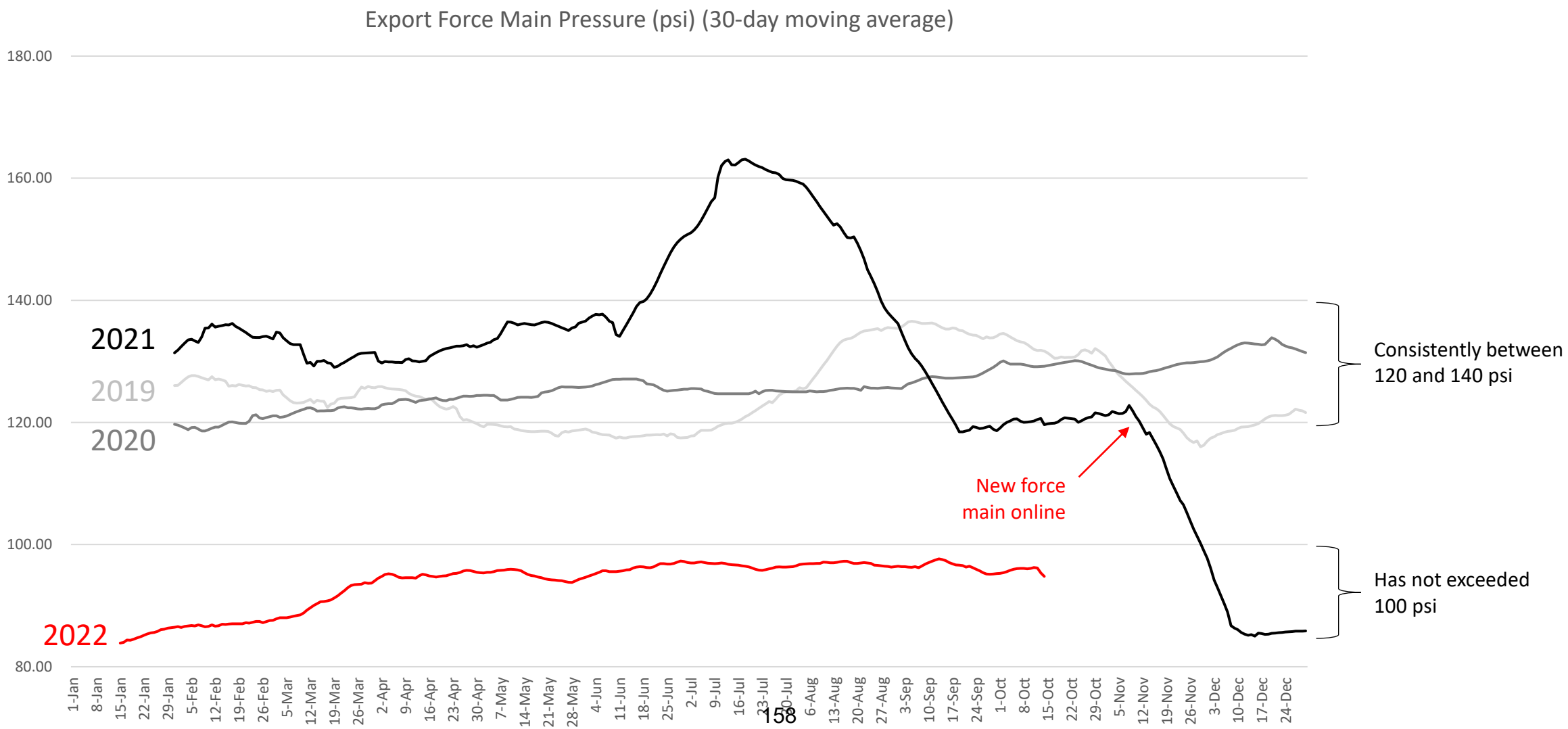
While accepting the salt loads may not represent a violation of the JBLTP NPDES permit for TDS or the California Ocean Plan, the literature reviewed found that high TDS concentrations could yield decrease removal of BOD and TSS which are part of the JBLTP NPDES permit and could negatively impact sludge dewaterability (wetter cake, more polymer demand, lower solids capture) which could increase the cost of sludge dewatering and solids treatment. Higher SVI values could also impact overall settleability, which can reduce the efficiency of the thickening process and increase hydraulic flow to the digesters. Higher flow to the digesters will reduce digestion SRT and in turn impact volatile solids destruction. Lower volatile solids destruction can further task the dewatering process, making it less efficient. Higher digester feed flow may necessitate additional heat energy for digester heating (though that is typically provided by the digester gas-fueled cogeneration system or boilers).

The combination of the potential sources to Plant 1 could increase the TDS concentration of Plant 1 by about 14 percent or to a concentration of roughly 1,400 mg/L. Although this increase is relatively minor and the total TDS concentration of Plant 1 is below the concentration found to cause significant reductions in plant performance by Wang et al. (2005) and Alipour et al. (2016), the work of Kara et al. (2008) and Berde and Jolie (2022) stressed the importance of the type of ion present in the TDS. Ions such as sodium are potentially more problematic than ions such as calcium. The information provided by MWDSC consumer confidence report, provides

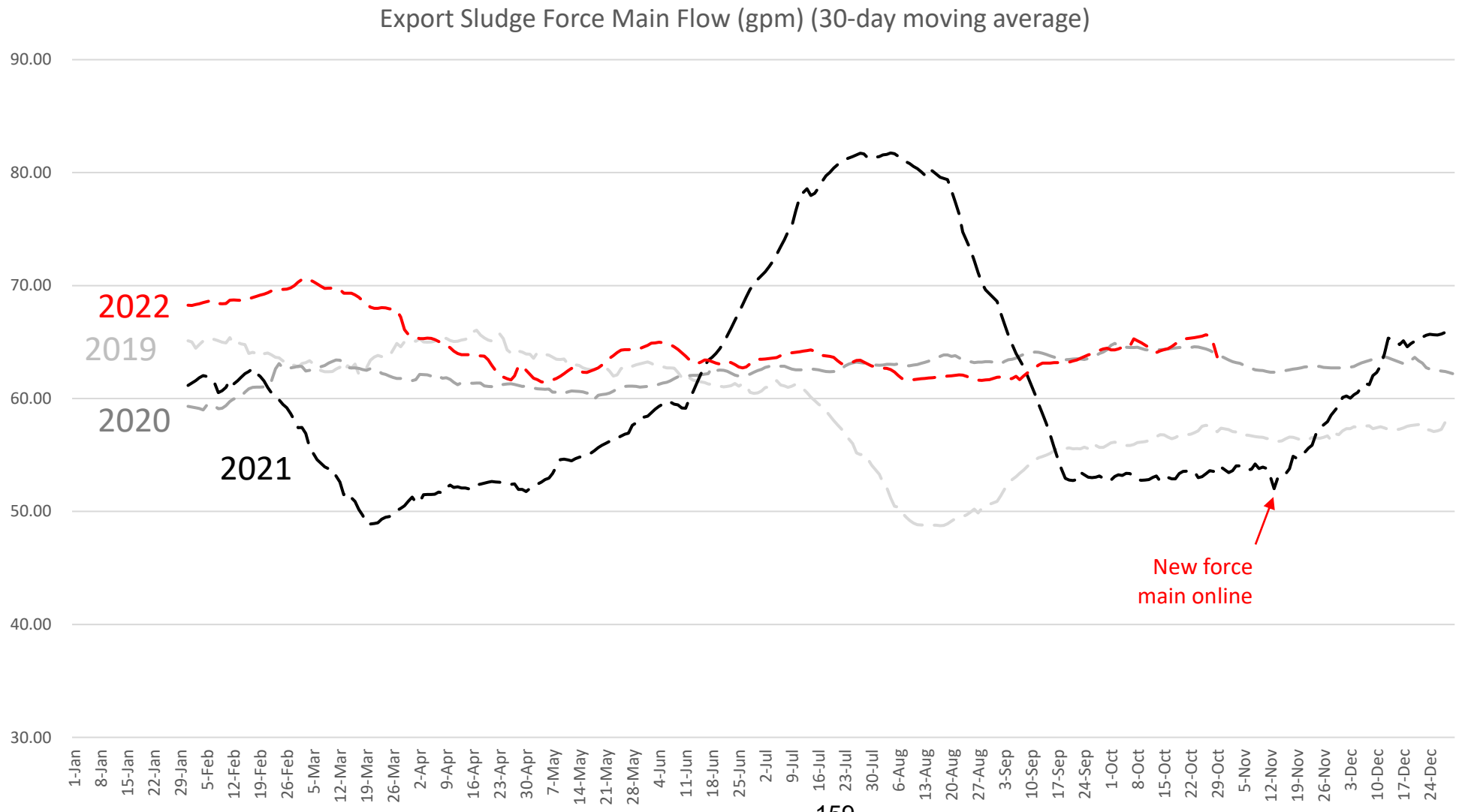
concentrations of monovalent cations (sodium and potassium) and divalent cations (calcium and magnesium) and based on this information, the brine from the Mission Viejo Country Club is estimated to have a M/D ratio of approximately 1 (based on equivalence ratios) which should not cause adverse impacts to the Plant 1 existing performance. The data provided for the Moulton Regional Plant, has a high sodium concentration and M/D ratios for this source are around 1.5 (based on equivalence ratios). Given that this brine source represents a small fraction of the total TDS load to Plant 1, it is unlikely that this elevated M/D ratio would significantly increase the M/D ratio of Plant 1. The data from the Lake Mission Viejo process does not provide a breakdown of the ions present in the TDS.

The Dana Point groundwater dewatering addition to Plant 2 could represent a significant increase in flow and TDS concentration to Plant 2 with estimated Plant 2 TDS concentrations close to 4,000 mg/L. TDS concentrations of 4,000 mgL have been shown by Alipour et al. (2016) to cause a decrease in BOD, COD and TSS removal while Wang et al. (2005) found that concentrations slightly higher (around 5,000 mg/L) caused a 30 percent reduction in TOC removal. The limited water quality data collected for the Dana Point groundwater dewatering suggests high concentrations of sulfate, iron, boron, chloride and manganese but does not provide concentrations of sodium, potassium, calcium and magnesium which would be necessary to calculate the anticipated M/D ratio of this source. Additional water quality data from this source is recommended along with bench-scale testing to better quantify the impact of accepting this source.

Force Main Pressure Changes Over Time



Sludge Flow Over Time



Annual average flow is slightly higher in 2022 (64 gpm vs. <62)

Flow rate is extremely steady compared to previous years

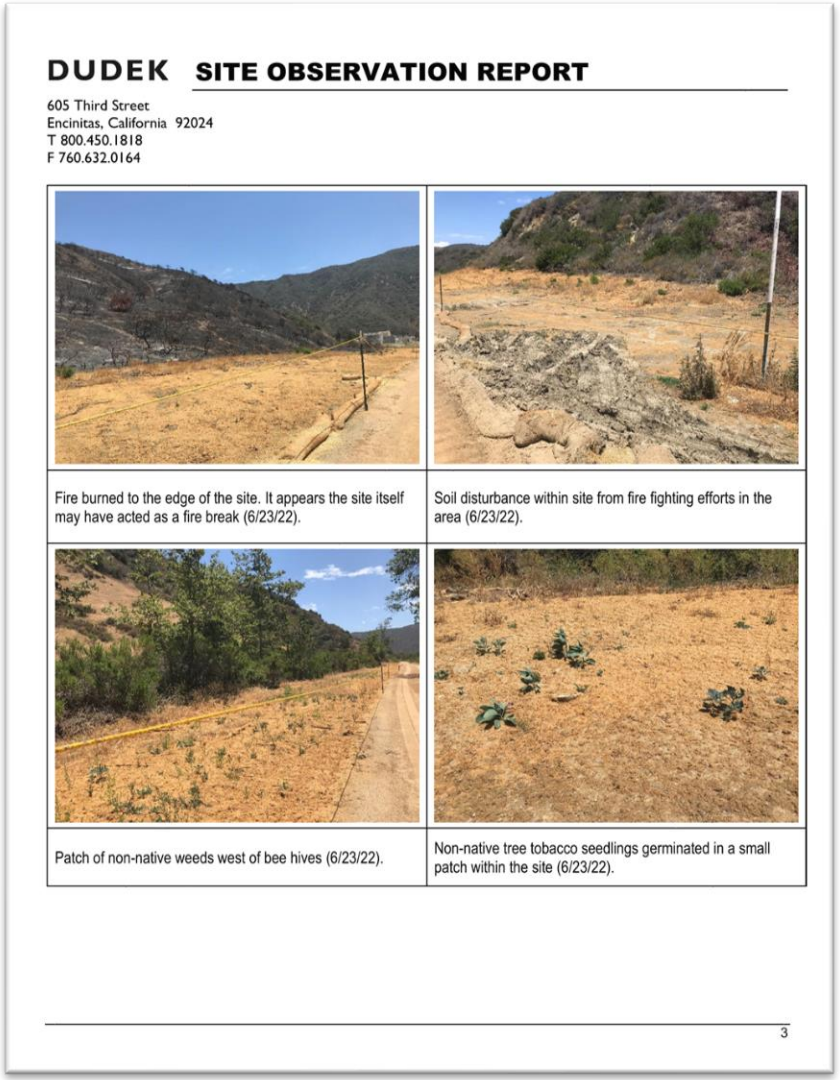
Hydroseed Restoration

April 7, 2022

April 26, 2022

October 12, 2022

Hydroseed Restoration



DUDEK **SITE OBSERVATION REPORT**

605 Third Street
Encinitas, California 92024
T 800.450.1818
F 760.632.0164

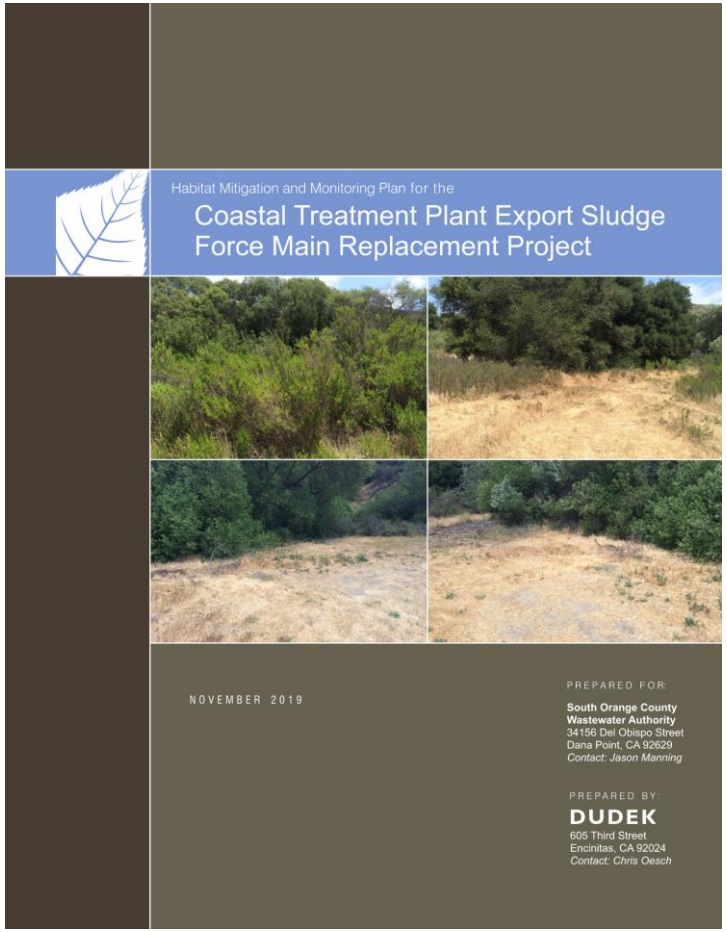
Fire burned to the edge of the site. It appears the site itself may have acted as a fire break (6/23/22).	Soil disturbance within site from fire fighting efforts in the area (6/23/22).
Patch of non-native weeds west of bee hives (6/23/22).	Non-native tree tobacco seedlings germinated in a small patch within the site (6/23/22).

3

Quarterly biological monitoring reports

Quarterly maintenance (weeding, wattles, rope fence, etc.)

Mitigation Update



1) Revise HMMP per Coastal Commission direction
2) Identify mitigation sites
3) Approvals
4) Design
5) Construct
6) Monitor

Agenda Item 4

Engineering Committee Meeting

Meeting Date: November 10, 2022

TO: Engineering Committee

FROM: Jim Burror, Director of Operations

SUBJECT: Operations Report

Overview

Verbal update on operations and maintenance activities.

Recommended Action: Information Item.

Agenda Item 5

Engineering Committee Meeting

Meeting Date: November 10, 2022

TO: Engineering Committee

FROM: Amber Baylor, Director of Environmental Compliance
Katie Greenwood, Source Control Manager

SUBJECT: Wastewater Discharge Request to Santa Margarita Water District (SMWD) and City of San Clemente (CSC) Sewerage Facilities

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Summary of Discharge Request of Wastewater from the Prima Deshecha Landfill (PDL) Gas Condensate Treatment System (CTS)

Orange County Waste & Recycling (OCWR) Staff operating the PDL submitted a discharge request for consideration and acceptance of the treated condensate discharge into the San Juan trunkline system that would enter either the Chiquita Water Reclamation Plant (CWRP) or the City of San Clemente's Water Reclamation Plant (WRP).

Landfill gas condensate is presently stored in two holding tanks (9,100 and 10,300 gallons) on-site at PDL and periodically emptied by vacuum truck for offsite disposal to a centralized waste treatment (CWT) facility within the OC SAN service area. To relieve this procedure, OCWR is proposing to treat the waste stream and discharge up to 5,000 gpd of treated effluent to sewerage facilities by installation of a sewer conveyance pipeline. The proposed sewer connection point is located approximately 300 feet outside the southwestern portion of the landfill property and in the region of the intersection of Camino De Los Mares and Portico Del Norte in San Clemente.

Timeline

The following is a timeline of events related to the Waste Discharge Permit.

- On August 26, 2021, SOCWA received a WD Permit Application from GeoLogic Associates submitted on behalf of Orange County Waste & Recycling (OCWR).
- On October 22, 2021, SOCWA reviewed the application and provided a response stating initial concerns and requesting additional information.
- On February 14, 2022, SOCWA received a revised WD Permit Application submitted on behalf of OCWR.
- On May 5, 2022, Staff toured the pilot study facility and discussed the experimental design related to the PFAS treatment train configuration.
- On July 14, 2022, SOCWA received a revised submittal with PFAS treatment data related to the pilot study.
- On August 4, 2022, SOCWA, GeoLogic and OCWR Staff met virtually to discuss the pilot study results.
- On October 11, 2022, a final project treatment design, which includes an operational program, process control, maintenance, and service plan, was submitted to SOCWA.

Pilot Plant Pretreatment

To treat organic constituents, a membrane bioreactor (MBR) with activated sludge and enhanced powdered activated carbon (PAC) was utilized. To treat per- and polyfluoroalkyl substances (PFAS), a granular activated carbon adsorption system and ion exchange resin was selected for use in the pilot. The pilot treatment system began on March 21, 2022 and ran for eight weeks. There were 56% to 99% removal efficiency reductions in PFAS/PFOS through the treatment systems. PFOA ranged from 2.3ng/l to 7.1ng/l in the MBR treatment. PFOA and PFOS were not measured through the ion exchange resins. Average effluent wastewater concentrations for PFOA are 10ng/l and 3ng/l for PFOS.

SOCWA Staff Concerns

PFOS and PFOA are emerging contaminants of concern for which SOCWA has yet to develop technically based local limits to regulate. Staff have concerns with the uncertainty surrounding future PFAS regulations which have been discussed with the permit applicant. EPA is in the process of revising effluent limitation guidelines (ELGs) for the Organic Chemicals, Plastics and Synthetic Fibers and Metal Finishing industrial categories.

PDL is regulated and permitted as a Class III non-hazardous landfill and the gas condensate produced at the landfill is not presently considered a hazardous waste. However, on September 6, 2022, EPA published its Notice of Proposed Rulemaking designating PFOS and PFOA as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)[1] with a final designation expected Summer 2023. Under the proposed CERCLA designation, the federal government has the statutory authority to investigate hazardous substances released into the environment. Additionally, the CERCLA designation has an enforcement mechanism for private parties to hold entities responsible for hazardous substance releases. While EPA is evaluating practical methods to analyze and treat PFAS in solid waste, landfills, wastewater/leachates, soils, and groundwater, this CERCLA designation now provides a direct link to investigations and private party lawsuits for allowances of hazardous substances into the sewer system.

Additionally, recycled water sources, especially for indirect and direct potable reuse (IPR/DPR), are subject to intensive state and federal requirements and regulations. Should landfill treatment methods fail, SOCWA may no longer be able to reuse and recycle its wastewater and may be limited in its ability to dispose of its biosolids.

SOCWA has concerns that once sewer connection is made, OCWR may submit another application for discharge of other landfill wastewater streams with potential for higher projected volumes upon landfill closure, not expected before 2050.

Recommended Action: Staff is seeking direction for response to the permitted request.

[1]Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, 87 Fed. Reg. 54415 (proposed Sept. 6, 2022) (to be codified at 40 C.F.R. pt. 302).

Agenda Item 6

Engineering Committee Meeting

Meeting Date: November 10, 2022

TO: Engineering Committee

FROM: Amber Baylor, Director of Environmental Compliance

SUBJECT: JB Latham Salt Loading Model Follow Up [Project Committee 2]

Background

Salt loading to the JB Latham facility was discussed at the October 13, 2022, Engineering Committee meeting (Agenda Item 5). Follow-up questions from the meeting are included below to allow for open communication regarding the intent of the study and the batch reactor results.

Discussion

The questions discussed on October 13, 2022, are included below:

1. What was the driver of the study?
2. Has SOCWA staff contacted project drivers?
3. Recycled vs. Potable Water Model inputs?
4. Consideration of speciated TDS loading for cost allocation and future study?

Staff will provide an update on the questions at the meeting. Staff will also provide (**under separate cover**) a table of bioreactor study results as a companion to the modeling study.

Recommended Action: Information Item.

Agenda Item 7

Engineering Committee Meeting

Meeting Date: November 10, 2022

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: Capital Improvement Construction Projects Progress and Change Order Report (*November*) [Project Committee 2, 15 & 17]

Overview

Active Construction Project Updates:
Attached are the updated CIP reports. Please note that there are three new change orders for Olsson Construction for PC 2 J.B. Latham Package B project totaling $114,500.10.

Closed Project:
For PC 17, the Regional Treatment Plant Aeration Diffuser Replacement Project has been removed from the CIP report. Construction is complete and the construction contract has been fully billed.

This is informational for PC 15 and PC 17 member agencies.

Recommended Action: Staff recommends that the Engineering Committee approve the following Olsson Construction Change Orders:

- Change Order 63 for $14,797.83, including 0 additional day(s)
- Change Order 64 for $66,992.33, including 0 additional day(s)
- Change Order 65 for $32,709.94, including 0 additional day(s)

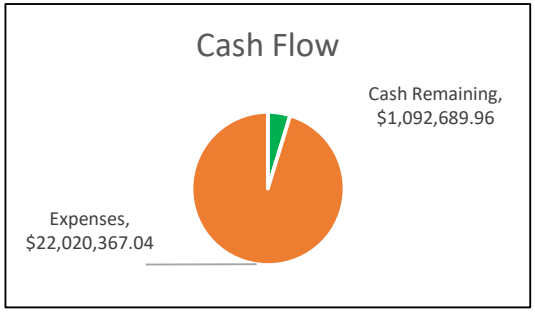
For a total of $114,500.10, with no additional days, and a revised contract value of $18,488,244.24 for the J.B. Latham Package B Project.

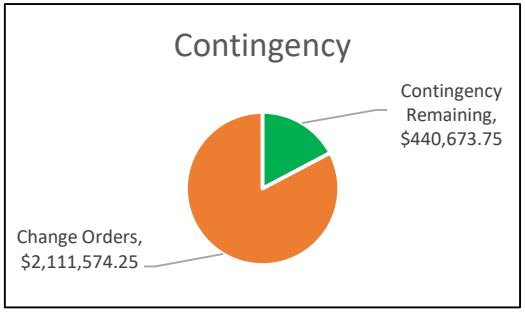
Project Financial Status

Project Committee	2
Project Name	Package B
Project Description	Plant 1 basin repairs, DAF rehabilitation, Energy Building seismic retrofit and minor rehabilitation, Digester 4 rehabilitation

Data Last Updated

October 31, 2022





Cash Flow

Collected	$ 23,113,057.00
Expenses	$ 22,020,367.04

Project Completion

Schedule	95%
Budget	92%

Contracts

Company	PO No.	Original	Change Orders*	Amendments	Total	Invoiced
Olsson	13497	$ 17,325,000.00	$ 1,163,244.24		$ 18,488,244.24	$ 17,599,662.46
Butier	13647	$ 895,727.00		$ 1,005,251.00	$ 1,900,978.00	$ 1,685,469.50
Carollo	13616	$ 846,528.00		$ 616,037.00	$ 1,462,565.00	$ 1,239,428.36
TetraTech	13605	$ 94,000.00		$ -	$ 94,000.00	$ 93,884.70
Ninyo & Moore	14279	$ 49,399.00		$ 30,000.00	$ 79,399.00	$ 44,736.27
ADS Environmental	16452	$ 107,200.00	$ -		$ 107,200.00	$ 48,375.00
Hallsten	16578	$ 251,422.00	$ 16,715.25		$ 268,137.25	$ -
Dudek	17401	$ 48,360.00		$ -	$ 48,360.00	$ 28,830.00
		$ 19,617,636.00	**$ 1,179,959.49**	**$ 1,651,288.00**	**$ 22,448,883.49**	**$ 20,740,386.29**

**Values include change orders to be reviewed by Engineering Committee and deductive change orders*

Contingency

Area	Project Code	Amount **	Change Orders	Total Remaining	Percent Used
Liquids	3220-000	$ 969,679.00	$ 848,936.21	$ 120,742.79	87.5%
Common	3231-000	$ 38,120.00	$ 3,305.76	$ 34,814.24	8.7%
Solids	3287-000	$ 1,544,449.00	$ 1,259,332.28	$ 285,116.72	81.5%
		$ 2,552,248.00	**$ 2,111,574.25**	**$ 440,673.75**	**82.7%**

*** Amount reflects contingency for Construction Contracts only*

Summary of New Change Orders

Change Order No	MNWD	SCWD	SMWD	$ Amount
63	$ 3,199.53	$ 2,959.57	$ 8,638.73	$ 14,797.83
64	$ 14,484.83	$ 13,398.47	$ 39,109.04	$ 66,992.33
65	$ 7,548.45	$ 9,435.56	$ 15,725.93	$ 32,709.94
Grand Total	**$ 25,232.81**	**$ 25,793.59**	**$ 63,473.70**	**$ 114,500.10**

Change Orders and Amendments

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
Within Contingency, to be reviewed by Engineering Committee						**$ 114,500.10**
63	Olsson	3287-000	Boiler Room Modifications	11/10/2022		$ 14,797.83
64	Olsson	3287-000	DAFT 1 Repair	11/10/2022		$ 66,992.33
65	Olsson	3220-000	Secondary Clarifier Telescoping Valve Modifications (Design Error)	11/10/2022		$ 32,709.94
Approved by Board of Directors					**191**	**$ 1,065,459.39**
1	Olsson	3287-000	Addition of Loop Piping to the Existing Hot Water Lines Adjacent to Digester 3	12/12/2019	0	$ 4,725.00
2	Olsson	3287-000	Asbestos Gaskets in Boiler hazardous disposal	6/4/2020	0	$ 6,343.10
3	Olsson	3287-000	Add Analog Infrastructure and Cabling	6/4/2020	11	$ 37,969.60
4	Olsson	3287-000	Digester 4 Coating Additional Sealant	6/4/2020	3	$ 24,001.54
5	Olsson	3220-000	Valve Handwheel Ergonomic extension	8/6/2020	28	$ 16,370.30

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
6	Olsson	3287-000	Change to DeZurik Plug Valves to match existing	8/6/2020	90	$ 41,993.87
7	Olsson	3287-000	Digester 4 Additional Concrete Repair	8/6/2020	3	$ 7,412.74
8	Olsson	3287-000	Repair Existing Damaged Electrical Box	8/6/2020	0	$ (1,829.00)
9	Olsson	3220-000	Change the Telescoping Valve Boxes and Piping from Carbon Steel to Stainless Steel	8/6/2020	0	$ 18,677.63
10	Olsson	3287-000	Duct bank J Interferences	12/17/2020	18	$ 73,639.42
11	Olsson	3220-000	Blasting of Existing Influent Pipe Spools	12/17/2020	5	$ 20,868.52
12	Olsson	3220-000	Duct bank K Interferences	12/17/2020	0	$ 15,567.08
13	Olsson	3287-000	Digester 3/4 PLC Relocation	12/17/2020	14	$ 41,367.51
14	Olsson	3287-000	Digester 4 Additional Tank Repair	12/17/2020	18	$ 33,642.75
15	Olsson	3220-000	Duct bank O Interferences	12/17/2020	0	$ 1,686.88
16	Olsson	3287-000	Digester 3/4 Control Building Roof Replacement	2/4/2021	0	$ 42,780.00
17	Olsson	3287-000	MCC-D1 Modifications due to Change in Motor Size	5/6/2021	0	$ 34,392.02
18	Olsson	3287-000	Integrator Additional Site Visits	5/6/2021	0	$ 7,571.97

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
19	Olsson	3287-000	Multi-zone air conditioning unit in the Cogen MCC Room and Office	6/3/2021	0	$ 29,417.20
20	Olsson	3220-000	Overhead Walkway Removal at Plant 1 Secondary Basins 5 through 9	6/3/2021	0	$ 62,113.50
21	Olsson	3287-000	Cogeneration PLC Modifications and Integration	6/3/2021	0	$ 42,922.67
22	Olsson	3220-000	Plant 1 Secondary Basins UV Rated Wear Strips	9/2/2021	0	$ 28,965.33
23	Olsson	3287-000	MCC-F1 Design Change	9/2/2021		$ 481,290.42
24	Olsson	3287-000	DAF 2 Investigation Work and Inspection Blast	10/7/2021		$ 67,838.71
25	Olsson	3287-000	New Fiber Conduit in West Blower Building	10/7/2021		$ 4,957.71
26	Olsson	3220-000	Plant 1 Primary Basin Conduit Obstruction	10/7/2021		$ 8,444.20
27	Olsson	3220-000	Plant 1 Influent Channel Additional Coating between Primary Basins 5 and 6	10/7/2021		$ 15,469.98
28	Olsson	3287-000	MCC-F1 Lighting Changes	10/7/2021		$ 7,843.04
29	Olsson	3287-000	Digester 3 Ground Rod	10/14/2021		$ 7,269.16

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
30	Olsson	3220-000	New Fiber Conduits at East Electrical and Storm Water Buildings	10/14/2021		$ 8,045.43
31	Olsson	3220-000	Plant 2 Primary Influent Channel Repair Credit	12/9/2021		$ (15,903.00)
32	Olsson	3220-000	Plant 1 and 2 Telescoping Valve Pipe Supports	12/9/2021		$ 6,132.27
33	Olsson	3287-000	4" Gas Line Routing Modifications	12/9/2021		$ 18,146.07
34	Olsson	3287-000	Gas Mixer Conduit Conflict	12/9/2021		$ 12,383.89
35	Olsson	3220-000	P1 Primary Tanks 5 and 6 Temporary Power	3/10/2022		$ 7,256.05
36	Olsson	3220-000	P1 Primary Tanks Skimmers Starter Modification	3/10/2022		$ 45,374.13
37	Olsson	3220-000	P1 Primary Tanks Hopper Wall Coating	3/10/2022		$ 34,505.41
38	Olsson	3220-000	P1 Effluent Channel Conduit Conflict	3/10/2022		$ 9,274.98
39	Olsson	3220-000	P1 Primary Tanks Torque Limit Switch	3/10/2022		$ 7,149.86
40	Olsson	3287-000	Multi-zone air conditioning unit in the Cogen MCC Room and Office	3/10/2022		$ (2,309.09)
41	Olsson	3287-000	DAFT 2 Repair	3/10/2022		$ 59,403.53
42	Olsson	3287-000	Digesters 1 and 2 Heat Exchanger Layout Reconfiguration Electrical	6/2/2022	1	$ 12,885.18

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
43	Olsson	3287-000	Digester 3 Heat Exchanger Hot Water Loop Tie-In	6/2/2022		$ 2,774.58
44	Olsson	3220-000	Plant 1 Primary Basin 1 Shutdown Repair Work	6/2/2022		$ 1,009.86
45	Olsson	3287-000	Replace Compressor Line and Valve at Digester 4	6/2/2022		$ 10,762.85
46	Olsson	3220-000	Plant 2 Influent Gates Removal and Concrete Demo	6/2/2022		$ 5,389.66
47	Olsson	3287-000	DAFT 2 Launder Support Detail	6/9/2022		$ 45,682.30
48	Olsson	3220-000	Plant 1 Primary Basins 1, 2, 5 and 6 Coating Removal	6/9/2022		$ 111,101.16
49	Olsson	3220-000	Plant 1 Primary Basins 1, 2, 5 and 6 Existing Equipment Removal and Reinstallation	6/9/2022		$ 71,864.17
50	Olsson	3287-000	Digester Mixing Pumps Control Programming Change	8/4/2022		$ 4,397.77
51	Olsson	3220-000	Plant 1 Primary Basins Skimmers I/O Connection and Programming Change	8/4/2022		$ 14,237.83
52	Olsson	3287-000	Fiber Patch Cables to Connect the Centrifuge PLC to the Centrifuge Patch Panel	8/4/2022		$ 3,755.90

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
53	Olsson	3220-000	Plant 1 Primary Basins 3 and 4 Coating Removal	8/4/2022		$ 43,222.24
54	Olsson	3220-000	Plant 1 Secondary Basins Concrete Structural and Basins 2 and 3 Drive Plate Rework	8/4/2022		$ 20,860.16
55	Olsson	3220-000	Plant 2 Primary Basins Repair and Rehab of Head-Shaft Bearings	8/4/2022		$ 4,618.44
56	Olsson	3231-000	Board SOCWA Front Office with Plywood to Cover Windows	8/4/2022		$ 3,305.76
57	Olsson	3220-000	Seal the Openings at Plant 1 Primary Influent and Effluent Channels	8/4/2022		$ 25,491.03
58	Olsson	3220-000	Plant 1 Primary Basins 3 and 4 Existing Equipment Removal and Reinstallation	9/1/2022		$ 26,498.32
59	Olsson	3220-000	Plant 1 Secondary Basins Existing Embedded Metal Plates	9/1/2022		$ 4,290.48
60	Olsson	3220-000	Plant 2 Primary Baffle Frame Replacement	9/1/2022		$ 18,291.57

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
61	Olsson	3287-000	Digester hatch connection, temperature guage adjustment, and potholing	11/3/2022		$ 9,971.62
62	Olsson	3220-000	Plant 1 Primary and Secondary Basins crack injection, concrete repair, channel cleaning, solids removal	11/3/2022		$ 146,734.55
Duduct-Common	Olsson	3231-000	Energy Building Monorail System Descope (F1-F4)	8/4/2022		$ (70,585.34)
Duduct-Liquids	Olsson	3220-000	Effluent Pump Station Descope (A1-A6)	8/4/2022		$ (483,605.73)
Duduct-Solids	Olsson	3287-000	Energy Building Modifications Descope (G1-G2, & H1-H2)	8/4/2022		$ (357,382.60)
HAL 01	Hallsten	3220-000	Cover Layout Modifications	8/4/2022		$ 16,715.25
Approved by Board of Directors (Amendments)						**$ 1,651,288.00**
1CM Common	Butier	3231-000	CM Change Order No. 1	7/13/2021		$ 48,995.00
1CM Liquids	Butier	3220-000	CM Change Order No. 1	7/13/2021		$ 294,125.00
1CM Solids	Butier	3287-000	CM Change Order No. 1	7/13/2021		$ 269,595.00
1ESDC Common	Carollo	3231-000	ESDC Change Order No. 1	6/3/2021		$ 18,210.00
1ESDC Liquids	Carollo	3220-000	ESDC Change Order No. 1	6/3/2021		$ 109,256.00
1ESDC Solids	Carollo	3287-000	ESDC Change Order No. 1	6/3/2021		$ 100,151.00
1G Common	Ninyo & Moore	3231-000	Geotechnical Services Change Order No. 1	2/3/2022		$ 5,400.00

Change Order No.	Vendor Name	Project ID	Description	Status Date	Days	Amount
1G Liquids	Ninyo & Moore	3220-000	Geotechnical Services Change Order No. 1	2/3/2022		$ 12,300.00
1G Solids	Ninyo & Moore	3287-000	Geotechnical Services Change Order No. 1	2/3/2022		$ 12,300.00
2CM Liquids	Butier	3220-000	CM Change Order No 2	5/12/2022		$ 196,268.00
2CM Solids	Butier	3287-000	CM Change Order No. 2	5/12/2022		$ 196,268.00
2ESDC Common	Carollo	3231-000	ESDC Change Order No. 2	12/9/2021		$ 11,075.00
2ESDC Liquids	Carollo	3220-000	ESDC Change Order No. 2	12/9/2021		$ 196,440.00
2ESDC Solids	Carollo	3287-000	ESDC Change Order No. 2	12/9/2021		$ 180,905.00
Potential Change						**$ 158,226.27**
PCO 002	Olsson	3287-000	Digester 4 Rail Coating	(blank)		$ (1,000.00)
PCO 004	Olsson	3287-000	Digester 4 Control Narrative	(blank)		$ 5,000.00
PCO 005	Olsson	3287-000	TWAS Slab Modifications	(blank)		$ 50,000.00
PCO 009	Olsson	3287-000	PLC East Headworks Integration	(blank)		$ 10,000.00
PCO 039	Olsson	3220-000	Diversion Structure Gate Actuator Power Feed Replacement	8/13/2020		$ 5,000.00
PCO 092	Olsson	3287-000	Hot Water System Expansion Tank	8/31/2021		$ 5,000.00
PCO 094	Olsson	3287-000	Additional Red Coloring Agent to Concrete	9/1/2021		$ 5,000.00
PCO 095	Olsson	3287-000	Foul Air Rerouting at DAFT 2	9/2/2021		$ 5,000.00
PCO 098	Olsson	3220-000	Plant 1 Bypass pumping Change	10/12/2021		$ 74,226.27
Grand Total					**191**	**$ 2,989,473.76**

Agenda Item 8

Engineering Committee Meeting

Meeting Date: November 10, 2022

TO: Engineering Committee

FROM: David Baranowski, Director of Engineering

SUBJECT: Regional Treatment Plant (RTP) Emergency Power System Information [Project Committee 17]

Overview

On September 6, 2022, the Regional Treatment Plant experienced a power outage that lasted more than 12 hours. During the outage, the cogeneration engine was not running, and only certain plant equipment was able to run on emergency power. Staff will provide information about the configuration of the power system at the Regional Treatment Plant.

Recommended Action: Information Item.